



Africa Agriculture Status Report 2015

YOUTH IN AGRICULTURE IN SUB-SAHARAN AFRICA

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Africa Agriculture Status Report 2015

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Foreword

With almost 200 million people aged 15-24, Africa has the youngest population in the world¹. Each year, 10 million young Africans enter the continent's workforce, more than ever before. This highlights the great challenge of youth unemployment, but it could also be seen as a great opportunity to encourage youth to be the engine behind the development of new agricultural enterprises — not just in farming but also in research, processing, packaging, and retailing of food stuffs. These demographic trends have important implications, both positive and negative, for Africa's social and economic future and, as shown in this Report, especially for the agriculture sector. It is clear that the future of Africa rests in its young people and there is an imperative need to create opportunities for economic growth, skills, prosperity and innovation in the agriculture sector to fight poverty and end hunger.

As stated by Makhtar Diop, World Bank Vice president for Africa: "Whether they live in the cities and towns of a rapidly urbanizing Africa, or in rural villages and settlements; whether they come from middle-class backgrounds or from vulnerable families that are living in poverty, one thing is certain – these young people have high expectations, and African policy makers are increasingly concerned about how to meet them."² Nevertheless, meet them we must.

There are good reasons for optimism: Africa has been experiencing unprecedented economic growth in recent years. In fact, of the world's ten fastest growing economies, six are in Africa. The rapid growth and modernization of Africa's financial, mining, retail and telecommunications sectors illustrate how the continent's prospects are changing for the better. These changes, coupled with increasing investments in modernizing agriculture, are opening up new employment and entrepreneurial opportunities for youth along the agricultural value chain. Yet little is being done to empower our young people to seize these opportunities.



Dr. Lindiwe Majele Sibanda

Chief Executive Officer and Head of Mission

Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN)

Dubbed as agents of change, movers and shakers, our young people face an array of challenges in the agriculture sector. These range from limited access to land, financial credit (working capital), and improved technologies, to a lack of practical skills and basic literacy, to social norms that largely exclude youth from participation in decision-making and vest control in older generations. Young women are especially hard hit by these constraints, and are often encouraged, directly and indirectly, to embrace more traditional social and economic roles.

Concerted and highly focused efforts by leaders in government, civil society and the private sector are needed to ensure that economic growth and social improvements are inclusive of, and in fact often driven by, our rural and urban youth. This publication highlights some examples of progress that begin to extend the conversation on youth and their role in Africa's socio-economic growth through agriculture. The Report illustrates that Africa's future is its youth, and we ignore them at our peril. We must invest in educating and empowering them to build their entrepreneurial and technical skills and spirit, so that they can play their rightful role in increasing agricultural productivity across the continent. Simultaneously, we must invest in enhancing our rural infrastructure (transport and storage systems, markets) and continue investing in telecommunication systems and other modern technologies that youth can utilize to achieve their full potential as agricultural entrepreneurs.

It is in Africa's long-term best interests to make these investments today and continue to do so over time, as articulated in the African Union's Malabo Declaration. We share a common goal of increasing agricultural productivity, improving food security, and reducing poverty across the continent. The role of young people in achieving this goal is absolutely vital and necessary.

¹ African Union - Youth at the AU website <http://www.africa-youth.org/>

² Diop, M. In: Filmer, Deon and Louise Fox. 2014. Youth Employment in Sub-Saharan Africa. Africa Development Series. Washington, DC: World Bank. doi:10.1596/978-1-4648-0107-5. License: Creative Commons Attribution CC BY 3.0

Preface

On September 25-27, 2015, the United Nations is holding a summit at which the Sustainable Development Goals and their associated targets for the next fifteen years are to be adopted. The Goals are fully integrated and indivisible, but the first three (of 17) have a direct bearing on the central theme addressed in this year's Africa Agriculture Status Report: Youth in Agriculture. The first three SDGs are to end poverty in all its forms everywhere; to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture; and to ensure healthy lives and promote wellbeing for all at all ages. To achieve these Goals in Africa requires the collective and all-inclusive effort of all stakeholders on the continent, regardless of which side of the demographic divide they represent.

Youth participation all along the value chain is vital to the growth of the agriculture-based economies of most African countries – from agricultural research and development, to food production, storage and handling, to agroprocessing, through to marketing and distribution in local, regional and international food markets. African youth present an unprecedented opportunity to deal with the constraints and challenges holding back improvements in agricultural productivity. Channeling the energy, strength, and dynamism of Africa's youth into productive, competitive and profitable agribusinesses (including food production) will boost agricultural productivity, ensure sustainable food production system, create jobs, and generate incomes. The impact of youth involvement and participation in agriculture and food systems will be seen in sustainable economic growth, and in the reduction of poverty and malnutrition across the continent.

The "Africa Agriculture Status Report: Youth in Agriculture" is the third volume in this series. The 2015 report maintains the original objective of producing an annual series that provides an in-depth and comprehensive analysis of emerging issues and challenges being faced by Africa's smallholder farmers; the series allows African scholars and development professionals, as well as their colleagues in non-African countries, to contribute practical and evidence-based recommendations and share knowledge that contributes to Africa's food security. The publication has also maintained its two section format:

a detailed narrative that addresses various facets of the publication's theme, and a data section that presents country-level agriculture and economic growth data which reveal important trends in African agricultural development.

The chapters in this year's narrative section deal with the current status of youth in sub-Saharan Africa and present the opportunities and potential that the region's 'youth bulge' and 'youthening' generation brings to agriculture. Challenges to agricultural productivity in SSA, such as land tenure and reform issues, lack of capital and limited access to finance and credit, inadequate supplies of improved farming inputs, limited availability of new and innovative technologies and methods, untapped entrepreneurship skills, and limited public and private sector investment in agriculture and social infrastructure are all discussed in this Report. The significant opportunities in the agriculture sector that are available to young 'agripreneurs', and the progress that has been made in the sector to harness the skills and the potential of youth, are also presented in detail. Such opportunities as the use of improved technologies (high-yielding varieties and hybrids, organic and inorganic fertilizers, conservation farming methods, and appropriate mechanization), the rapid penetration and uptake of ICTs, innovative and inclusive financing programs and investments, entrepreneurship and agribusiness initiatives, formal and informal education and training, and the steps being taken towards a more conducive policy environment – all make Youth in Agriculture a creditable and timely theme.

This report is an affirmation and recognition of the prominent role of youth in transforming SSA agriculture and their vital contribution to engendering a uniquely African green revolution. Youth are vital to development and growth across Africa. The hope is that all stakeholders – whether from the public or private sector, or from government or non-governmental organizations working to transform African agriculture – will recognize the importance and potential of Africa's youth and wisely invest in them to reduce poverty, end hunger, and ensure healthy lives and wellbeing for all at all ages.



David Sarfo Ameyaw
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Dr. Agnes Matilda Kalibata

President, AGRA

Acronyms

3D	3-dimensional
4-H	Head, Heart, Hands and Health
AABS	Association of African Business Schools
ACC	Agricultural Commercialization Clusters
ACP	Africa, Caribbean and Pacific Group of States
ADLI	Agricultural Development Led Industrialization
AECF	Africa Enterprise Challenge Fund
AESIF	Agricultural Education and Skills Improvement Framework
AET	Agriculture Education and Training
AfDB	African Development Bank Group
AFK	Amiran Farmers Kit
AgBIT	Agri-Business incubation Trust
AGRA	Alliance for a Green Revolution in Africa
AIIC	Agribusiness Innovation Incubator Consortia
AIS	Agricultural Innovation System
ANAFE	African Network for Agriculture, Agroforestry and Natural Resources Education
ARDYIS	Agriculture, Rural Development and Youth in the Information Society
ARTP	Autorité de Regulation des Telecommunications et des Postes
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
ASDS	Agricultural Sector Development Strategy
ASTF	Africa Solidarity Trust Fund
ATA	Agricultural Transformation Agency
ATM	Automated Teller Machine
ATVET	Agricultural Technical and Vocational Education and Training
AU	African Union
AUC	African Union Commission
AVC	Agricultural Value Chain
AVCF	Agricultural Value Chain Finance
AYC	African Youth Charter
BAC	Business Advisory Centres
BDS	Business Development Services
CA	Conservation Agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CBE	Competency-Based Economies
CCARDESA	The Centre for Coordination of Agricultural Research and Development for Southern Africa
CCLEAR	Consortium for Creating Competitive Livestock Entrepreneurs in Agriculture
CDC	Commonwealth Development Corporation

CDF	Constituency Development Fund
CECAM	Caisses d'Epargne et de Crédit Agricole Mutuels
CFA	Communauté françaises d'Afrique
CGIAR	Consultative Group for International Agricultural Research
CISS	Credit Information Sharing System
COMESA	Common Market for Eastern and Southern Africa
CORAF	The Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles
WECARD	West and Central African Council for Agricultural Research and Development
CPI	Capacity Performance Indicator
CRBPs	Children's Rights and Business Principles
CTA	Technical Centre for Agricultural and Rural Cooperation ACP-EU
CURAD	The Consortium for Enhancing University Responsiveness to Agribusiness Development Limited
DANIDA	Danish International Development Agency
DFCU	Development Finance Company of Uganda
DFID	Department for International Development
DRDLR	Department of Rural Development and Land Reform
EAC	East African Community
ARDP	EAC Agriculture and Rural Development Policy
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
EPRC	Economic Policy Research Center
FaaB	Farm-as-a-Business
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organization
ILO	International Labour Organisation
FARA	Forum for Agricultural Research in Africa
FASDEP	Food and Agriculture Sector Development Policy
FBOs	Farmer Based Organisations
FBS	Farm Business School
FCI	Farm Concern International
FDI	Foreign Direct Investments
FDSUT	Fonds de Développement du Service Universel des Télécommunications
FFS	Farmers Field Schools
FMARD	Federal Ministry of Agriculture and Rural Development
FNS	Food and Nutrition Security
FoE	Formation of Enterprise
FORUM	Forum on Agricultural Resource Husbandry
FPBICs	Food Processing Business Incubator Centres
FSPs	Financial Service Providers
G2P	Government-to-person
GADCO	Global Agri-Development Company
GDP	Gross Domestic Product
GFAR	Global Forum on Agricultural Research
GIIN	Global Impact Investing Network
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit

GNP	Gross National Product
GPS	Global Positioning System
GYIN	Global Youth Innovation Network
HCD	Human Capacity Development
IC	Innovation Center
ICRISAT	International Crops research Institute for the Semi-Arid Tropics
ICT	Information and Communications Technology
ICT4Ag	ICT for Agriculture
IFAD	International Fund for Agricultural Development
IICD	International Institute for Communication and Development
IITA	International Institute of Tropical Agriculture
ILO	International Labour Organization
IMO	Indigenous Micro-Organism
ISFM	Integrated Soil Fertility Management
ITU	International Telecommunication Union
IYA	IITA Youth Agripreneurs
IYDS	Integrated Youth Development Strategy
JFFLS	Junior Farmer Field and Life Schools
KALRO	Kenya Agricultural & Livestock Research Organization
KKV	Kazi kwa Vijana (which means "Jobs for the Youth." in English)
MAP	Market Access Program
MDG	Millennium Development Goals
METASIP	Medium Term Agriculture Sector Investment Plan
MFI	Microfinance institution
MIS	Market Information Systems
MOFA	Ministry of Food and Agriculture
MT	Metric Ton
MTN	Mobile Telecommunication Network
MYICT	Ministry of Youth and ICT (Rwanda)
NAP	National Action Plans
NARYSEC	National Rural Youth Service Corps
NCA	National Council on Agriculture
NEEDS	National Economic Empowerment and Development Strategy
NEPAD	New Partnership for Africa's Development
NFSP	Non-financial service providers
NFTC	National Fertilizer Technical Committee
NGO	Non-Governmental Organisation
NPCA	NEPAD Planning and Coordinating Agency
NQF	National Qualifications Framework
NYP	National Youth Policies
OHADA	Organisation pour l'Harmonisation en Afrique du Droit des Affaires
OJT	On-the-job-training
OLX	OnLine eXchange
OST	Out-of-School Time
PanAAC	Pan African Agribusiness and Agro Industry Consortium
PASS	Program for Africa's Seed Systems
PP	Partnership Platform

PPP	Public-Private Partnership
PRB	Population Reference Bureau
PRI	Program-related Investment
PYD	Positive Youth Development
RFI	Rural Futures Initiative
RFID	Radio Frequency Identification
RPL	Recognition of Prior Learning
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SACCO	Savings and Credit Cooperatives
SACCOS	Savings and Credit Cooperative Societies
SADC	Southern Africa Development Community
SADC RAP	SADC Regional Agricultural Policy
SAGCOT	Southern Agricultural Growth Corridor of Tanzania
SavaNet	Savannah Young Farmer's Network
SHF	Smallholder farmers
SI	Social Impact
SII	Social Impact Investment
SIM	Subscriber Identity Module
SME	Small- and medium-sized enterprises
SMS	Short Message Service
SNDP	Sixth National Development Plan
SSA	Sub-Saharan Africa
STRYDE	Strengthening Rural Youth Development through Enterprise
T&L	Teaching and Learning
TAE	Tertiary Agricultural Education
TCMO	Total Cost of Mobile Ownership
UEMOA	Union Economique et Monétaire Ouest Africaine
UN-DESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UniBRAIN	The Universities, Business and Research in Agricultural Innovation
UNIDO	United Nations Industrial Development Organization
USA	United States of America
USAID	United States Agency for International Development
USD	U.S. Dollar
Web2forDev	Web 2.0 for Development
WSIS	World Summit on the Information Society
YARD	Youth in Agriculture and Rural Development
YEAP	Youth Employment in Agriculture Programme
YEDF	Youth Enterprise Development Fund
YIAP	Youth in Agriculture Programme
YISA	Youth Initiative for Sustainable Agriculture
YoBloCo	Youth in Agriculture Blog Competition
YPARD	Young Professionals for Agricultural Development
YSO	Youth Serving Organization
ZERI	Zero Emission Research Institute

Chapter 1

Current Status of Youth in Agriculture in Sub-Saharan Africa

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KEY MESSAGES

ONE

An increasing proportion of African children are completing primary school compared to fifty years ago (70% in 2011), and as they transition into young adulthood, most still face the challenges of unemployment and underemployment, aggravated by their lack of relevant skills and education, and limited access to land and capital.

TWO

Effective youth-oriented policies and innovative development strategies are needed to tap the energy of Africa's young labor force and channel it productively, especially in the agriculture sector.

THREE

The 'demographic dividend' being experienced across the continent presents both opportunities and challenges. Africa's economic and social development agenda will be fully realized only if youth are mobilized, incentivized, energized, and equipped for transformation.

FOUR

While many African countries have enjoyed rapid economic growth over the past 15 years, in general this growth has not been 'pro-poor', occurring primarily in sectors that generate relatively few employment opportunities for youth.

FIVE

There is a pressing need to promote growth in sectors that can absorb the youth population, particularly agriculture. This kind of pro-poor growth improves the economy, but also improves food security, raises farm incomes, creates employment along the food value chain, and empowers poor and the marginalized groups, including women.

SIX

Yet evidence indicates that youth are leaving agriculture, which raises the question of whether trying to attract or retain youth in agriculture the right policy avenue to pursue. The answer depends on the particular circumstances of each country.

SEVEN

Clearly, however, agriculture plays a vital role in African economic growth and social improvement. It has the highest percentage of the working population (about 65%). It contributes about 30% of the GDP in most countries. It is critical to economic growth, generating incomes, and creating jobs. For now and the foreseeable future, it is and will remain the primary employment growth sector for most countries. For this reason, new opportunities for youth in agriculture and along the production and marketing value chain need to be identified and promoted to create wealth and achieve pro-poor economic growth.

Introduction

African countries have the youngest population in the world and the largest share of the world's available arable land. Indeed, as the Youth Division of the Africa Union Commission puts it, about 65% of the total population of Africa is below the age of 35 years and 10 million youth enter the labor market annually. The future of the continent is in the hands of the youth. They are one of the greatest assets and an inevitable force for improving the productivity and growth of all sectors of Africa's economy. In the urban and rural areas of Africa, young people are in the majority. They are dynamic, enthusiastic, resourceful, creative, innovative and adventurous. They come from different and highly varied social backgrounds, cultures and traditions. They are very heterogeneous and they cannot be ignored any more if we are going to achieve an Africa renaissance in the 21st century. With proper planning and well-structured social and economic policy formulation, and implementation, Africa's youth can be mobilized to provide goods and services for the continent and for the world in general. They embody unprecedented opportunities and hope for the future.

Africa's youth are becoming well educated, equipped, and empowered to make meaningful and productive contributions to the continent's economic and social wellbeing. An increasing proportion of children are completing primary school compared to fifty years ago (70% in 2011), yet as these children transition into young adulthood, a majority of them continue to face the challenges of unemployment, underemployment, a lack of skills and relevant education, limited access to capital, and unmet needs for health-related information and services. Even so, they still have the potential (if they are healthy and fully developed) to contribute effectively to the realization of the declared Vision and Mission of Africa's leaders¹. There remain great benefits to attain and the continent can grow substantially, both economically and socially, if the right policies and innovative development strategies are designed and put in place by both the public and private sector – policies and strategies that will tap the energy of Africa's young labor force and channel it productively, especially in the agriculture sector where a large proportion of the population is currently employed.

Definition of Youth in Africa

The definition of 'Youth in Africa' varies from society, culture, and tribe. It also "varies across time, space, as well as within societies"² Ghana, Tanzania and South Africa define the youth population as those between the ages of 15 and 35; Nigeria and Swaziland define it as those between 12 and 30 years; and Botswana and Mauritius define youth as those between 14 and 25 years. International organizations such as the United Nations and the World Bank define youth as those aged 15-24 years (UNECA, 2009). The African Youth Charter defines youth as people in the age group 15-35. Bezu and Holden (2014) looked at preferred

livelihood options for youth in Ethiopia, with youth defined as the age group 15-29 years. Ahaibwe et al. (2013) examine the challenges and prospects of youth engagement in agriculture in Uganda and they define youth as the age group 18-30 years. Agwu et al. (2014) investigate the determinants of youth participation in agricultural labor in Abia State, Nigeria. Although it was not unequivocally stated, the authors' definition of youth is the age bracket 18 to 40 years of age. In this report, youth is defined according to the African Youth Charter, namely people between the ages of 15 (exclusive) and 35 (inclusive).

The Youth Bulge in Africa

Africa is the fastest growing continent in the world and more than half of global population growth between now and 2050 is expected to occur in Africa. Africa has the highest rate of population growth among major areas, growing at a pace of 2.55 per cent annually in 2010-2015³. There

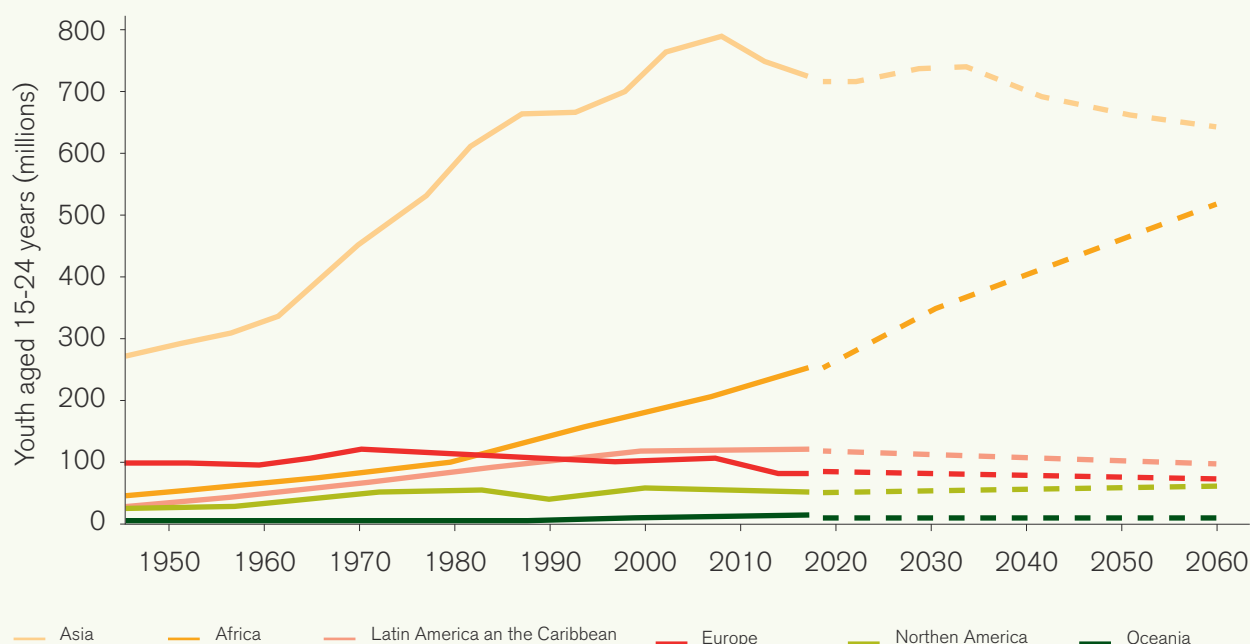
is currently a large youth bulge in Africa. In generic terms, demographers define a youth bulge "as a peak in the share of persons aged 15-24 in the population". In SSA, as in many developing regions, the youth bulge was reached recently, around 2005, and the total share of youth in the population

¹ AU Africa Youth Decade 2009 – 2018 Plan of Action

² Ibid, p2

³ United Nations Department of Economic and Social Affairs/Population Division, World Population Prospects: The 2015 Revision, Key Findings and Advance Tables, p 3

Figure 1.1 Youth aged 15-24 years, by region, 1950-2060



Source: United Nations (2013) *World Population Prospects: The 2012 Revision*

of SSA countries is expected to remain above 20% through 2015⁴. The population in SSA is expected to more than double between the years of 2015 and 2050. By the year 2100, ten African countries are projected to increase their populations by at least five-fold: Angola, Burundi, Democratic Republic of Congo, Malawi, Mali, Niger, Somalia, Uganda, United Republic of Tanzania and Zambia.⁵

Africa's population is very young. Children under the age of 15 currently (in 2015) account for 41% of the continent's population, and those aged 15 to 24 account for about 19%⁶. Of the 10 countries (globally) with the largest share of youth relative to total national population in 2012, five of them are in SSA. Also almost 50% of the 80 countries with the largest share of youth in their total national population in 2012 are located in SSA⁷. In the UNFPA "State of the World Population 2014", it is noted that in "15 countries in sub-Saharan Africa, half the population is under 18. In Chad, Niger and Uganda, half are under 16. Sub-Saharan Africa populations are actually 'youthening'" rather than ageing, meaning their median age is projected to decline from 2010 to 2015"⁸.

The UN Population Fact, 2014 states: "In 2015, 226 million youth aged 15-24 years lived in Africa, accounting for 19 per cent of the global youth population. By 2030, it is projected that the number of youth in Africa will have increased by 42 per cent. Africa's youth population is expected to continue to grow throughout the remainder of the twenty-first century, more than doubling from current levels by 2055"⁹. It is also projected that between 2015 and 2030, there will be half a million more 15-year-olds each year than the year before. By 2020, 3 out of 4 Africans will be, on average, 20 years old. The projected proportion of young people in SSA is forecast to be 30% by 2050, while the elderly population is expected to remain below 5%, compared to about 16% for the rest of the world¹⁰. Africa is currently in a period referred to as a "demographic bonus" or "demographic dividend" – the decline in the proportion of young people is much greater than the increase in the proportion of the elderly people and the share of the working-age is projected to increase during this 50-year period (Bloom, Canning, and Sevilla, 2002).¹¹

⁴ Isabel Ortiz, Matthew Cummins; UNICEF SOCIAL AND ECONOMIC POLICY WORKING PAPER, February 2012

⁵ United Nations, *World Population Prospects: The 2015 Revision, Key Findings and Advance Tables*

⁶ Ibid

⁷ UNICEF Working Paper, 2012, p 8, 9

⁸ UNFPA, *State of the World Population 2014*

⁹ UN, *Population Fact*, May 2015

¹⁰ Deverez, Jean-Claude, editor, *Challenges for Africa Agriculture*; Africa development forum series, The World Bank; 2011, p 25

¹¹ Ibid, P 25

Table 1.1 Ten Countries with the Youngest Populations in SSA 1950, 1980, 2015, 2013 and 2050

1950		1980		2015		2030		2050	
COUNTRY	MEDIAN AGE (YEARS)	COUNTRY	MEDIAN AGE (YEARS)	COUNTRY	MEDIAN AGE (YEARS)	COUNTRY	MEDIAN AGE (YEARS)	COUNTRY	MEDIAN AGE (YEARS)
Niger	15.2	Kenya	15.0	Niger	14.8	Niger	15.2	Niger	17.8
St. Vincent and the Grenadines	15.4	State of Palestine	15.1	Uganda	15.9	Somalia	17.7	Somalia	20.8
Tonga	15.5	Yemen	15.3	Chad	16.0	Angola	17.7	Angola	21
Grenada	16.3	Mayotte	15.4	Angola	16.1	Chad	17.9	Zambia	21.4
Paraguay	16.5	Jordan	15.5	Mali	16.2	Mali	17.9	Mali	21.4
Djibouti	16.5	Zimbabwe	15.5	Somalia	16.5	Uganda	18.1	Chad	21.7
Samoa	16.6	Swaziland	15.6	Gambia	16.8	Gambia	18.3	Burundi	21.8
Fiji	16.6	Syrian Arab Republic	15.6	Zambia	16.9	Burundi	18.5	Uganda	21.9
Vanuatu	16.8	Zambia	15.9	Dem. Rep. Congo	16.9	Zambia	18.5	Gambia	22.1
United Republic of Tanzania	16.9	Rwanda	16.0	Burkina Faso	17.0	Dem. Rep. Congo	18.6	Tanzania	22.2
World	23.5	World	22.5	World	29.6	World	33.1	World	36.1

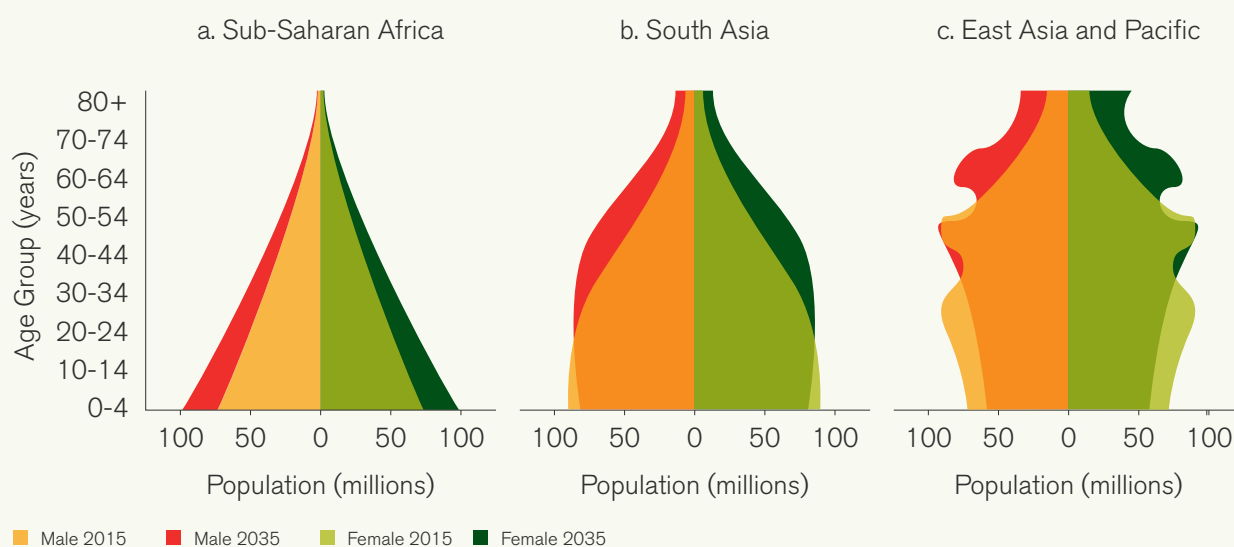
Source: World Population Prospects 2015

Table 1.2 Top SSA Countries with Total National Population

COUNTRY	%	COUNTRY	%
Swaziland	24.4	Burkina Faso	20.0
Zimbabwe	24.2	Angola	19.9
Lesotho	23.0	Guinea-Bissau	19.8
Cape verde	22.2	Mauritania	19.8
Burundi	21.8	Mozambique	19.8
Ethiopia	21.5	Guinea	19.7
Botswana	21.4	Zambia	19.7
Djibouti	21.2	Chad	19.7
Namibia	21.1	Benin	19.7
Gabon	21.0	Sudan	19.6
Togo	20.6	Rwanda	19.6
Senegal	20.5	Mali	19.6
Gambia	20.5	Ghana	19.6
Central African Republic	20.5	Eritrea	19.5
Malawi	20.3	Sierra Leone	19.5
Congo, Dem. Republic	20.3	Tanzania	19.4
Côte d'Ivoire	20.3	Equatorial Guinea	19.3
Cameroon	20.3	Nigeria	19.2
Kenya	20.1	Liberia	19.2
Madagascar	20.1	Congo, Republic of	19.1
Uganda	20.0		

Source: World Population Prospects 2015

Figure 1.2 The structure of Sub-Saharan Africa's population is different than in other regions



Source: Maïga et al., 2015

Opportunities and challenges for the youth bulge in SSA

The SSA 'youth bulge', 'demographic bonus' or 'demographic dividend' presents potential opportunities and also challenges in terms of social and economic development and transformation across Africa. "Youth is Africa's foremost social capital that requires priority investment"¹². The emerging potential of Africa and the economic and social development agenda of the continent can be fully realized when the youth bulge can be mobilized, incentivized, energized, and equipped for transformation. This youth bulge can be empowered to achieve higher productivity, increased income-generation, and rapid economic growth, both now and in the future. Africa needs to tap the resourcefulness and the dynamism of its younger generations. African countries have to work on providing jobs for their youth and also work with them to reduce poverty, increase labor productivity, and enable them to contribute to meeting the challenges of the 21st century.

There are opportunities for the youth in SSA to contribute to economic growth, but at the same time there are a lot of challenges. While there has been unprecedented economic growth in SSA between 2000 and 2013, with average GDP growth of 4.7-5.8% and about one-quarter of the countries growing at a clip of 7% or better, this growth has not been pro-

poor¹³. Growth has occurred in sectors that generate less employment for the continent's youth. Most SSA countries have experienced what is called 'jobless growth'. They are also facing the problem of "double whammy" - a youth jobs crisis and an expanding supply of young laborers in need of work¹⁴. There is still a need to promote employment growth in sectors that can absorb the youth population, such as agriculture. Pro-poor growth, especially in agriculture, improves the economy, but also improves food security, raises farm incomes, creates employment along the food value chain, and empowers poor and the marginalized groups, including women. Agricultural growth contributes directly to MDG 1 (halving the proportion of people living in extreme poverty and hunger), MDG 2 (promoting gender equality and empowering women), MDG 3 (ensuring environmental sustainability), and MDG 4 (developing global partnerships through increased market access).¹⁵ It is noted that each 1% increase in average per capita consumption has been associated with a reduction in poverty of 0.69%, as compared to a reduction in poverty that averaged just over 2% elsewhere in the world (World Bank, 2013). GDP growth in most African countries has been due primarily to oil, gas and mineral extraction, and these are not labor-intensive sectors like agriculture and manufacturing¹⁶.

¹² UNFPA: Africa Youth Development and Empowerment

¹³ The World Bank, Youth Employment in Sub-Saharan Africa, Africa Development Forum, 2014

¹⁴ UNICEF, Global Job Crisis and Youth Bulge, p 6.

¹⁵ The World Bank, Agriculture Growth for the Poor, An Agenda for Development, p1

¹⁶ Ibid

The Montpellier Panel (June 2014) noted: “although Africa’s youth on the whole are increasingly better educated, rural youth are still plagued by low levels of literacy, poor numeracy, high drop-out rates, particularly in secondary education, and low levels of tertiary enrollments. Based on current trends, 59% of 20-24 year olds will complete secondary education in 2030, compared to 42% today. This will translate into 137 million young people with secondary education and 12 million with tertiary education by 2030”.¹⁷

Youth unemployment in sub-Saharan Africa is higher than adult unemployment, and in fact youth in SSA are twice as likely to be unemployed than are adults. In 2012, the youth unemployment rate in SSA was 11.8% and it is projected to remain close to 11.7% in the coming years (ILO, 2013). Another interesting fact about the SSA youth unemployment rate is its link to higher levels of poverty. It is estimated that 20.1% of SSA youths who are employed earn only USD 1.25/day or less. This is referred to as the ‘working poverty rate’ and reflects that most young people in SSA are working as a necessity rather than by choice. At the USD 2.00/day level, the working poverty rate was about 64% in 2013. This makes SSA youth unemployment as “much a qualitative as a quantitative problem” (ILO, 2013)¹⁸. Also it is noted that, while salaried workers account for half of employment at the global level – about 48.4% in 2012 – in SSA the proportion is only 21.4%. Youth employment in SSA is ‘vulnerable employment’. Many youth start their working lives as unpaid family workers, and then become ‘own-accounts’ workers.

There is also a higher level of mismatched skills in SSA. The rate of unemployment among the better educated is low in SSA compared to the unemployment rates of the less or uneducated, and low skilled workers.¹⁹ Among the labor force, those who are classified as having a ‘wage job’ make up only 16% of the workforce, with almost 62% of the remainder working on family farms and 22% engaged in household enterprises²⁰.

Youth employment in Africa is a problem, and it may appear to be more of a problem because the focus is on wage jobs. Instead, the focus should be on tapping the dynamism and resourcefulness of youth to establish productive and pro-poor ventures, especially in agriculture, and helping them to create jobs for themselves (and others) within the agriculture value chain. Only by doing this will the potential of a brighter future for Africa be realized. In the World Bank report on Youth Employment in Sub-Saharan Africa, it is stated that “The challenge of youth employment in Africa may appear daunting, yet Africa’s vibrant youth represent an enormous opportunity, particularly now, when populations in much of the world are aging rapidly. Youth not only need jobs, but also create them. Africa’s growing labor force can be an asset in the global marketplace. Realizing this brighter vision for Africa’s future, however, will require a clearer understanding of how to benefit from this asset. Meeting the youth employment challenge in all its dimensions – demographic, economic, and social – and understanding the forces that created the challenge, can open potential pathways toward a better life for young people and better prospects for the countries where they live.”²¹

Youth in Agriculture

For most African countries, agriculture remains the largest employer of any sector in the economy. Agriculture employs about 65% of the total work labor force in SSA. Though there has been decline in the relative number of agriculture workers, it still accounts for a majority of the working population in the region²². Many SSA countries have a farming population that is greater than the rural population. It is therefore the logical sector to focus on when designing policies to provide jobs for youth. “Efforts to accelerate agricultural growth and improve food security have often been separated conceptually from efforts to create jobs for young people.... Agriculture, already

Africa’s largest employer, is the most immediate means of catalyzing economic growth and employment for young people”.²³ According to Christiaensen, Demery and Kuhl (2011), a 1% increase in agricultural per capita GDP reduced the poverty gap five times more than a 1% increase in GDP per capita in other sectors, mainly among the poorest people. It is a pro-poor, income-generating and employment-creating sector for most SSA economies. The average contribution of agriculture to GDP in most African countries has been on the decline or static at around 30% since early 1980. The proportion of exports of farm products and food dropped from 10% in the 1960s to about 4% in

¹⁷ Montpellier Panel June 2014

¹⁸ ILO, Global Employment Trends for Youth 2013, A generation at

¹⁹ Ibid

²⁰ Youth Employment in Sub-Saharan Africa, p 5

²¹ Ibid

²² Devezé, Jean-Claude, p 2

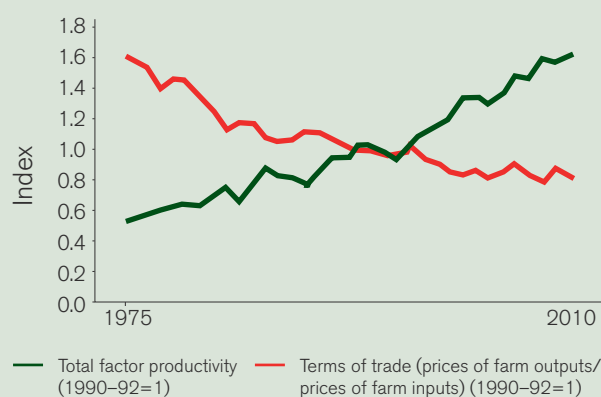
²³ Youth Employment in Sub-Saharan Africa

Box 1.1 When agriculture is more productive, economies can grow

Despite differences in the global context and national economic circumstances, the effects of agriculture on the U.S. economy over the past 45 years may provide useful lessons for Africa at this juncture, when so many young people are poised to enter the agricultural workforce. From 1960 to 2005, the United States produced more agricultural commodities more cheaply than ever. The real prices of most agricultural commodities declined 20-50 percent. Even though the cost of goods was rising throughout the world, most food prices were still lower in 2010 (in constant U.S. dollars) than they were in 1960. For the economy as a whole, low prices of primary food products meant that it was much cheaper to process food into an array of consumer products (an activity that generated new jobs). The low prices enabled consumers to spend more money on items other than food. Higher agricultural productivity contributed to broad-based income growth in the United States.

Even while the process of commodities they produced declined, farmers and other agricultural workers preserved their livelihoods. As real agricultural prices fell and the cost of inputs and factors of production rose, farmers in the United States and other developed countries still managed to profit (and so did agricultural wage) by increasing their productivity. They used inputs more efficiently and changed their mix of outputs. In the United States between 1975 and 2010, total factor productivity rose 2.2 percent a year, which was low by historic standards but sufficient to maintain profitability.

Higher total factor productivity helped U.S. farmers to compensate for declining terms of trade, 1975-2009



Source: Executive office of the President, 2011

Percentage change in prices of selected food products in the United States, 1960-2010

Period	Wheat	Maize	Sugar	Beef
1960-2005	-43	-52	-19	-23
2006-2010	8	41	50	22
1960-2010	-24	-18	24	-10

Source: World Bank Pink Sheets

2005²⁴. With an abundant supply of youthful labor and an increasing demand for food and farm products in national, regional and global markets, SSA countries should be able to redirect and provide the skills and knowledge needed for the youth labor force to engage in productive, ecologically sustainable agriculture. It is currently projected that Africa's food markets will increase from USD 313 billion in 2010 to USD 1 trillion in 2030 (World Bank, 2013); food imports have exceeded exports since 2003. There are opportunities for the youth to become producers and suppliers of food to meet the demand created by Africa's expanding domestic market.²⁵ Demand in international food markets is growing as well, and increasing global food prices hold the promise of higher rates of return on investments in high-value agricultural products. More than two-thirds of young people who work in rural areas are already engaged in agriculture, and there is still an abundant supply of land. Agriculture is a sector of opportunities for rural young people.

Despite opportunities for youth in the food supply chain, there are major challenges and constraints when it comes to agriculture and youth in SSA:

- Secure land tenure is not assured in many SSA countries;
- Increasing and sustaining the productivity and production of smallholder family farms to a commercial level is difficult;
- Access to affordable credit and working capital hampers agricultural investments;
- Limited availability and access to appropriate productivity-boosting technology and equipment is a common challenge in many SSA countries;
- Access to international and regional markets is difficult; and

²⁴ Deuze, Jean-Claude, p 44

²⁵ Youth Employment in Sub-Saharan Africa

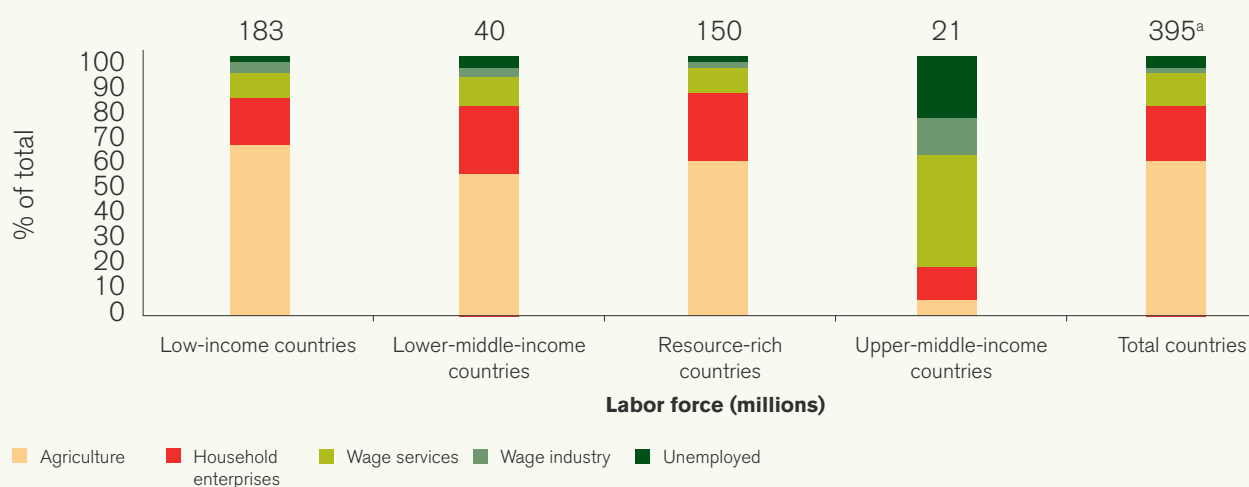
- The negative impacts of increasingly variable weather associated with climate change are already becoming evident.

In the larger economic context, farm products and food markets in SSA have suffered from a lack of public and private sector investment in infrastructure, extension services, direct and indirect taxation, and inconsistent and limited supply of farming inputs, such as

certified seeds, organic and inorganic fertilizer, finance, risk insurance, and appropriate water management and irrigation. This has made deployment, engagement, and investment in agriculture risky and unattractive to the average young person in SSA. However, with appropriate policies, public and private sector strategic interventions, suitable technologies, and access to innovative agriculture financing, young people can improve their livelihoods while contributing to economic growth and poverty reduction.

Figure 1.3 Where are Africans working?

Estimated structure of employment in Sud-Saharan Africa by country type, 2010



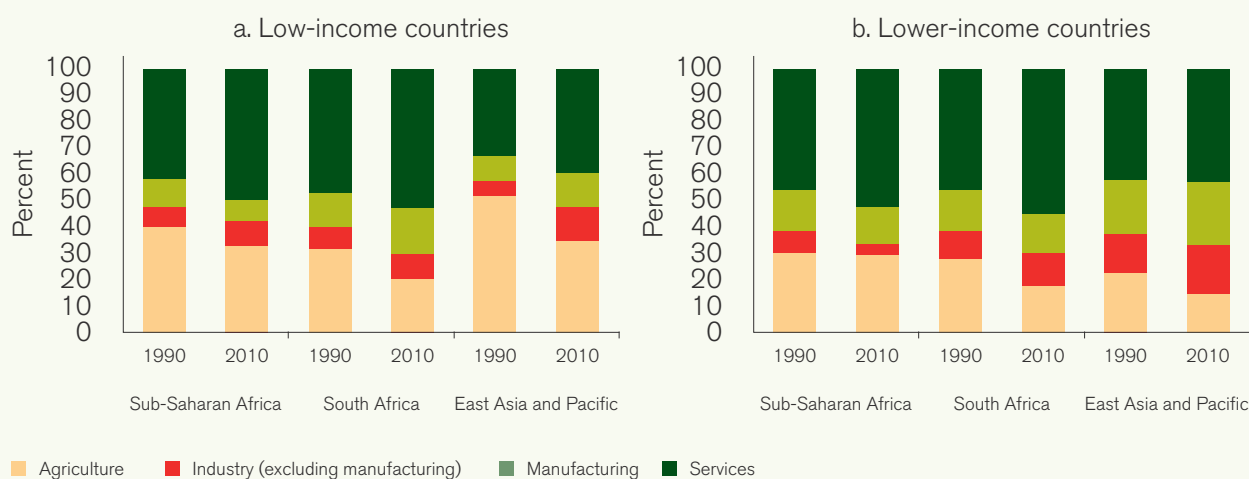
Source: Fox et al. 2013

Note: On the horizontal axis, numbers show size of the labor force, ages 15-64, in each group. Resource-rich countries included are Angola, Chad, the Democratic Republic of Congo, Guinea, Nigeria, the Republic of Congo, Sudan and Republic of South Sudan, and Zambia.

^a Numbers do not add to total because of rounding.

Figure 1.4 Over the past two decades, agriculture's share in GDP contracted in Africa, but manufacturing did not replace it

Estimated structure of employment in Sud-Saharan Africa by country type, 2010



Source: World Bank various years

Are Young People Leaving Agriculture?

It is often noted that youth are leaving agriculture for other opportunities in urban areas, and that this accounts for the increased rate of urbanization in most Africa countries. Several reasons may explain why youth would be engaging less in agriculture in Africa. One reason may be that young people are achieving higher levels of education. Indeed, African countries have made great strides in recent years in primary and secondary education enrollment. Data from the World Bank show that Ethiopia, Niger, and Nigeria saw their secondary school enrollment more than double between 2000 and 2012.

Another reason cited for youth leaving agriculture is limited access to secure land. To make a livelihood from agriculture one needs to acquire or rent land. However with ill-defined land tenure policies in many African countries, land markets lack the structure they need for individuals to buy or rent land with confidence (Amanor, 2010). A recent finding that supports the land access hypothesis is the one by Bezu and Holden (2014) who concluded, based on econometric analyses, that the main reason for rural Ethiopian youth leaving agriculture is the lack of access to land.

For those who do have secure access to land, the question becomes one of how much income can be generated from the land holding. With its current low levels of productivity, African agriculture does not seem lucrative. Furthermore, low agricultural productivity leads to high domestic food prices, high wages, and lower competitiveness (Filmer and Fox, 2014). These authors argue that high domestic food prices also bring about lower real earnings for all except

farmers that are net food sellers and have low production costs. Therefore, by increasing agricultural productivity, one can kill two birds with one stone: lower domestic food prices and the generation of more lucrative non-farm jobs.

Past research empirically confirmed an inverse relationship between farm size and productivity in developing countries. Ali and Deininger (2014) confirmed this relationship for Rwanda and argue that this is due to labor and other factor market imperfections. Their results suggest that smaller farms are more productive and profitable in Rwanda. A logical conclusion is to try to keep farm size relatively small or not to aggregate farmland so as to raise productivity. But their findings are specific to Rwanda and cannot be generalized to other countries. What does the relationship between farm size and productivity look like in a relatively land-abundant country like Niger? More country-specific research is needed to assess the apparent inverse relationship between farm size and productivity, and to develop appropriate recommendations.

Sumberg et al. (2014) argue that interventions targeted at providing jobs for youth by trying to increase their involvement in agriculture operate on the basis that educated youth do not find agriculture attractive. Such interventions are then designed to try to deal with the image problem of agriculture. The proponents of the agriculture image problem believe that youth involvement in agriculture is declining. The extent to which youth are involved in agriculture, in terms of participation rates in agricultural labor and in how many hours they work per week in agriculture is presented below.

Youth participation in agricultural labor

Maiga et al. (2015) estimated participation rates in agricultural labor for the youth using data from six countries: Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda. Their findings show that the youth (16-35) has participation rates in agricultural labor that ranges from 27.1% in Nigeria to 63.4% in Niger (Figure 1). Nigerian youth have the lowest probability of working in agriculture with only 27.1% probability and regional disparities exist. Indeed in northern Nigeria the probability that youth are working in agriculture is higher (36.5%) than that of the youth in southern Nigeria (17.8%). The average probability of youth working in agriculture across the six countries is 50.6%.

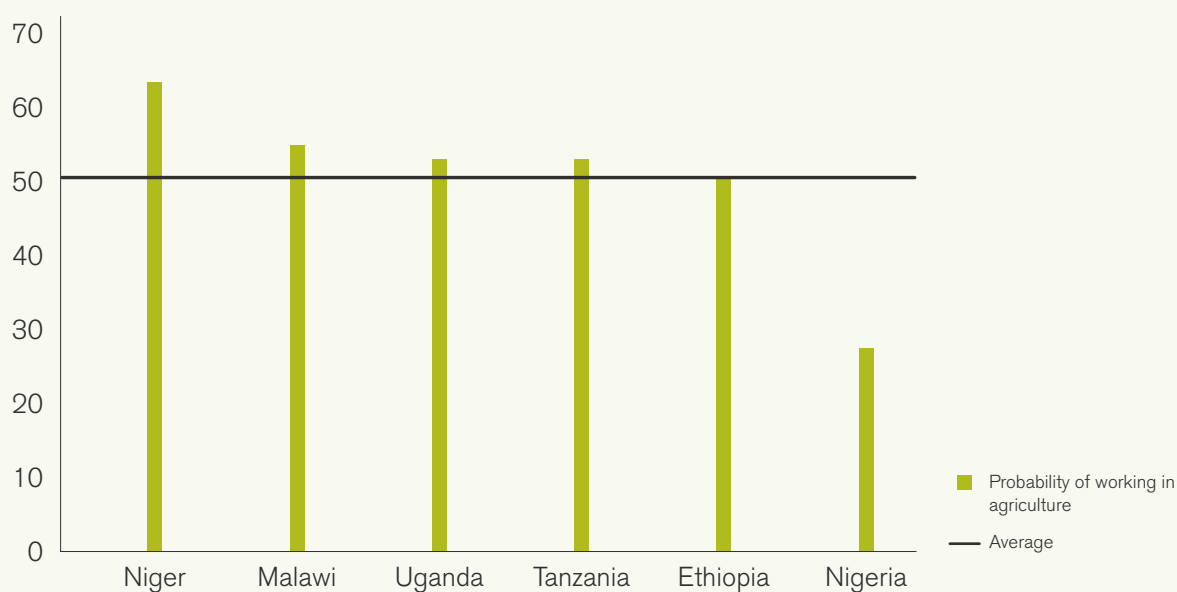
McMillan and Hartgen (2014) estimated the probability of working in agriculture for people 25 years and above using Demographic and Health Surveys (DHS) data from 24 African countries, including the six countries already mentioned. Their estimates are higher than Maiga et al.

(2015) for Ethiopia (60.9% versus 51.8 %), Tanzania (65.6% versus 46.3 %) and Uganda (67.1% versus 53.9 %). The reverse is true for Malawi (54.4% versus 51.4%), Niger (60.2% versus 44.8%) and Nigeria (33.8% versus 32.0 %).

In addition, the results by McMillan and Hartgen (2014) show a 10% decline in the share of labor engaged in agriculture for the age group 25 to 60 years of age in 19 African countries during the period 2000-2010. This decline corresponds to an 8% increase in the share of labor in services and a 2% increase in the share of labor in manufacturing during the same period.

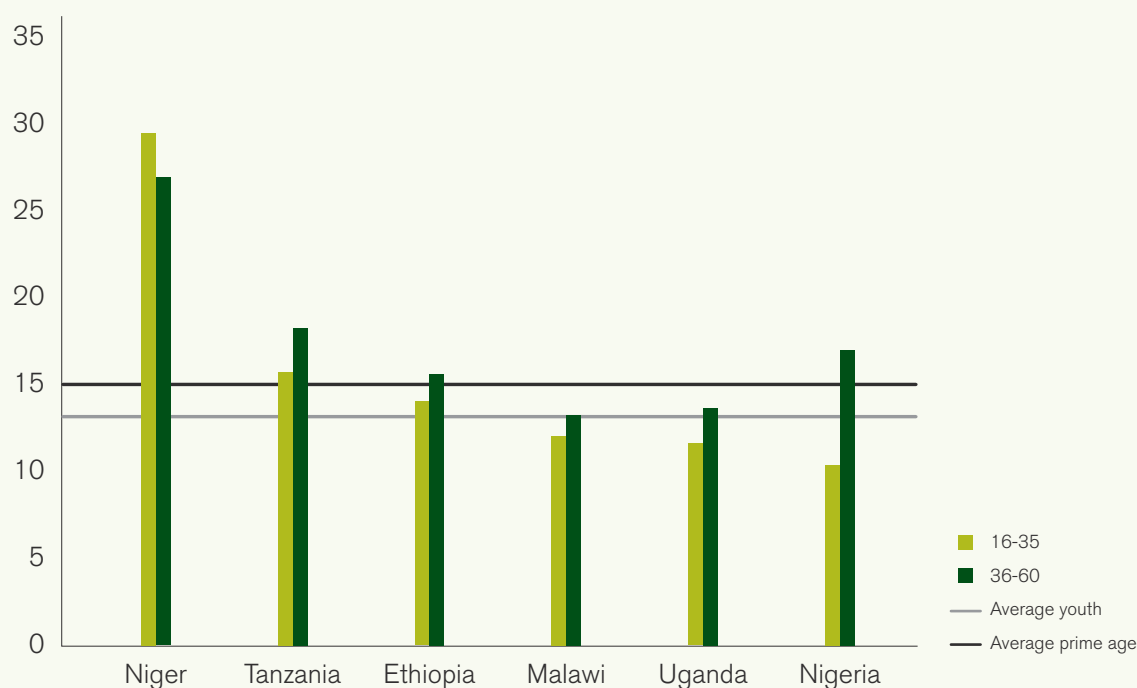
Findings by other researchers also suggest a decline in youth participation in agriculture. Ahaibwe, et al. (2013) examine the challenges and prospects of youth engagement in agriculture in Uganda using the 2005-06 and 2009-10 Uganda National Panel Survey data. They define youth as the age group 18-30 years. The

Figure 1.5 Probability of youth working in agriculture



Source: Maïga et al., 2015

Figure 1.6 Unconditional average hours worked per week in agriculture by the youth and prime age groups



Source: Maïga et al., 2015

findings show that youth engagement dropped from 73.2% to 64.2% between 2005-06 and 2009-10 for the cohort aged 18-30 in 2005-06. Bezu and Holden (2014) looked at preferred livelihood options for youth in Ethiopia. They examine rural youth livelihood choices and current land access using panel data from 2007

and 2013 to track youth migration patterns, with youth defined as the age group 15-29 years. Their findings show that only 9% of the rural youth in Ethiopia plan to work in agriculture and that between 2007 and 2013, 15% of the youth in the sample had migrated with rates as high as 31% in one area.

Average hours worked per week in agriculture

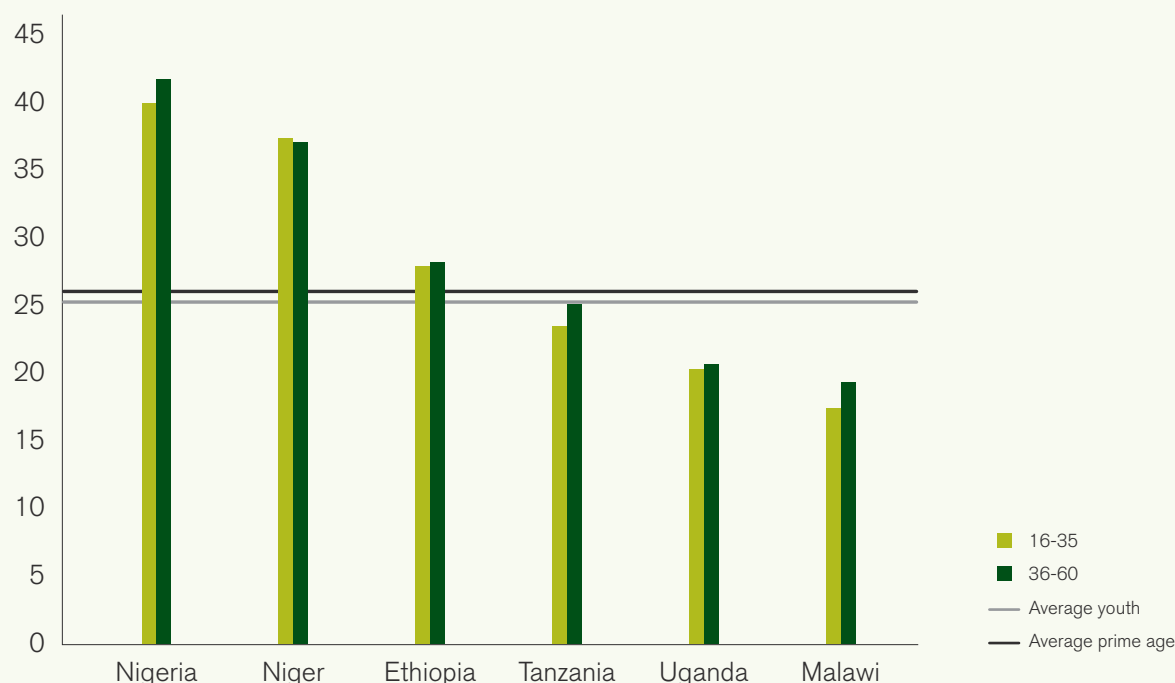
In terms of how many hours youth spend on agricultural activities per week, the data available for the Living Standard Measurement Survey (LSMS) from six countries [Maïga et al., (2015)] provides statistics for both unconditional and conditional average hours worked per week in agriculture.

The unconditional average hours worked in agriculture measure the average hours worked in agriculture in the sample whether or not individuals are working in the agricultural sector. The six-country unconditional average hours worked per week in agriculture regardless of age is 15.3 hours as shown in Figure 2. The findings indicate that Ethiopia, Malawi, Nigeria, and Uganda have countrywide average hours worked per week in agriculture below the six-country average, ranging from 10.4 to 14.7 hours.

Tanzania with 16.6 hours and Niger with 23.6 hours are above average.

When the sample is broken down into five-year age groups, the results show a mostly increasing pattern as age increases towards retirement age (60). From age group 16-20 to age group 21-25, a decrease in hours worked for all countries except Malawi is observed. One can argue that individuals between 16 and 20 years of age who are not in school do not have much experience in any kind of work or sufficient funds to start any income-generating activity. Consequently they may not have much choice for livelihood except agriculture explaining higher number of hours worked in agriculture. On the other hand, older youth are likely to have more experience and maybe some savings which would allow

Figure 1.7 Conditional average hours worked per week in agriculture by the youth and prime age groups



Source: Maïga et al., 2015

them to reduce agricultural hours worked and diversify into other activities or move to non-agricultural jobs altogether.

Comparing average hours worked per week in agriculture by the age group 36-60 (prime-age) to the age group 16-35 (youth) they find differences ranging from -0.2 hours in Niger to 6.6 hours in Nigeria. All differences are statistically significant at the 5% level except in Niger. These results suggest that the youth in all countries except in Niger are less engaged in agriculture than the prime-age group. In Nigeria, the prime age group works 62.8% more hours per week than the youth followed by Malawi (23.4%), Tanzania (17.8%), Uganda (16.0%), and Ethiopia (9.9%). The Nigerian youth seems to work 0.7% more hours per week in agriculture than the prime-age group.

The highest average hours worked per week in agriculture by the youth, conditional on working in agriculture is found in Nigeria with 39.2 hours, well above the six-country average for the 16-35 years old (27.6 hours, Figure 3). Niger follows with an average of 37.2 hours then Ethiopia with 27.8 hours. Tanzania, Uganda and Malawi are below the six-country average with 24.3 hours, 20.0 hours and 17.4 hours, respectively. The differences in hours worked per week in agriculture between the prime age and the youth are smaller than in the unconditional case, ranging from -0.4 hours in Niger to 2.1 hours in Nigeria. The differences are statistically significant for Malawi and Nigeria only suggesting that in these countries, conditional on working in agriculture, the youth are working fewer hours per week in agriculture than the prime age group. The six-country conditional average hours worked per week in agriculture regardless of age is 24.1 hours.

Factors Contributing to Youth Leaving Agriculture

Maïga et al. (2015) used the Oaxaca-Blinder decomposition to try identify the factors that account for the differences in hours worked per week in agriculture between the youth and the prime-age group. This decomposition technique decomposes differentials—say wage—into two components: a portion that arises because two comparison groups, on

average, have different qualifications or credentials (e.g., years of schooling and experience in the labor market) when both groups receive the same treatment (explained component), and a portion that arises because one group is more favorably treated than the other given the same individual characteristics (unexplained component).

The role of education

The coefficient of education is positive and strongly significant in all countries except Niger where the coefficient is negative and insignificant. These results indicate that edu-

cation is a major factor in explaining differences in hours worked per week in agriculture between the youth and the older age group in all countries except Niger.

The role of gender

Gender is positive and strongly significant in the regressions for Ethiopia, Malawi and Nigeria, indicating that being male contributes to explaining the differences in hours worked per week in agriculture between the youth and the older

age group. For Tanzania, the gender variable (male=1) has a negative and strongly significant coefficient suggesting that being male contributes to explaining differences in hours worked between the two groups.

The role of household wealth

Household wealth contributes to explaining differences in hours worked per week in agriculture between the youth and the older age group in Malawi, Niger, Tanzania and

Uganda. The coefficient for the wealth index is negative and strongly significant in Malawi and Niger. The opposite is true for Tanzania and Uganda.

The role of land tenure

Maïga et al. (2015) results suggest land ownership is important in explain difference in hours worked between the two age groups in only one country, Malawi. The

coefficient of the land ownership variable is insignificant in all the other countries.

The role of residence

Distance to the nearest city with 20,000 inhabitants or more is a factor explaining differences in hours worked in agriculture by the two groups in Malawi only and the coefficient is weakly significant. Similarly, the type of agro-ecological zone where the household resides

is important in explaining differences in hours worked in agriculture between the youth and the prime age groups in one country only, namely Nigeria. The coefficient for the agro-ecological zone variable is positive and strongly significant.

Trends in Youth Participation in Agriculture

In this section, the trends in hours worked per week in agriculture over time [Maiga et al. (2015)] are presented. There are two years of data for Nigeria and Tanzania and four years of data for Uganda. In Nigeria, between 2010-11 and 2012-13, the average hours worked per week in agriculture increased for both age groups (Table 1.1). The countrywide average hours worked per week in agriculture increased from 10.0 hours to 13.7 hours. The youth increased their average hours worked from 7.9 to 10.5 hours per week while the prime-age group increased theirs from 13.0 to 17.1 hours per week. The gap between prime-age and youth widened (5.2 to

6.6 hours) between 2010-11 and 2012-13 because the prime-age group individuals increased their hours worked more than the youth. These results suggest that, though the youth are working fewer hours than the prime-age group, they are not leaving agriculture by reducing the hours worked per week. Rather, they are leaving agriculture by exiting the sector altogether. Another explanation would be change in survey design that lead to all age groups reporting more hours worked in agriculture. As more waves of the panel become available, one will be able to check whether the increasing trend in hours worked per week holds.

Table 1.3 Trends in unconditional hours worked per week in agriculture

	NIGERIA		TANZANIA		UGANDA			
AGE GROUP	2010-11	2012-13	2008-09	2010-11	2005-06	2009-10	2010-11	2011-12
Countrywide	10.3	13.7	16.4	16.6	14.0	12.3	12.6	12.6
16-35	7.9	10.5	15.9	15.5	13.0	11.4	11.3	11.8
36-60	13.0	17.1	17.2	18.3	15.6	13.6	14.1	13.7
Difference	5.2	6.6	1.3	2.8	2.7	2.2	2.8	1.9
P-value	0.000	0.000	0.329	0.001	0.000	0.001	0.000	0.004
Diff in %	65.8	62.8	8.4	17.8	20.5	19.3	25.2	16.0

Table 1.4 Trends in conditional hours worked per week in agriculture

	NIGERIA		TANZANIA		UGANDA			
AGE GROUP	2010-11	2012-13	2008-09	2010-11	2005-06	2009-10	2010-11	2011-12
Countrywide	38.5	40.5	29.8	24.9	23.3	20.3	21.5	20.4
16-35	37.6	39.2	29.5	24.3	23.2	20.1	20.6	20.0
36-60	39.1	41.4	30.1	25.6	23.5	20.5	22.4	20.7
Difference	1.5	2.1	0.6	1.3	0.3	0.5	1.8	0.7
P-value	0.032	0.000	0.723	0.238	0.666	0.495	0.009	0.418
Diff in %	4.0	5.4	1.9	5.3	1.3	2.3	8.5	3.4

Turning to Tanzania, between 2008-09 and 2010-11 the youth slightly decreased their hours worked in agriculture from 15.9 to 15.5 hours, suggesting less engagement in agriculture over time for this group. The youth and the prime-age groups increased their hours worked in agriculture from 17.2 to 18.3 hours. These results should be taken with caution as the hours worked in agriculture are a lower bound because of non-collection of secondary job hours in 2008-09. The countrywide average hours worked per week in agriculture slightly increased from 16.4 hours to 16.6 hours between 2008-09 and 2010-11. Similar to Nigeria, the time lag between the two surveys is 2 years; therefore more survey rounds are needed to confirm the trend in hours worked in agriculture by the different age groups.

In Uganda, the average hours worked per week in agriculture by the youth decreased from 13.0 hours in 2005-06 to 11.4 hours in 2009-10, to 11.3 hours in 2010-11 then increased to 11.8 hours in 2011-12. The prime age group decreased their hours from 15.6 to 13.6 hours between 2005-06 and 2009-10 and from 14.1 to 13.7 hours between 2010-11 and 2011-12. The countrywide hours worked per week decreased from 14.0 hours in 2005-06 to 12.3 hours in 2009-10 and remained constant at 12.6 hours in 2010-11 and 2011-12. The difference in average hours worked per week in agriculture between prime-age and youth was 2.7, 2.2, 2.8, and 1.9 for 2005-06, 2009-10, 2010-11, and 2011-12, respectively. All differences are statistically significant

at the 5% level or higher. Comparing the oldest and newest survey waves, they concluded that both the youth and prime-age groups decreased their hours worked in agriculture and the gap has narrowed. With hours worked per week in agriculture for the 2005-06 survey being a lower bound, the magnitude of the actual decrease is likely to be larger. Overall, between 2005-06 and 2011-12, there is a declining trend in hour worked per week in agriculture in Uganda suggesting less engagement in agriculture over time by both the youth and the prime-age groups.

Table 1.2 presents the trends in conditional average hours worked in agriculture [Maiga et. al. (2015)]. Between 2010-11 and 2012-13, the average hours worked per week in agriculture increased for both age groups in Nigeria, suggesting that the two groups are not leaving agriculture by reducing their hours worked in agriculture over time. Unlike Nigeria, the average hours worked per week in agriculture decreased between 2008-09 and 2010-11 for both age groups in Tanzania. The countrywide average hours worked in agriculture decreased from 29.5 to 24.3 hours. The average hours worked per week in agriculture decreased in Uganda when considering the 2005-06 and the 2011-12 surveys for both age groups. Therefore, the declining trend in Uganda suggests less engagement in agriculture in that country by reducing hours worked. However for Tanzania and Nigeria, the time lag between the two waves is short and one would need more waves to confirm the declining/increasing trend.

Correlates of youth participation in agriculture

Maiga et. al (2015) presents the regression of hours worked per week in agriculture on individual's demographic characteristics, household characteristics and environmental variables for all six countries. Uganda 2005-06, 2010-11 and 2011-12, Tanzania 2008-09, and Nigeria 2012-13 are not included in the analysis as their household geographic or land variables information needed to run the regressions are not readily available. Region or district fixed effects are included but not shown. They control for potential seasonality in the reporting of hours worked in agriculture in the Ethiopia, Malawi, Tanzania and Uganda surveys. Indeed, depending on when the households were interviewed, the number of reported hours worked in agriculture may be high (e.g. land preparation period) or low (e.g. after harvest). Interview date dummy variables are included

in the regressions for the aforementioned countries to control for seasonality.

Compared to people between 36 and 60 years of age, individuals aged 16 to 20 years work fewer hours per week in agriculture in all six countries. The coefficients for the 16-20 age group are strongly significant (5% level or higher) for Malawi, Nigeria, and Tanzania. The coefficient for Niger is weakly significant (10% level) and insignificant for Ethiopia and Uganda. The results are more mixed for the youth aged 21 to 35. The coefficients for the 21-35 age group are negative in Malawi, Ethiopia, Uganda and Nigeria and positive in the other countries. There is a strong negative and significant correlation between this age group and hours worked in agriculture in Nigeria suggesting that the youth

works fewer hours per week in agriculture than the prime age group. The coefficients for Ethiopia, Malawi, Niger and Tanzania are not significant.

Being a male individual is positively related to the hours worked in agriculture across all surveys except in Uganda suggesting that men are more likely to work longer hours in agriculture than women. Gender interacts positively with age (youth of 16 to 20) to significantly affect hours worked in agriculture in Tanzania and Niger. The interaction between gender and age group 16-20 is also positive for Uganda but statistically insignificant. In Ethiopia, Malawi, and Nigeria, the interaction between gender and age group 16-20 is negative and significant. Based on the sign and statistical significance of the coefficients, they concluded that age and gender are complements in Niger and Tanzania and substitutes in Ethiopia, Malawi, and Nigeria.

For the age group 21-35 the interaction term between age and gender is positive and weakly significant for Uganda. This suggests that age and gender are complements in Uganda.

The education of the individual significantly and negatively affect hours worked per week in agriculture across the six countries suggesting that more educated people work fewer hours in agriculture. Interaction terms between 16-20 youth dummy variable and education suggest a significant positive joint impact in Malawi and Niger and a significant negative one in Uganda. For the 21-35 age group, the interaction terms are negative and significant in Tanzania but positive and significant in Nigeria. Based on the sign and statistical significance of the coefficients, they concluded that age and education are complements in Malawi and Nigeria, and substitutes in Tanzania and Uganda.

Farm size per capita is positively related to hours worked per week in agriculture in all countries but the coefficient is insignificant in Malawi. This finding suggests-as one would expect- that access to land is positively correlated with engagement in agricultural activities. The wealthier the household the fewer hours individuals work in agriculture. The wealth index coefficient is strongly significant in all countries except Ethiopia where the coefficient fails to reach statistical significance.

Rural residence is also positively and significantly related to hours worked per week in agriculture for most countries suggesting that residence in

rural area increases the likelihood of working in agriculture.

Across all surveys, land and livestock ownership have the expected sign as access to land and having livestock is positively related to the number of hours worked in agriculture. The age of the household head negatively correlates with the hours worked per week in agriculture in all countries except Malawi but all coefficients are insignificant.

The gender of the household head is positively and significantly related to hours worked per week in agriculture in Tanzania which is what one would expect given that men have greater access to land than women in most African countries. A negative and weakly significant coefficient is found in the case of Ethiopia, suggesting that male household heads correlate negatively with hours worked per week in agriculture. This result seems a bit counterintuitive, but in Ethiopia, the state owns all land and has a law that guarantees access for free (Bezu and Holden, 2014). Therefore, theoretically, women and men have equal access to land which would explain the sign of the coefficient. The coefficients for gender of the household head are insignificant for the other countries.

The education of the household head negatively and significantly affect hours worked in agriculture in Nigeria, Malawi, and Tanzania. These results suggest that more educated household head have individuals from their household working less in agriculture. Education is expected to lead to higher incomes and thus such household head can support household's members to look for more other options for livelihood. Individuals from household with more educated heads can afford to diversify into other activities, thus reducing the hours worked in agriculture. The education of the household head positively and significantly affect hours worked in agriculture in Ethiopia which is counterintuitive. A possible explanation is that Ethiopia has a high share of rural population and policies to freely access land which explain that even educated people may engage in agriculture.

Overall, their results suggest less engagement in agriculture for the youth in Nigeria, Tanzania and Uganda. This is consistent with McMillan and Hartgen's results who found a negative relationship between youth (15-24) and changes in the agricultural employment share. The findings for Niger suggest that the youth is not engaging less in agriculture in that country.

Conclusion

The evidence reviewed in this chapter suggests that the youth are leaving agriculture in African countries. Comparing the youth 16-35 to the prime-age group 36-60 (Maïga et al. 2015) found that Nigerian, Tanzanian and Malawian youth are leaving agriculture. They also found that the Nigerien youth are not leaving agriculture. Their results were inconclusive for Ethiopia and Uganda. Bezu and Holden (2014) found the majority of Ethiopian youth are not planning to engage in agriculture as their main livelihood with only 9% planning to work in the sector. The findings by Ahaibwe et. al. (2013) show that youth engagement in agriculture in Uganda reduced from 73.2% to 64.2% between 2005-06 and 2009-10 for the cohort aged 18-30 in 2005-06.

Determinants of youth involvement in agriculture include access to land (Bezu and Holden, 2014; Maïga et. al., 2015), wealth level/agricultural income and education (Maïga et. al., 2015; Ahaibwe et. al. 2013), rural residence, and livestock ownership (Maïga et. al., 2015). Is trying to attract and/or retain the youth in agriculture the right policy avenue? The answer to this question depends on the peculiarity of each country but unless the profitability of agriculture can be demonstrated and its attractiveness increased the African youth are likely to keep exiting agriculture in the coming years.

Now and the Future

Agriculture has played a vital role in African economic growth and social improvement. It has absorbed the highest percentage of the working population (about 65%). It contributes about 30% of the GDP in most countries. It is vital to economic growth, generating incomes, and creating jobs. For now and the near future, it is and will remain the employment growth sector for most countries. The opportunities for youth in the agriculture sector and along the production and marketing value chain need to be explored to create wealth and grow the economy.

In discussing the opportunities and constraints of agriculture markets, Bruno Losch presented three major types of markets that the characteristics of Africa, agriculture is suited for and Africa farmers can maneuver. They are:

1. A high value added products market, such as horticulture products (including fruits, vegetables and flowers), directly linked with new global distribution systems;
2. A tropical commodity market (including coffee, cocoa, rubber and vegetable oil); and
3. A food commodity market destined primarily for local and regional consumption²⁶

Losch stated: "Given that the main problem facing African economies is the creation of jobs and income-

generating activities, the priority for government policy makers is to improve the situation for the greatest number and to help family farms by supporting the development of food products and markets. These markets represent about 70 percent of the total value of African farm products (exports and locally consumed²⁷ products combined), that is about US\$50 billion a year."

The World Bank's publication "Youth Employment in Sub-Saharan Africa" presents four basic pathways to employment in agriculture that vary in their requirements for land, capital and skills. These pathways include:

1. Full-time on an existing family holding, which requires no additional land, but necessitates medium capital and medium skills;
2. Full-time on a new holding, which requires high land, high capital and high skills;
3. Part-time, combined with household enterprises such as processing, trading and sales of services, which requires low land and medium capital, but high skills; and
4. Wage work off the family farm, which entails no land requirement and no capital, but requires medium or high skills.²⁸

²⁶ Challenges for Africa Agriculture, p 49

²⁷ Ibid p. 50

²⁸ Filmer, D., L. Fox, et al. "Youth Employment in Sub-Saharan Africa". World Bank. 2014

Youth in agriculture for now and the future requires concentrated effort by both the private and public sector to develop policies and intervention strategies that will promote access to land, access to capital, and improvement of skills using both formal and informal educational, training

and innovative extension services to make agriculture the sector for employment growth. Supporting youth in agriculture to increase agriculture productivity and improve market access is vital to making progress in creating jobs, reducing poverty, and growing the economy.

Objectives and Overview of the Chapters in this Report

Policymakers and development practitioners recognize farmers as the driving force of economic growth and poverty reduction in Africa. Growth in the agriculture sector is 2.5 times more effective in reducing poverty than growth in other sectors. At this point, we envision the Youth in Agriculture theme as encompassing such issues as: participation of youth in raising agricultural productivity; agriculture entrepreneurship along the value chain and Public-Private Partnership programs for youth; innovative and inclusive finance for youth; access and use of ICT by youth; capacity building and youth empowerment; and conducive policy environment that promotes youth participation and engagement in Agriculture.

The main objectives of this report are to; 1) enable better targeting of youth in agriculture with appropriate information and technologies; 2) highlight areas where investments in African agriculture can have the potential to make a difference among the youth; 3) make agriculture more attractive to youth as a source of employment that generates income; 4) devise ways of retaining the youth who are already in agriculture; and 5) in-depth exploration of the crucial role of youth in transforming African agriculture in the years ahead.

Therefore, in the following chapters we examine major ways in which youth can be engaged for them to bring about meaningful and transformative changes in SSA agriculture.

Chapter 1 of this report has described the current status of youth in African agriculture, and has explored how the sector is contributing to the economic and social wellbeing of most SSA countries. It has laid the foundation for discussing various facets of youth in agriculture and provided evidence about youth participation and engagement in agriculture using recent data from different SSA countries.

Chapter 2 of the report shows that Africa has a large and growing population of young people and is facing a crisis of youth unemployment. This crisis is linked to the drudgery associated with traditional farming, skepticism regarding the economic viability of agriculture, and limited career opportunities in rural areas. Agriculture

has ample potential for inclusive economic growth and youth employment. This chapter explores efforts being made to improve agricultural productivity in sub-Saharan Africa, and to harness the huge numbers, vitality and innovative spirit of youth in order to transform African agriculture. However, African youth face particular constraints. In general, they do not have ready access to land, credit, training and new technologies – and these constraints affect young women more than young men. Addressing these challenges is essential to integrating youth into agriculture for improved productivity and food security.

Chapter 3 highlights how agricultural entrepreneurship can be leveraged to achieve the three utmost goals underlying Africa's economic growth: employment creation for a growing youth population; food security for a growing and urbanizing population; and sustained and inclusive economic expansion where the agrifood sector contributes significantly to the growth of related sectors, such as health, manufacturing, infrastructure, foreign income and ICTs. The authors assert that entrepreneurship increases social inclusivity by reducing income inequalities across gender, age, and between rural and urban areas. It is argued that, to succeed in agribusiness, youth require context-specific and gender-smart agribusiness development strategies; skills training that increases the value of products and builds the capacity to adapt to change; networks linking entrepreneurs to markets; financing; improved technologies, including better storage, distribution and logistics systems; and enabling policy environments that provide tax incentives, targeted subsidies, and improved infrastructure. Sustainable agribusinesses must be promoted, as they pave the way for economic growth, structural transformation, environmental protection, and improved technical skills, which in turn catalyze economic activities and connect major economic sectors, thereby resulting in inclusive growth and driving sustainability on the continent. The optimism for involving youth in sustainable agribusinesses has encouraged development partners to support production-based agribusinesses that are resulting in increased agricultural productivity. However, given the high risks in production agriculture, it is important to also start directing investments towards the entire agriculture

value chain, including processing, transport, packaging, information, research, trade, and post-harvest services.

Chapter 4 describes practical and evidence-based financial inclusion models to strengthen African youth participation in agricultural value chains. African governments and investors should note that financing mechanisms that are beneficial to young agricultural entrepreneurs are also beneficial to other smallholder and commercial farmers. Thus, to a large extent, developing sound mechanisms that improve access to finance for a country's young agricultural entrepreneurs is a matter of improving the overall policy and regulatory environment for agricultural financing. Improving the financial literacy of youth, as well as financial institutions' capability to assess agricultural sector opportunities, are critical to strengthening the links between young entrepreneurs in agriculture and formal financial institutions. Furthermore, more precise metrics are needed to drive better policy design by governments on youth financial inclusion. African governments should therefore produce and share reliable statistics on the employment status of youth in agriculture and their financial inclusion.

A few financial inclusion models for youth in agriculture have been put forward in this report. Contract farming, leasing, warehouse receipt financing, and factoring are all suitable financing models for young 'agripreneurs' because they do not require fixed collateral. Governments and international development organizations should encourage such forms of finance through blending and guarantee schemes. Furthermore, crowdfunding platforms offer opportunities to young African entrepreneurs, including in agriculture; governments should remove all barriers that prevent them from operating properly, including for equity and loan financing. Finally a scarcity of venture capital firms (and the mentoring services that they often provide) hampers young African entrepreneurs, in agriculture and other economic sectors, in developing and scaling up their businesses. Development organizations should continue to scale up their support for challenge funds and impact investing that can fill this critical gap in the market.

Chapter 5 notes that agriculture as a profession in Africa is often seen by youth as an outdated, laborious and unprofitable pursuit, notably because it lacks adequate support. But the fact is that agriculture, more than any other economic sector, has the capacity to lift many young Africans out of poverty and foster more inclusive growth. Fortunately, the proliferation of information and communications technologies (ICTs) is having huge positive impacts on agriculture, and is helping to reverse negative perceptions among the youth. This chapter offers analyses and illustrations of the various forms of current ICT uses by youth in agriculture. It identifies constraints and opportunities for accelerating the benefits of ICT and agriculture to youth. The chapter provides recommendations to decision makers and

other relevant stakeholders interested in supporting youth engagement in agriculture, and in so doing reducing youth unemployment, accelerating agricultural transformation, and expediting the achievement of food security for sustainable development in Africa.

Chapter 6 examines the current status of capacity building and skills development, with a specific focus on youth empowerment and job creation in the agriculture sector. The key thrust of the chapter is on skills development for youth entrepreneurship as a solution to unemployment and food insecurity. It focuses mainly on capacity building at the technical and vocational education and training level, where emphasis is placed on practical skills development and entrepreneurship. The authors also elaborate on formal training in the higher levels of agricultural education. The chapter recognizes that economic opportunities for youth are based on improving the capacity of young men and women to obtain jobs or grow their businesses, access finance, and to expand the opportunities available to them.

Continental frameworks and approaches for agricultural capacity building are discussed, especially the Malabo Declaration and its implementation strategy. Opportunities that arise from youth-focused capacity building are identified, and as are the important roles that trained youth in agriculture can play in job creation and economic development. The authors elaborate on the different forms of training, with emphasis given to individual training needs, including technical skills, entrepreneurship, life skills, social norms and attitudes. Because of limitations in the formal educational and training systems (in terms of access and quality), the chapter highlights opportunities for informal and non-formal training to reach more young people, especially in the rural areas of Africa.

Last, Chapter 7 reviews existing continental and national youth policies and agricultural policies aimed at attracting youth to the agriculture sector. The objective is to inform dialogue on youth development and engagement in agriculture at all levels, from policies, to strategies, to program implementation. It is clear that at a continental level (through the African Youth Charter) African member states are committed to youth development. There is also evidence at the country-level of policies designed to facilitate the engagement of youth in agriculture. However, the challenge is in financing and implementing these policies. We also explore institutional mechanisms that are in place to support youth participation in agricultural policy processes, using examples and best practices from Ethiopia, Ghana, Kenya, Nigeria, South Africa and Zambia.

This publication is a good faith attempt to present the opportunities and challenges for youth in African agriculture. Youth in Africa are as heterogeneous and diverse as the agricultural environments in which they

operate. While efforts have been made to address some of the key issues and challenges of youth in agriculture, and to provide and use relevant evidence and data from currently available and up-to-date references to support the assumptions and conclusions made, this Report is not an exhaustive analysis of all challenges and potential solutions. There is a limit to what a synthesis report of this nature can accommodate.

Youth in agriculture in SSA is vital to continent's social and economic transformation, and more needs to be done in the areas of policy formulation and implementation, development program intervention strategies, innovative and creative financial model development, ICT, and public and private sector investments in order to fully capitalize on the energy, dynamism and resourcefulness of the younger generations.

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Chapter 2

Youth and

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in Sub-Saharan

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KEY MESSAGES

ONE

If Africa is to sustainably increase the productivity of its agriculture sector, it must find appropriate and effective ways to harness the continent's unprecedented 'youth dividend'.

TWO

Agriculture offers youth the opportunity for improved livelihoods and employment, but for agriculture to be attractive to them, it has to be profitable, competitive and dynamic. They must also be included in decision-making processes, especially with respect to resolving policy constraints to youth involvement in agriculture.

THREE

Land policy reforms that enable young people to access land are essential. Land laws must provide for equitable access to land by young men and women to facilitate their entry and participation in agriculture as an economic activity from which they can generate incomes and support their livelihoods.

FOUR

Agricultural education and vocational training opportunities for young people are crucial for the development of skills needed for enhancing productivity and addressing some of the challenges youth face in agriculture.

FIVE

To make agriculture attractive to the young, significant investments must be made in education at all levels, agricultural innovation must be supported, market and rural infrastructure must be improved, and the business environment must be strengthened in ways that will raise incomes and expand agricultural value chains.

SIX

African governments will need to re-engage in the formulation and systematic implementation of sound rural development policies and programs that maximize opportunities for young people, strengthen their capacities and facilitate access to productive resources needed to drive broad-based growth in the agriculture sector and rural economy.

Background

Agriculture (both crop and livestock) is the predominant economic sector in most sub-Saharan African (SSA) countries, contributing over one-third of the region's gross national product (GNP), and employing more than two-thirds of the labor force (including about 70% of the population living in rural areas).¹ Increasing agricultural productivity in Africa calls for broad policy and strategic approaches that will address each of the factors affecting productivity: input production and delivery; technology generation; processing; storage; product transportation, and marketing and trade. These policies and strategies must be inclusive of the continent's large youth population.

Young people make up the largest proportion of the population of Africa. Those aged between 15 and 25 represent more than 60% of the continent's total population. By 2025, the number of young people (aged 10 to 24) is expected to increase to 436 million and is projected to further increase to 605 million by 2050.² Youth unemployment is a major SSA issue. Over 40% of the total unemployed in Africa are youth and 70% of them live in rural areas.³ This tilted demographic distribution of young people, referred to as the 'youth bulge', presents both challenges and opportunities. Unemployed youth are prone to criminal and anti-social activities, and some liken them to a ticking 'time-bomb' that must be immediately defused.⁴

On the other hand, opportunities exist for harnessing the energy, vitality and innovation of young women and men in the agricultural sector (among others).⁵ Agriculture offers a multitude of opportunities: in supplying inputs; in exploiting innovations in farming technologies, especially in information and communication technology (ICT); in commodity markets; and in processing, transport, marketing and retailing along the agricultural value chain. Agriculture thus provides employment opportunities that can lift youth out of poverty, and offers an alternative

livelihood strategy to migration to urban areas (a trend that usually has negative effects on rural agriculture).

When the willingness of youth to contribute is matched with appropriate opportunities, they can have a transformative impact on the growth of agricultural productivity. This impact is often referred to as the 'youth dividend'. African leaders know that the youth dividend will not be deposited automatically into national accounts; leaders will have to take proactive steps to collect it, and most SSA countries are ready to do so. There is, after all, ample evidence of what can happen if the twin needs of achieving agricultural growth and providing youth employment are not met. Efforts to enhance growth and create employment for young people are complementary, and must be so understood.⁶ Agriculture offers good opportunities that will benefit young people themselves, as well as societies at large across the continent. With clarity of vision and political commitment from Africa's leaders, the 'youth dividend' can be harnessed to the sector and widely shared.

However, youth face particular constraints in gaining access to land, credit, training and new technologies. They also face limited access across the entire agricultural value chain – ranging from research, innovations, product development, and market participation.⁷ Youth tend to perceive farming as an occupation for the aged, illiterate, and for people living in rural areas. Youth do not want to practice agriculture the way their fathers and mothers did, but rather in a modern way, with an appropriate image that speaks to their aspirations as natives of the digital age – where the media have a great influence on their perceptions and aspirations.⁸ Some of the reasons for a continued lack of interest in the sector by youth include: Skepticism regarding the economic viability of agriculture;

- A lack of successful agriculturalists to look up to as role models, while at the same time, a large number of role models in white-collar professions;

¹ Agricultural productivity refers to the output produced by a given level of inputs in the sector or the ratio of value of total farm inputs to the value of inputs used in farm production.

² UNFPA 2012 Status Report. Adolescent and Young people in Sub-Saharan Africa – Opportunities and Challenges

³ Ibid

⁴ Akinnifesi FK. 'Can South-South Cooperation offer Sustainable Agricultural –led Solutions to Youth Unemployment in Africa' in *Nature and Fauna* Vol. 28, Issue 1

⁵ Ibid

⁶ Karen Brooks, Sergiy Zorya, and Amy Gautam Employment in Agriculture: Jobs for Africa's Youth <http://www.ifpri.org/gfpr/2012/employment-agriculture>

⁷ Iyanda Babatunde, 'International policy frameworks: The need to engage Africa's youth in agriculture and natural resources management and its policy development processes' in *Nature & Fauna*, Vol. 28, Issue 1 *African Youth in Agriculture, Natural Resources and Rural Development*. FAO Regional Office for Africa

⁸ Ibid

- The high risk and uncertainties associated with African agricultural practices; and
- The drudgery that comes with traditional farming methods makes it unattractive to youth.

These perceptions inhibit young people's ability to see the potential that the agricultural sector presents in terms of employment opportunities.

It is recognized, however, that youth are not a homogeneous group and, beyond being young, are defined by differing characteristics that shape their circumstances. Such differences include gender, specific ages, geographic locations, marital status, level of education, legal status, and different stages in the life cycle. The goals of youth will vary according to these and other characteristics, and solutions to challenges facing them must be tailored to suit their objectives. Gender differentiation is key, as the term 'youth' refers to both young women and young men with socially differentiated roles and needs. Young women are positioned differently than young men with respect to obtaining livelihoods from agriculture. They often have less access to the natural resources (land and water), credit, new technologies and information needed to make a living.⁹

In order for the youth to increase their participation in and benefit from agriculture (through enhanced productivity),

their perception towards the sector needs to change. On the other hand, in order to attract young people, agriculture will need to be more dynamic and appealing than it is now, so young people will view the sector more positively. Farms that offer attractive opportunities will have to be quite different from those with which most young people in Africa are familiar.¹⁰ Farming must shift rapidly from limited productivity and low social status to high productivity with recognized business opportunities for improving livelihoods. Actively engaging African youth in agriculture as key players is crucial to designing effective public investments in the sector, and to making continued progress with policy reforms that assure inclusion of young people in Africa's agricultural renaissance.¹¹

Africa's agricultural transformation from subsistence farming to more productive commercial agribusiness can be achieved in various ways. One of these is to catalyze and establish an entrepreneurial environment for young women and men in rural areas, enabling them to contribute to national growth agendas and food security¹² With the right investments, SSA has unprecedented opportunities to capitalize on its young population by accelerating transformative changes in agriculture that simultaneously raise productivity, reduce real food prices, boost rural incomes, and create jobs. Africa needs political commitment and leadership to create appropriate enabling environments and the vision necessary to support young agricultural entrepreneurs.

The General Agricultural Policy Environment

The adoption of the Comprehensive African Agricultural Development Programme (CAADP) by the AU Heads of State and Governments in Maputo (2003) has provided a solid foundation for pursuing an agricultural and rural development agenda that can end hunger and reduce poverty through inclusive growth. The Maputo Declaration contained several important decisions regarding agriculture, but prominent among them was the "commitment to the allocation of at least 10% of national budgetary resources to agriculture and rural development policy implementation within five years". Since then, public expenditures on agriculture have risen by about 7% across Africa.

The policy environment for youth in Africa is set by the Africa Youth Charter (AYC), which was endorsed by AU

Members in July 2006, in Banjul, Gambia. The Charter aims to consolidate efforts to empower young people, which it defines as those between the ages of 15 and 35, through meaningful youth participation and equal partnership in driving Africa's development agenda. The AU's commitment to address youth issues in general was deepened by the declaration of the 'Decade of Youth Development in Africa (2009-2019)' by the Summit in January 2009 in Addis Ababa. This declaration provides an opportunity to advance the agenda of youth development in all AU member states across the continent, invest in youth development programs, and facilitate the implementation of the AYC. However, as of April 2014, only 23 of 54 African countries (43%) had formally adopted national youth policies; 16 countries (26%) were reviewing or developing such policies, and

⁹ Farnworth C.R and Sillah B.B. 'Involving Young Women in agriculture in sub-Saharan Africa: Some Lessons Learned' in *Nature and Fauna* Vol. 28, Issue 1. 2013, African Youth in Agriculture, Natural Resources and Rural Development. FAO Regional Office in Africa

¹⁰ Karen B. et al opp.cit

¹¹ <http://www.ifpri.org/gfpr/2012/employment-agriculture>, 4/4/2015 at 1026

¹² Small and Growing Enterprises in African Agriculture. Montpellier Panel, June 2014. Agriculture for Impact, Growing Opportunities for Africa Development

the remainder had yet to take any positive steps in that direction.¹³ The formulation of national youth policies provides opportunities for addressing constraints facing youth in the agricultural sector, and this is now happening in some countries (see Table 2.1).

The June 2014 Malabo Declaration recognizes youth as key players in 'Halving Poverty by 2025'. In its commitment to 'Inclusive Agricultural Growth and Transformation' the Declaration pledges to create and enhance the necessary

appropriate policy, institutional and budgetary support and conditions "to create job opportunities for at least 30% of the youth in agricultural value chains; and support preferential entry and participation for women and youth in gainful and attractive agribusiness opportunities." In its Program of Work to achieve Africa's 2015-2025 Vision and Goals, CAADP recognizes youth as a key asset and resource in achieving the transformation of the agricultural sector. The CAADP focus is therefore on youth education, employment and entrepreneurship.

Table 2.1 Focus on agriculture in selected national youth policies in SSA

COUNTRY AND YEAR OF NYP FORMULATION	GOAL/POLICY STATEMENTS	SELECTED AGRICULTURE RELATED INTERVENTIONS/ SPECIFIC OBJECTIVES
Nigeria - 2009	The national youth policy shall promote the involvement and full participation of young men and women in the agricultural sector of the country.	Government at all levels should promote the involvement of young men and women in the agricultural sector (fisheries, livestock, forestry, processing, and marketing of agricultural produce, etc.) Efforts should be made by government at all levels and by other stakeholders to provide necessary agricultural inputs, such as extension services, land, and credit, in order to facilitate youth involvement in agriculture. Effort should be made to encourage the teaching of the science of agriculture at all levels of the educational system in the country. Efforts should be made to disseminate knowledge on agricultural techniques and processes. Efforts should be made by government at all levels to finance and procure modern agricultural implements for the use of young farmers.
Ghana	Promote youth participation in agriculture	Promotion of the participation of youth in modern agriculture as a viable career opportunity for the youth and as an economic and business option. The provision of resources for the participation of the youth in modern agriculture.
Zimbabwe - 2013	Young people contribute positively to national development through the creation of an enabling environment that allows for youth to reach their full potential.	Ensure that Government approves a 25% quota of all economic indigenization and empowerment facilities in agriculture, mining, commercial, tourism, and industrial economic activity is reserved and available for youth, paying particular attention to the empowerment of young women and young people with disabilities.
Malawi - 2013	Improve socio-economic status of youths through increased incomes.	Modernization of agriculture through the incorporation of ICT and other modern technologies and tools to make agriculture attractive to youth is deliberately encouraged.

¹³ Youth Policy Press, 2014; The state of youth policy in 2014

Table 2.2 Land ownership by age group

AGE GROUP	MALAWI		TANZANIA		UGANDA		NIGERIA	
	PROPORTION OF LAND OWNERSHIP OF AT LEAST ONE PLOT (%)	AVERAGE LAND SIZE OWNED (HA)	PROPORTION OF LAND OWNERSHIP OF AT LEAST ONE PLOT (%)	AVERAGE LAND SIZE OWNED (HA)	PROPORTION OF LAND OWNERSHIP OF AT LEAST ONE PLOT (%)	AVERAGE LAND SIZE OWNED (HA)	PROPORTION OF LAND OWNERSHIP OF AT LEAST ONE PLOT (%)	AVERAGE LAND SIZE OWNED (HA)
15-19	4.31	0.37	1.10	0.56	5.02	0.54	1.63	0.53
20-24	25.63	0.42	10.88	0.81	13.19	0.65	1.74	0.60
25-29	38.00	0.48	26.12	1.04	30.26	0.63	3.13	0.68
30-34	39.20	0.54	38.05	1.10	43.37	0.72	3.10	0.41
35-39	43.56	0.60	46.80	1.16	50.76	0.83	3.68	0.51
40-44	45.28	0.65	56.49	1.35	60.18	0.96	4.52	0.60
45-49	49.23	0.71	58.81	1.26	62.63	0.99	5.68%	0.51
50-54	51.24	0.73	59.64	1.39	64.35	1.01	5.16%	0.58
55-59	50.56	0.68	64.62	1.36	69.70	1.16	6.54%	0.45
60+	50.35	0.63	61.56	1.19	67.87	0.91	7.70%	0.43
Average	33.39	0.57	32.64	1.20	33.06	0.85	3.77%	0.52

Source: World Bank LSMS-ISA data 2012

Challenges facing youth in agriculture

Agriculture is a viable livelihood choice only for those who can access land and other key resources and inputs. Youth remain disadvantaged because of their limited access to land and little or no voice in policy-making processes. They often lack access to agricultural extension services, affordable inputs, or marketing opportunities. Lack of information, technical skills, and basic education further weakens their situation in the sector. Furthermore, young women are among the most disadvantaged when it comes to decent work opportunities, and face greater difficulty translating their labor into paid work and their paid work into higher and more secure incomes, which would ultimately lead to

enhanced food and nutrition security.¹⁴ These constraints limit the productive potential of young rural people.

In general, any policy or program that aims to improve and integrate youth in efforts to raise agricultural productivity must address one or more of the constraints faced by young women and men in rural areas, i.e., expanding young farmers' economic opportunities by facilitating their access to land, expanding access to financial services and markets, and enhancing the quality of formal and informal vocational and skills training. In this section, some of the key challenges facing youth are discussed, along with possible solutions.

Access to land

In the African socio-cultural and economic context, access to land is of utmost importance. Data from four countries in the region shows that land use and ownership increases with age (see Table 2.2).

For young women, it is more difficult to acquire land, as both statutory and customary laws continue to govern land rights in most SSA countries and communities. Many of the customary tenure systems deny land rights to women. By tradition, men inherit land and women gain user rights through their relationship with a male relative.¹⁴ A significant barrier for youth acquisition of land rights is embedded in the customary land tenure

systems, i.e., the passing of land to male descendants (in patriarchal societies) when they marry, or when fathers die. This means that many young men have to wait for a long time before they can have their own rights to land, while successive male generations increasingly receive smaller and less valuable pieces of farmland.

Under matrilineal systems (such as in northern Mozambique, Ghana, and in parts of Zambia and Malawi), land rights are allocated through the maternal line, although the traditional authority, mostly older men, make all the decisions about land tenure. This means that, whether women live in patrilineal or matrilineal

¹⁴ FAO 2010. The state of food and agriculture, Women in agriculture: closing the gender gap for development, 2010-2011.

communities, they still access land through male relatives – their fathers, husbands or uncles.¹⁵ In Burkina Faso, for example, the law states that the government owns all land, but in practice land tenure is governed by local customs, with decisions dominated by men.¹⁶ In the same patriarchal system, young women do not inherit land in their natal homes as they are expected to get married – and access land through their husbands. Men often have multiple wives in SSA, making the chances of securing a husband's land after he passes away more difficult. The scourge HIV-AIDS has left young widows disinherited by their relatives' in-law when their husbands die.

Several countries have approved and adopted legislation that grants women equal rights to land, but these are not always implemented and provisions of land title deeds still tend to follow the customary systems, where the titles are given to heads of households – usually male. For example, the Kenyan Constitution eliminates gender discrimination in law, customs and practices related to land and the land laws protect women's inheritance, succession and matrimonial property, yet women only hold about 1-5% of all land title deeds. Consequently, they have little control or decision-making power over the land they use for agriculture or food production.¹⁷

In Ethiopia, the majority of young people living in rural areas do not have access to their farmland despite a constitutional right to access land in the community in which they live.¹⁸ A national survey, carried out in 2012, confirmed that youth (18-29 years of age) account for 21% of rural land holdings in Ethiopia. Only 3% of landholders are young women, even though the Ethiopian land laws allow for equal land rights for women and men.¹⁹ For those interested in effective use of land for agricultural purposes, most of the youth – especially males – can and do access land through gifts and inheritance from parents, although in Ethiopia young women continue to have lower expectations of land inheritance than do young men.²⁰

A study conducted on youth engagement in agriculture in Uganda revealed that about 70% of youth-headed households use land under the customary tenure system and only 19% have exclusive land ownership rights under the 'freehold' and 'mailo' tenure systems.²¹ Mailo land refers to land divided into one square mile blocks (termed mailo), which was allocated to various political

notables under the Uganda Agreement of 1900. Others have acquired Mailo land through inheritance and sale.

The Ugandan customary land tenure system is restrictive. It does not provide security of tenure for land users, or allow for selling land, and therefore impedes youth who may want to invest in land improvements or access loans using land title deeds as collateral.

Options for facilitating youth access to land – While land issues are complex and seemingly intractable, there are steps that can be taken. It is possible, for example, for government land policy reforms to identify new holdings for youth who want to engage in agriculture. This has been done in Egypt and Ethiopia.²² In reforming the administration of land, young people can benefit from policies that make rental and intergenerational transfer easier, or through resettlement programs targeting young people. They also have the opportunity to acquire new farms and become engaged in agricultural activities full time.

Land markets – whether for sale or rent – are crucial for sustainable land management and economic development (Benin and Pender, 2009). However, youth access to them is often constrained by high youth unemployment, low wages, lack of savings and low purchasing power. In addition, land markets in Africa are mostly poorly developed due to "... asymmetric information about land quality, lack of land titles, underdeveloped credit markets, inability of poorer farmers to pay for the collateral value...and/or various policy distortions" (Binswanger and Rosenzweig, 1986; Binswanger et al., 1999). Youth participation in land markets is itself intimidating, particularly considering youth's lack of experience in negotiating land deals with rent-seeking land administrators and brokers. Where they exist, land rental markets are potentially important in enabling land-poor households (including youth and women) to access land for cultivation (Jin and Jayne, 2013). However, the temporary nature of this access both keeps tenants from investing in sustainable land management practices and exacerbates tenure insecurity.

Still, improved land markets could provide youth with the ability to purchase land of their own. Such improvements could be accompanied by youth access to loans for buying land, and training to develop viable

¹⁵ Bicchieri Marianna. 'Communities: Land rights, gender equality and rural development: Challenges and achievements in Mozambique' in African Youth in Agriculture, Natural Resources and Rural Development

¹⁶ Feighghery et al 2011. Intersections of Youth and Food Security

¹⁷ The Constitution of Kenya; National Land Policy; Land Registration Acts; and Akinyi Nzioki, Critical Gender Issues and Policy Statements.¹⁵ F

¹⁸ ELSEVIER. Are Rural Youth in Ethiopia Abandoning Agriculture by S. Bezu and S Holden. Norwegian University of Life Sciences, Aas. Norway. In World Development Vol 64, pp 259-272, 2014. <http://dx.doi.org/10.1016/j.worlddev.2014.06.013>

¹⁹ Ibid

²⁰ ELSEVIER. Are Rural Youth in Ethiopia Abandoning Agriculture

²¹ EEPRC 2013. Youth Engagement in Agriculture in Uganda: Challenges and Prospects. Research Series No 106

²² FAO, CTA, IFAD

agriculture-based business plans. Leasing land to youth interested in undertaking agricultural entrepreneurship opportunities is another option to be considered.

So, what to do? Beyond the enduring rhetoric that the youth are tomorrow's leaders, there is an urgent need to recognize and accommodate them when designing and executing policies and programs aimed at mitigating their socio-political exclusion and economic marginalization. Africa cannot afford to ignore the social and political risks posed by a rapidly growing youth population. At the same time, Africa should strategically position itself to capitalize on the enormous opportunities offered by its bulging youth population, especially considering the aspirations, energy and innovative capacity of young people. As the African Youth Charter (2006) indicates, youth should be seen and treated as partners, assets and prerequisites for sustainable socio-economic development of the continent. The starting point is to listen to them. As former UN Secretary General Dr. Kofi Annan says, "We must listen to the future leaders of the world and empower them to bring about real and necessary change."²³

With respect to youth access and control over land, there is need in the short-term to institute the following measures:

- Integrate youth into national and international policy discourse and programming processes;
- Encourage co-management of land between youth and designated owners and/or custodians;
- Ease distortions and inefficiencies in land rental markets;
- Build the capacity of youth, and raise their awareness and empower them on land matters – laws, acquisition procedures, and bargaining – i.e., the development of youth-oriented advocacy;
- Offer legal services for youth to ensure that their rights to land are recognized and defended;
- Provide financial support and economic incentives, such as targeted discounted loans and innovative extension services, to enable youth to participate in land markets and establish agribusinesses;
- Strengthen rural youth organizations and youth participation in mixed organizations to give them a voice in policy-making processes; and
- Provide group land access, by encouraging and facilitating formation of youth groups or worker

cooperatives for youth that are interested in agriculture-based activities.

- Over the longer term, there is need to:
- Design policies and enact laws that are responsive to the land needs of youth, especially girls and young women. Notably, women continue to be the dominant source of agricultural labor in Africa without land ownership and control.
- Work with communities (particularly the elderly) to allow youth participation in decision-making on land matters and integrate youth into traditional land access and control regimes.
- Design mechanisms and strategies for peaceful conflict management (where absent) and strengthen existing conflict management mechanisms.
- Create opportunities for off-farm employment of youth in order to ease the pressure on land as the primary source of livelihood. This could be achieved through investment in youth education and training, rural infrastructure (roads, water and electricity), and creating or strengthening agricultural commodity value chains. These actions will also ease land-based conflicts.
- Improve the effectiveness and efficiency of land markets as mechanisms for providing access to land.

Overall, there is an urgent need to undertake more studies on youth land access and control and to generate statistics on youth landholdings under different tenure systems in each country. Such data and analyses will help in designing evidence-based policies and programs that will tackle the burgeoning problem of youth unemployment and poverty. It is only by so doing that we can truly assure that the envisioned role of youth as the "leaders of tomorrow" will actually be realized.

Influence of land ownership on use of inputs – Land ownership tends to stimulate the use of productivity-enhancing agricultural inputs, including improved seed, fertilizers, pesticides, and hired labor.²⁴ Many young SSA women and men born on farms remain on their family's holdings, contributing their labor and expecting to eventually inherit portions of the family land. Depending on the number of male or female siblings, inheritance often leads to fragmentation of family land into ever-smaller and increasingly non-economic sized portions.

Young people who stay on the farm can guide their families in managing the farming household as a business enterprise. To do so, however, requires mentorship programs that teach young people how

²³ <http://kofiannanfoundation.org/newsroom/press/2013/05/kofi-annan-launches-global-initiative-to-inspire-young-people-to-lead> - Accessed 3 August 2015

²⁴ FANRPAN, 2012

to make a better living from agriculture. For example, in recent years IFAD has championed the 'household methodological approach' with encouraging results. Household methodology combines livelihood strategies pursued by women, men and adult children of the household into one family vision, encouraging equitable intra-household relations in decision-making processes, and working together as a win-win solution that benefits everyone.²⁵ Household methodologies also significantly contribute to gender equality objectives, and provide opportunities for intergenerational inclusion and integration.²⁶ This approach is being piloted in Zambia,

Malawi, Uganda and Ghana by governments, NGOs and development partners.

By employing the household methodology, agricultural extension services have the opportunity to transform farming households into family enterprises, and thus absorb young people constructively, not only by providing them with technical advice on crops or livestock activities²⁷, but also teaching them about better and/or innovative farming practices, such as conservation tillage, hydroponics, mechanization at all levels, the production of higher value products in response to market demand.

Access to agricultural finance and insurance

Young agripreneurs will need significant financial support to enable them to sustainably step-up their productivity. Even where youth may have access to land, they still need financing for investments in productive assets, and to access insurance schemes in the event of adverse effects arising from shifting weather patterns and climate change. Financial agencies provide few services targeting youth, and often focus on credit rather than savings, which young people especially need to build up in order to invest in assets or insurance.

In many African countries, regulations generally exclude youth below the age of 18 from accessing financial products. Most of these products are specifically not tailored for youth; they are rarely recognized as a distinct client groups and therefore financial services are not developed to meet the specific needs of young people.²⁸ As a result, the majority of young women and men continue to rely on informal sources (i.e., family, friends, suppliers and traders) to access financial services. In addition, agriculture is often perceived as much riskier than other sectors, particularly by financial institutions that lack in-house expertise on agriculture. This leads many financial service providers to inflate the risk (and the interest rates) of farm microfinance, especially when dealing with youth. Young people have been viewed as high-risk clients because they have little security or assets that can be used as collateral to access credit or loans.

While ICT offers a wide range of products for accessing financial services, many people in rural SSA still lack Internet connectivity, an obstacle for young people wishing to stay in rural areas and conduct their agricultural enterprises from there.²⁹ Mobile/digital services are nowadays addressing this challenge. Rural youth are yet to organize into groups to generate savings and improve their ability to borrow,

such as is commonly done by women farmers. Even though many studies show that young people and women are more reliable in terms of repayment rates, "...young women face additional constraints in accessing financial services due to their higher rates of illiteracy, restricted liberty of action and lack of consent by family members as a result of gender bias and entrenched negative social norms."³⁰

In accessing finance by the youth, opportunities exist for innovative collateral schemes. For example, a leading mobile network operator in Kenya, Safaricom, has launched a number of value-added services through its M-PESA product, aiming to move its customer base beyond basic money transfers. Safaricom launched 'M-Shwari' in 2012, a new banking platform that enables customers to save, earn interest, and access small amounts of credit instantly via their mobile phones. Loan amounts depend on how much clients have saved in their M-Shwari accounts, as well as their repayment behavior. It is not yet clear how the youth, especially those engaged in agriculture, are using M-Shwari and the level of awareness about the product.

Affordable agricultural insurance remains out of reach of many young farmers and thus exposes their production to risks that otherwise could be managed through insurance. Crop or weather insurance schemes address some of the uncertainties that youth may face in agriculture. A study carried out in northern Ghana, testing the relative importance of capital and risk in driving farmers' investment behavior and the different prices for rainfall insurance among households, revealed that:

- Farmers who received the insurance grant increased their expenditure on farm chemicals, and brought more acres of land under cultivation. If the primary constraint on investment were a lack of capital,

²⁵ House hold Methodologies <http://www.ifad.org/gender/learning/lessons/household.htm> 18/4/15 at 2:17 p.m

²⁶ Farnworth C.R. 2012 Household Approaches Synthesis Paper. Prepared for Policy and Technical Advisory Service, Programme Management Department, IFAD

²⁷ Brooks, K. et al 2013. Agriculture as a Sector of Opportunity for Young People in Africa. Policy Research Working Paper 6473. World Bank, Sustainable Development Network, Agriculture and Environmental Services Department.

²⁸ Ibid

²⁹ Dalla Valle

³⁰ IFAD, FAO, CTA 2014

then the insurance product, which offered no up-front payouts, would not have affected their ability to purchase materials. Many farmers appeared to recognize the value of the insurance product, with a significant proportion choosing to purchase insurance in years two and three.³¹

- Farmers with weather insurance invested more in agricultural inputs, particularly in chemicals, land preparation, and hired labor.

This study shows that crop or weather insurance schemes enable young agripreneurs to take the risk of investing more in their agricultural activities.

There is a need to re-train financial service providers, so that they can develop products targeting youth. Possibilities could include targeting young women and men through their already mobilized self-help groups, as is often done with women's groups, providing them with

individual loans to be paid through the accountability systems organized by the group. Financial service providers should provide products and services that take into account the peculiarities of the agricultural sector.

Successful models should be based on building repayment requirements around the cash needs of young farmers without compromising "the essential principle that repayment is expected, regardless of the success or failure" of the farm. For instance, offering products tailored to the agriculture season and flexible repayment schedules instead of strict weekly or monthly payments or lending with access to inputs and training to mitigate production risks.³² Financial service providers can also use contractual arrangements with agrodealers and extension workers to guarantee input quality, markets, and access to training. If financial institutions utilize some of these suggested strategies, the expected risk in financing the youth in agriculture will be manageable.

Access to knowledge, skills and extension services

Education and vocational training opportunities for youth are critically important to developing and promoting employment opportunities in rural areas. Although agriculture is the predominant economic sector in SSA, traditional teaching methods do not always provide adequate time and practical methods for learning agricultural skills. Such opportunities are similarly limited with regards to vocational education.³³

Investment in human capital is an essential factor determining agricultural performance and productivity. The relationship between education and agricultural development is mutually reinforcing. Educated farmers are in a better position to understand and adopt new technologies, make informed choices on effective use of inputs, labor and equipment, respond rapidly to changes in the market and natural calamities.³⁴ Evidence from a number of SSA countries has demonstrated that investment in young people's education, vocational skills and entrepreneurial training increase their level of employment and income and create a high demand for their labor and skills.³⁵

Thus, vocational education in agriculture should provide diverse skills – including giving young people skills in processing, value addition, marketing, machinery operation and repair, transport, and quality control. As with basic education, special challenges facing women seeking higher technical training should be addressed through

innovative programs targeting young women. Beyond technical skills, there is need for youth to master such 'soft-skills' as teamwork, effective communication, creativity and entrepreneurship. Some of these are learned through mentorship programs like the 'farmer and junior farmer field schools', or the Household Methodologies employed by IFAD.

Farmers Field Schools (FFS), introduced by FAO, are 'schools without walls' where facilitators meet weekly with groups of farmers to assist learning in an informal setting within their own environment. The FFS should target young women and men farmers in order to increase their productivity. The Junior Farmer Field and Life Schools (JFFLS) initiative aims at passing on agricultural knowledge and life skills to boys and girls between the ages of 12 to 17, providing them with employment and livelihood options.³⁶ JFFLS provides vocational training on subjects chosen, in consultation with the students, from among a variety of modules, all of which have been developed in collaboration with partners and on the basis of local needs. JFFLS programs cover topics such as: agriculture as a business (e.g., entrepreneurship, marketing, accounting); hygiene; sanitation; nutrition; HIV-AIDS; personal development; and the prevention of child labor. Civil society organizations – various NGOs, as well as community- and faith-based organizations – also contribute their knowledge, skills and support to JFFLS programs at the local level (Box 2.1).

³¹ Credit Access, Insurance, and Technology Adoption in Ghana <https://www.poverty-action.org/project-evaluations/sector-search> 4/4/2015 at 11 pm

³² <https://www.oneacrefund.org/blogs/tag/microfinance/274> 4/5/2015 at 11.15

³³ FAO, 2011

³⁴ WB Agriculture as a Sector of Opportunity for Young People in Africa

³⁵ FAO 2014

³⁶ FAO, CTA, IFAD 2014

Youth and land in SSA: lessons learned by IFAD

Developing countries throughout the world are currently experiencing unprecedented pressures on land and natural resources. In 2014, sub-Saharan Africa's population was estimated at 961.5 million and, with a surface area of about 24 million km², SAA is one of the most sparsely populated regions in the world.²⁹ The irony is that Africa is changing from a continent of land abundance to one of land scarcity. The demand for land is increasing rapidly for a host of reasons, including population growth and climate change.

While the region has the largest land area of any developing region, SSA also has the highest concentration of degraded soils and imports more agricultural products than any other developing region – even though its agricultural growth surpasses that of other developing regions and it hosts the highest proportion of rural poor.³⁰

Access to land is crucial to SSA youth

IFAD recognizes that land is fundamental to the lives of poor rural people, providing food, shelter, income and social identity. Secure access to land reduces vulnerability to both hunger and poverty. Land tenure insecurity exacerbates poverty and has contributed to social instability and conflict in many parts of the world. For many SSA rural youth, access to land is becoming more tenuous than ever.

Agricultural growth in SSA, which has been impressive in recent years, has resulted more from cultivating additional land (extensification) than from improving productivity (intensification). Given the growing young population profile in SSA, there could be considerable scope for increasing labor intensity of agriculture. However, as a consequence to the traditional difficulties faced by youth in obtaining land, young people are often much more inclined to seek urban and rural employment opportunities offering perceived higher returns for effort compared to extensive agriculture.³¹

Gaining access to land is an arduous process

Customary land management systems predominate in SSA countries, with land and property rights frequently being weak or unclear. Inheritance of land or rights is often the preeminent mechanism by which youth obtain access to land. However, young people can be left landless or have only secondary user rights if family holdings must, according to custom, be subdivided among a large number of siblings. This can lead to small, fragmented and economically unviable land parcels. Young people are rarely involved in land-use decisions, which are normally made by elders. Moreover, life expectancy is increasing in many countries, implying that young people have to wait longer to inherit their shares of family land. Adult smallholder farmers are often unwilling to pass on land while they are alive because they are still relying on their land for the family's survival. As a consequence, young farmers' access to land and to its means of production is delayed, leaving them with no real management responsibilities and few opportunities for investment and economic growth.

In many arid and semi-arid SSA areas, land is culturally considered communal property, due to a fear of fragmentation. As a result, young people are often treated as farmhands or unpaid family workers in the rangelands instead of young farmers in their own right. This greatly impedes land tenure security.³² In addition, when young people work a family parcel (without secure ownership of the land), they are often unable to join local farmers' organizations, as membership is often restricted to independent farmers.

One way young people are able to access land is by providing labor, either within or outside of the family's plot, through sharecropping arrangements. Such land management agreements can sometimes create positive symbiotic relationships between youth and the elderly, often widows, who provide the land. Even so, the HIV-AIDS pandemic and the generalized impacts of climate change on soils are also complicating land tenure issues and youth access to this most fundamental agricultural input.³³

Impacts of limited youth access to land

Problems related to constrained youth access to land are diverse. The lack of financial autonomy largely explains why landlessness among rural youth is a primary cause of migration to urban areas, seeking alternative sources of income.³⁴ This can also impede young people from starting their own families. Even though access to land can be acquired through the market, young people often lack the resources needed to buy or lease land. Moreover, distribution of land by the state tends to favor adult men – as heads of the households.

In addition, the heterogeneity of young people increases the complexity of the issues they face. Such factors as gender, marital status, level of education, and legal status need to be considered. Low levels of literacy and lack of knowledge of their rights, including those related to land, impede land tenure security for young people.

Generally, in the customary land tenure systems of SSA, tradition dictates that women's rights to land are intrinsically linked to their relationship with men, even when the law protects their rights. The constraints faced by rural women in terms of access to productive factors such as land may undermine their capacity to adopt new technologies and/or take advantage of economies of scale to improve their competitiveness.

Land is the most fundamental resource required for improving the livelihoods of rural women and empowering them economically. IFAD is therefore paying greater attention to mainstreaming and strengthening women's land rights into its operations. In the East and Southern Africa region, for example, the majority of the rural poor are women, and IFAD is increasing its efforts to reach women and youth through project interventions.³⁵

Way forward and possible solutions

The diverse challenges faced by young women and men need to be clearly identified and taken into consideration to ensure that land tenure interventions are tailored to their different realities.

The challenge therefore is to engage young people in the political and cultural arena, and to provide technical toolkits and conceive comprehensive policies for land issues. Young people's representatives should be included in policy dialogues land policies and legal frameworks are revised³⁶. Responses to the wide variety of challenges faced by youth should cover socio-cultural, economic, legal and political aspects.³⁷

In its projects, IFAD ensures not only that it assists rural poor people, but also that its interventions target those with the fewest resources and less power, such as women and young people.³⁸

In today's rapidly changing world, youth are increasingly mobile, social and creative, and various responses are required to facilitate their access to land.³⁹ Greater equality in the distribution of assets such as land will speed progress towards reducing food insecurity and improving the overall conditions and prospects for African youth.

Long-term solutions to address the insecure land tenure of young people

Over the longer term, a number of actions can and should be taken to strengthen youth land tenure:

- Youth should have a strong voice in land-related policy decisions and implementation;
- Stronger legislation, local institutions and legal services for youth are needed to ensure that their rights to land are recognized and defended;
- Alternative approaches to ensuring secure youth access to land need to be considered, such as group acquisitions of land, cooperative farming, and the transfer of land intra-vivo where feasible;
- Youth-oriented advocacy is needed to Improve youth awareness and empowerment;
- Land sales and rental markets need to be adapted to the circumstances of youth, and such arrangements as sharecropping should be facilitated as mechanisms for providing access to land;
- Off-farm economic opportunities or small, land-intensive farming activities targeting young people should be Identified and promoted; and
- Rural youth organizations, as well as participation in organizations that enable young people to have a voice in policy-making processes need to be encouraged and strengthened.

Box 2.1 Junior Farmer Field and Life Schools (JFFLS)

The Junior Farmer Field and Life Schools (JFFLS) model developed by FAO is showing encouraging results as a practical way to help young farmers manage a farm and take business decisions. The young farmers examine the problems that threaten their livelihoods, weigh available options, and make decisions about what actions they should take. They also conduct experiments in the fields they cultivate. The JFFLS model has the potential to provide them with opportunities and enhance their self-esteem, while minimizing the risk of them adopting negative coping behaviors. In East and Southern Africa, the model has been developed and tested in Kenya, Mozambique, Namibia, Swaziland and Zimbabwe since November 2003.

Access to and use of innovative technologies

If youth are to play their role in revitalizing agriculture productivity in Africa, access to new and innovative technologies will be critical. Expanded opportunities in the use of new technologies might attract more youth into the sector, such as production using hydroponics, access to input and output market information through mobile phones, marketing of products using social media, or sunlight greenhouse farming where they can dictate cropping seasons without having to rely on naturally occurring rainfall.³⁷ Young women and men can be part of the strategies for increasing investment in the mechanization of smallholder agriculture. As a general rule, young people are already interested in ICTs. Accordingly, use of ICTs in disseminating information on appropriate and new technologies among young farmers is highly recommended. The use of social media has the power to reach millions, is measurable, and has gained a quick following among youth with access to the appropriate technologies. Young people are attracted to the instantaneous nature of communications and fast changing technologies – keeping pace with these exciting innovations is addictive. Pioneering strategies are required to target young women, taking into consideration their productive and reproductive roles in their families. Examples of ICTs providing agricultural information are covered in Box 2.2.

Opportunities for improving market access for young farmers abound with the use of ICTs. Harnessing

these calls for educational and training institutions to equip young farmers with skills needed beyond basic education (i.e., reading, writing and numeracy). These institutions also need to provide training in the use of digital technologies to access and interpret information and strengthen the delivery of agricultural education and extension services. Additional opportunities for on-farm training for youth, and for agricultural enterprise development, should be identified and utilized, particularly for such value chain activities as post-harvest handling, food processing, packaging and trade.³⁸ Some key strategies include: establishing ICT centers run by youth volunteer groups; stimulating youth interest via Young Farmers Associations; and facilitating communication between groups in various communities and relevant government extension service and policy implementation agencies.

Two strategies for stimulating agricultural production have been proven effective: increasing investment in agricultural research, and improving access to agricultural inputs like fertilizers and seeds.³⁹ Youth can be part of these strategies as they are more open to new ideas than are older generations. For example, the 'Farmers of the Future' program in Niger educates young people about how to move from subsistence farming to market-oriented farming with new technologies. As a result, young people there have been able to implement a technological revolution in their communities.

Access to markets

Investments in rural infrastructure, such as improved roads and markets, as well as extended mobile coverage in rural areas, can do much to improve agricultural productivity, to reduce transaction costs and increase market efficiencies. This in turn will attract, or help to retain, young people in agriculture and transform it from a subsistence lifestyle into a business. This would also mean building the capabilities of young farmers to engage in coordinated activities that improve their operations

in various ways -- in navigating markets, in seeking out competing transport options, and in organizing more efficient collection routes (by coordinating with one another using mobile phones and social media). The resulting critical mass of food producers will in turn attract larger scale and more efficient buyers and traders.

Governments will need to improve the business environment to stimulate private sector investments, especially in

³⁷ FANRPAN

³⁸ FANRPAN

³⁹ Feighery J., Ingram P., Li S., and Redding S. 2011. Intersection of Youth and Food Security. Office for Economic Growth, Agriculture and Trade, USAID

Box 2.2 ICTs and agricultural information

Agricultural information is now obtained through radio, television, the Internet, and mobile services ranging from early warning services (for drought, floods, and epidemics of pests and diseases) to agricultural production and market access. Cell-phone connectivity among farmers is expanding in SSA countries, as producers use phones to communicate with buyers and with one another. Both the private and public sectors are exploring and piloting the use of mobile phones to deliver information to farmers in a timely manner. The use of ICTs in disseminating agricultural information means that different skills are needed in the sector. “For smallholders operating in an environment that changes rapidly, questions such as when to plant, what to plant, and how to plant have become immensely important.”² Thus, the use of new technologies in passing information requires ability to ask the right question, know whom to contact and how to interpret the message.

In Nigeria, the Niger Delta, Region, and Youth for Technology Foundation – Agric-POWER – is delivering services and information directly to rural farmers, targeting widows while providing a sustainable and innovative platform for youth to reinvigorate their interest in development and passion for agriculture. The youth in this program (ages 18-22) work as ‘brokers’ delivering information using appropriate technologies and passing over bottlenecks that plague agricultural extension in SSA countries. Relevant information on technologies is passed to the beneficiaries via mobile phones.³

The Ndola Youth Resource Centre (NYRC), an NGO in Zambia, provides agricultural training, guidance, advice and information to young people, especially in farming techniques and value chain processes, business skills, marketing and bookkeeping.⁴ The Centre also links young farmers (via e-mail, SMS and radio) to local partners that can provide information on weather, pests, seeds, inputs, credit and proposal development, so that the youth can access loans from the government-run Youth Development Fund.

segments of the value chain where capital is missing (e.g., input supply, marketing, etc.), where new jobs can be created for young people, and in ways that increase the productive potential of their farms.⁴⁰ The development of public-private partnerships (PPPs) provides opportunities for bringing together diverse groups of public and private actors in the agricultural sector in joint ventures, linking up with family farms and thus creating opportunities for growth and youth employment. For

example, larger farms, processing units, supermarkets and other market actors can help smallholders access productive resources and technologies, facilitate value addition, and provide access to remunerative markets. They can also facilitate capacity development through apprenticeships and mentoring of the youth. Actions to increase employment or improve infrastructure and local services should be explicitly planned and implemented to achieve the desired impact.⁴¹

Rebranding Agriculture

There is hope for reversing youth disinterest in agriculture and rural areas. One of the key approaches will have to involve changing the perception of farming among the youth – from farming as drudgery for old people, to farming as a business and young farmers as entrepreneurs. In other words, farming should be presented more effectively as a business opportunity and young people made aware of the opportunities that exist throughout agricultural value chain.⁴²

The first step in making this transformation is to establish policies that will provide youth with tools they

need to empower them as agricultural entrepreneurs, as well as an environment conducive to seeing agriculture in a positive light. The second step involves agribusinesses having clear linkages along the agricultural value chain, from input manufacture and supply, to agroprocessing, to marketing and financing, to production processes and, ultimately, to consumption. “When these links are in place, wonderful things begin to happen.”⁴³ Young people should therefore be made aware of opportunities that exist all along the agricultural value chain, while at the same time agricultural enterprises undertaken and managed by youth should

⁴⁰ FAO, 2014 African Youth in Agribusiness and Rural Development. FAO Regional Conference for Africa

⁴¹ Ibid

⁴² FANRPAN 2012

⁴³ Kanayo F. Nwanze, President of IFAD. Viewpoint; Smallholder Can Feed the World.' Rome, Italy: IFAD 2011 <http://www.ifad.org/pub/viewpoint/smallholder.pdf>. 20/4/15 at 410 p.m

be identified, encouraged and targeted for marketing. Integrating youth in agriculture using a value chain approach encompasses a wide range of activities, such as providing necessary inputs, strengthening the delivery of business and financial services, enabling the flow of information, facilitating improved market access, and increasing access to higher value markets or value-added products.⁴⁴ In this context, young farmers also need access to financial advisory services, as well as extension training that assists them with technical and managerial skills.⁴⁵

Moreover, enhanced agricultural productivity will require transport, plant protection, veterinary services, and appropriate mechanization. To establish themselves as farm service providers, young women and men will need capital for purchasing or leasing equipment, and for

developing the skills required to operate and maintain their machinery. Others have the option to work as wage earners in the sector – as drivers, machine operators, mechanics, quality testing technicians, and many more – and all these require a range of technical skills depending on the type of production process and machinery.⁴⁶

In the area of agricultural technology, programs of mentorship and voluntary groups working with the same technologies can provide useful advice that compensates for young people's lack of experience. CAADP's experience-sharing mechanism allows countries to evaluate ways of relieving constraints to land, capital, and skills that hold young people back. CAADP can also use its advocacy work to help African leaders see how the agendas of agricultural growth and youth employment complement one another.

Capacity Building and Empowering Youth in Agriculture

Developing skills and capacities are key strategies for engaging the youth in agriculture. It is therefore important to comprehensively address all components of rural learning, both formal and informal, from basic education to vocational training and apprenticeships, as well as informal mechanisms by which knowledge is transferred from one generation to the next.⁴⁷ Basic literacy and numeracy skills are a minimum requirement to be competitive in both the formal and informal employment markets. Better training and refined skills are essential in opening up and integrating young women and men in agriculture. Given the modern dynamics of agricultural and rural livelihoods, young people need to be empowered through skills related to modern farming, agriculture-based entrepreneurship, and marketing. Approaches to achieving this should be underpinned by targeting young women and men in training, as well as better coordination of formal and informal means of skill development and between public and private training providers.

Training in functional literacy and numeracy is crucial if youth are to help raise Africa's agricultural productivity. This includes giving young women who may have dropped out of school due to cultural and family pressures the opportunity to learn new skills. One of the best practices is seen in FAO's approach to youth capacity development through JFFLS:

1. Develop an integrated agriculture and life skills learning, and adapt the curriculum to local needs and contexts (design);
2. Enhance skills in field preparation, seeding, planting, pest management, harvesting, and irrigation, as well as understanding of agroecosystems (learning);
3. Develop life skills (self-esteem, decision-making skills, nutrition, HIV-AIDS prevention, health and hygiene), promote youth farmer associations, and create awareness of social and economic rights (child rights, gender equality, land and property rights) (empowerment);
4. Promote entrepreneurship, business, and market skills and facilitate access to credit (market access); and
5. Strengthen the capacity of involved institutions, aligning their activities to national priorities and promoting national ownership, and embed JFFLS into national employment programs (Institutionalization).

The JFFLS approach has strengthened youth skills and encouraged their participation in the agriculture sector.

⁴⁴ IFPRI 2012

⁴⁵ Ibid

⁴⁶ Brooks, K. et al

⁴⁷ IFAD Youth Investing in Young People for Sustainable and Equitable Development

Box 2.3 Deliberation of youth in agricultural policies⁶

“We advocate for having our own organizations, so as to best represent the views and interests of rural young men and women. We want to organize and develop advocacy campaigns dedicated to youth issues. We want to be involved in policy-making processes from design to implementation, monitoring and evaluation. In this regard, we need human, technical and financial support to build and strengthen our institutional capacities. We are aware that some programs support farmer organizations and we recommend that a share of such programs be directly dedicated to rural youth.”⁷

We demand more consideration, including more space to express our voice and specificity within Farmers Organizations. We want to participate as full members in their constituencies and to be represented in their decision-making organs. We urge Farmers Organizations to create effective youth representation mechanisms. For example, in Togo, a network of young producers and agricultural professionals has been set up within the Coordination Committee of Farmers Organizations and Agricultural Producers.’

Involving Youth in Agricultural Policy Dialogues and Programming

Rural youth are a part of a rapidly evolving environment, but are often marginalized in policy and program development. National policies and programs related to youth in agriculture often cannot be implemented because people who are not aware of the constraints faced by rural youth design them.⁴⁸ Policy dialogue on youth-related topics involves working closely with governments and partners, which are well aware of the need to address youth issues sooner rather than later.⁴⁹

Facing a growing challenge of youth unemployment, African governments need to review and formulate sound rural development policies that maximize opportunities for young people, strengthen their capacities to participate, and facilitate their access to

productive resources needed to drive broad-based growth to enhance agricultural productivity and rural economies. Platforms and mechanisms for their engagement need to be put in place to enable them to fully engage in the policy dialogue, make their voices heard, and give recognition to their needs and priorities. Consultations that include youth during policy formulation are critical and require careful planning; the quality and the nature of youth participation will strongly affect ownership and their commitment to new policies. The youth are starting to deliberate on issues affecting them, for example at the Farmers' Forum Global Meeting held in Rome in 2012, wherein youth were invited to address factors affecting them in agriculture (Box 2.3).

Youth in Agriculture: Case Studies of Institutional Approaches

While recognizing various interventions through development agencies, governments and civil society in supporting youth in agriculture, this section offers a

snapshot from selected case studies of interventions by institutions and governments.

The case of IFAD

As a specialized agency of the United Nations, IFAD has a unique mandate of improving rural food security and nutrition by investing in rural women and men in order to overcome poverty. In its work, IFAD has had a focus

on rural youth that was enhanced as the youth bulge reached its peak in many developing countries. This focus and commitment to rural youth was deepened in IFAD's Strategic Framework of 2011-2015, in which the

⁴⁸ FAO/IFAD/MIRJARC 'Facilitating access of rural youth to agricultural activities' Farmers Forum Youth Session February 2012

⁴⁹ IFAD Lessons Learned

fifth principle of engagement refers to 'creation of viable opportunities for the rural youth' and the third principle includes strengthening rural youth organizations. IFAD envisages a post-2015 world where (among other things) 'young people can hope to realize their aspirations for a better life in their own rural communities'.⁵⁰ In the 34th session of IFAD's Governing Council in 2011, a side event focusing on youth⁵¹ was organized to discuss how to boost food security and reduce poverty by involving young rural people in a dynamic, modern agribusiness sector. The following points emerged from the discussions:⁵²

- Create the environment and the incentives that encourage young rural women and men to choose agriculture;
- Ensure that young women contribute to the rural development process and share in the rewards;
- Leverage agricultural investments through rural education and training;
- Get young people interested in agriculture;
- Change the way we view agriculture and farmers: as a business for young people;
- Set new paradigms;
- Prioritize young rural women and men: give young people a reason to stay in their rural homes, contribute to their communities, and curb rural-urban migration;
- Give young people a voice;
- Create opportunities for young women; and
- Make funds available to young farmers.

Recognizing the challenges youth face in accessing finances, IFAD has developed a toolkit on youth and rural finance. Based on lessons learned in this area, it is recommended in the toolkit to: Identify financial service providers (FSPs) that are committed to serving young people over the long term and invest in building their capacity to reach out to youth in rural areas; and support demonstration projects involving youth loans for farm and non-farm activities, and ensure that results are shared widely.⁵³

IFAD has used the grant window to support youth related initiatives. In West and Central Africa, a youth-led project was initiated to learn about how young women

and men are increasingly becoming agents of change, and understanding how to unleash their potential for the collective benefit of their communities. The grant supported a series of activities, including the creation of the Global Youth Innovation Network (GYIN), which is a youth-led initiative that is facilitated and managed entirely by young people. The GYIN reached 5,000 youth in less than a year since initiation. Members of the network have participated in a number of international events, such as the youth session at the Farmers' Forum 2012, the Rio+20 World Youth Congress, the UN ECOSOC Youth Forum in New York, the Africa Economic Outlook on Youth seminar in IFAD, the Global Youth Greens Congress in Senegal, and a Conference on Future of the Agrifood sector in Africa, which was held in Ghana.

Other IFAD-supported projects and activities focus on enabling the transition to employment by involving young rural people in skills and vocational training, supporting an environment that generates decent jobs for young people on and off the farm, and by providing support to young entrepreneurs. They also aim to enable young rural people to gain access to the resources, inputs and services they need to be productive.⁵⁴

Reclaiming desert land for young graduates in

Egypt – IFAD, in partnership with the Government of Egypt (GOE), initiated irrigation schemes (e.g., Newlands Agricultural Services Projects and West Nubaria Rural Development Project), giving young graduates from universities or polytechnics priority access to the plots (at least 40% of the young settlers), a house with long-term credit and a certificate of ownership, thus committing themselves to cultivate the land.⁵⁵ In addition, the program provided the young graduates with land at a reasonable price, to be paid by installment; food for a period of 4 years; extensive agricultural training; and new technologies (i.e., drip irrigation); and a credit line created to support their micro- and small enterprises. IFAD also built health centers and schools, and as services and infrastructure improved, "the desert land became more attractive to youth and as a result, between 2002 and 2012, the proportion of successfully settled graduates soared from 25 to 98 percent".⁵⁶ Among the lessons learned from IFAD regarding youth and land tenure: long-term solutions are key to sustainable youth integration in agriculture.

Agri-enterprise development and management

centers – IFAD is supporting young people as a priority target in the Business Development Services (BDS). The BDS provides a one-stop center for mentoring, training, providing information and creating market linkages. In

⁵⁰ IFAD's Strategic Framework of 2011 – 2015

⁵¹ Proceedings of the Governing Council High-Level Panel and Side Events: Feeding future generations: Young rural people today – prosperous, productive farmers tomorrow; Thirty-fourth Session of IFAD's Governing Council, February 2011

⁵² Thirty-fourth session of IFAD's Governing Council in 2011

⁵³ IFAD 2015: Lessons learned Youth access to rural finance

⁵⁴ IFAD and Young People http://www.ifad.org/english/youth/index_full.htm 5/4/2015 at 10.54 pm

⁵⁵ FAO/CTA/IFAD 2014. Youth and Agriculture, Key Challenges and Concrete Solution

⁵⁶ FAO/CTA/IFAD Ibid quoting case study drafted by C. Goemans, adapted from IFAD P26 and 27

Madagascar, this is done by the *guichet unique-multi services* (GUMs); in Ghana, Rwanda, and Senegal it is done under the Rural Market Promotion Program (PROMER II); in Nigeria, under Community-Based Natural Resource Management Program (CBNRMP); and in Zambia, under the CTA Ndola Youth Resource Centers on Agriculture (NYRC).⁵⁷

The NYRC runs seven resource centers and provides training on modern farming techniques, value chain processes, strengthening business skills, and managing agricultural enterprises. The centers link farmers (via e-mail, mobile phone, text messages and radio) to local agriculture-based institutions and services that can provide relevant agricultural information. They also work to improve youth access to credit, and provide assistance in business planning and developing proposals to access youth loans.⁵⁸

IFAD-financed projects in Ghana develop models enabling small rural entrepreneurs to overcome their constraints, enhance their asset base, and become more competitive. The Business Advisory Centers (BACs) are implemented within the government's decentralization and public administration systems at the district level. Professional graduates in business-related subjects, such as administration, marketing and management, staff the BAC office. In Madagascar, BACs are decentralized and offices are headed by a senior professional with staff specialized in business matters. In Rwanda, individual entrepreneurs are recruited and trained to provide

Business Development Services (BDS) under the supervision of a *conseiller d'entreprise rurale* (CER) or rural business advisor based at the regional level. IFAD's N-Agripreneur has adopted innovative approach to foster new young entrepreneurs and mentors. Through the BDCs, young people have better opportunities to respond more quickly to new ideas and innovations than their elders, while becoming agents of change as they develop their businesses and find employment.

IFAD's capacity building programs are helping young people by improving their access to information, training youth to be agents of change, and promoting their involvement in the building of social capital.⁵⁹ In Rwanda, successful entrepreneurs are invited to discuss their work and answer questions at open day forums. In Ghana special business orientation seminars are regularly held for young women. In Nigeria youth platforms are held regularly to share information and experiences between young entrepreneurs. Young people are already literate and familiar with modern gadgets and do not have difficulty learning the use of Internet, share information and use ICT in their businesses. As agents of change, young people are recruited as volunteers to disseminate new agricultural ideas, knowledge and skills and thus facilitate access to support services. The recruitment and training of young people to spearhead project-supported development efforts is an effective way of promoting youth involvement in agriculture and rural development. Thus, young people are helping others, including their elders, to understand what the project has to offer.⁶⁰

The case of the IITA Youth Agripreneurs (IYA) model

The International Institute of Tropical Agriculture (IITA) is one of the world's leading research partners in finding solutions to hunger, malnutrition, and poverty. Its research-for-development (R4D) approach addresses the development needs of tropical countries. IITA works with partners to enhance crop quality and productivity, reduce producer and consumer risks, and generate wealth from agriculture. The Institute is a member of the CGIAR, a global agriculture research partnership for a food secure future.

Identifying that agriculture is an essential driver of youth empowerment and a sector that offers unique opportunities to secure jobs and skills for young people to grow agribusinesses in sub-Saharan Africa, IITA, under the leadership of the Director General Dr. Nteranya Sanginga, created the IITA Youth Agripreneurs (IYA) in August 2012.

The pilot group was made up of young graduates posted to IITA by the National Youth Service Corp (NYSC),⁶¹ and was challenged during their service year by IFAD's President (Dr. Kanayo Nwanze) to actively engage in agriculture and harness the various enterprise development opportunities across the agricultural value chain.

The goal of the IITA youth-in-agribusiness program is to reorient youth towards more productive engagement in agriculture through expanded opportunities in agribusiness, service provision, and market-oriented agriculture. IYA's strategy is embedded in a vision built on usage, utilization, and the application of a range of improved seed technology and processing options that will make a difference in people's lives. The strategy is inclusive of facilitating access to seed distribution and markets, and post-harvest processing and utilization.

⁵⁷ Ibid

⁵⁸ FAO/CTA/IFAD 2014: Case study drafted by C. Goemans, adapted from CTAS) P. 15

⁵⁹ IFAD Lessons Learned

⁶⁰ Ibid

⁶¹ Nigeria's NYSC scheme is a one-year mandatory program for graduates in Nigeria established in 1973 to reconstruct, reconcile, and rebuild the country after the Nigerian civil War. The purpose of the scheme is primarily to inculcate in Nigerian youth the spirit of selfless service to the community, and to emphasize the spirit of oneness and brotherhood of all Nigerians, irrespective of cultural or social background

Table 2.3 Some of IYA-Nigeria's operations

COMMODITY/SERVICE	MAGNITUDE	YIELD/OUTCOME
Maize seeds	20 ha	53 tons
Soybean seeds	9 ha	8 tons
Cassava	46 ha	Approx. 37 tons of roots and 1,500 bundles of stem harvested, (800tons of root and 10,000 bundles of stem to be harvested)
Vegetable (10 different varieties)	2.5 ha	4343 kg
Plantain/Banana	2 ha	20,000 suckers multiplied
Fish	4 earthen ponds stocked with 20,000 catfish	38 tons
Training	516 youth trained within Nigeria and outside Nigeria (DRC, Kenya, Tanzania, and Uganda)	Similar youth groups replicated in Nigeria (Borno State & Abuja) and other countries (DRC, Kenya, Tanzania, and Uganda)

The IYA framework is such that it directly engages youth in diverse and productive roles in agriculture, clearly utilizing the linkages along the value chains from production to processing, marketing, and ultimately to industrial and domestic consumption.

The strategy behind the group's organizational structure is to promote the growth of self-reliant, small-scale business models involving such crops as maize, soybean, cassava, plantain/banana, and vegetables. The choice of commodities was influenced by the main staple foods of people living in rural areas, as well as fast-growing cities in Nigeria and the rest of sub-Saharan Africa. IYA's initial focus on production and distribution of quality seeds has since incorporated value addition and has led to the group's production of cassava bread, soymilk, and tidbit snacks (from a mixture of cowpea and cassava flour), and service delivery in capacity building and consultancy. The group also diversified into animal production through raising catfish, and pigs to produce low fat pork.

During the first two years, employment opportunities for the agripreneurs were considered at each level including production, processing/value addition, and service provision in the value-chains. Although the group started with 20 youth, a need for more hands led to the recruitment of 15 more youth. The approach is expected to stimulate the creation of self-employment and wage employment at the various cluster levels to stimulate the optimal composition of occupations within a given value chain.

Mode of operation – During its first year of operation, IYA's activities were fully subsidized by IITA with grants from other development partners (FARA, IFAD, AfDB, USAID, BMGF, FGN, and FMARD). The funding strategy recognizes both the urgency of immediate action and the importance of longer-term investment for lasting solutions. It maintains the critical

mass and diversity of IYA, and improves the group's logistics to implement the program both locally and internationally. However, to achieve targeted outcomes, the IITA Youth Agripreneurs explored other sources of financing. The existing financial resource mobilization strategy includes:

- Production – revenue from the sales of produce;
- Grants – funds from NGOs, Foundations, International agencies, as well as the Federal and state governments of Nigeria;
- Training – charges from training organized by IYA for other youth in agribusiness; and
- Partnerships – resources obtained from alignment with IITA programs through partnership with projects that correlate with IYA's line of activities.

The strategy behind this sourcing of funds is designed to ensure that IYA pays its members through its agribusiness enterprise and also employs other youth.

IYA activities – The IITA Youth Agripreneurs are devoted to science-driven improvements in agriculture and are well placed to make a distinctive contribution to the challenges faced in agriculture and agribusiness. IYA's production activities have been implemented both within and outside the premises of IITA. With land acquisition being a major challenge for youth interested in agriculture, IYA engages in rounds of negotiations with traditional rulers and council authorities in charge of land in communities within regions of intended cultivation. The total amount of land cultivated by the group has progressively increased since its inception, with 70 hectares cultivated in 2014, and a projected 175 hectares in 2015 for crop production. Table 2.3 shows IYA's crop and fish production rate from 2012 to 2014.

Table 2.4 Three-step modular agribusiness training

TRAINING MODULES	
Step 1	Agripreneurial perspectives: Creativity and innovation, opportunity analysis, teamwork, leadership, and rural transformation.
	Developing a business model: Creative value, crafting business models, value chain innovations, and new venture experimentation.
	Discovering the customer: Customer segments and archetypes, value propositions, and product features
Step 2	Customer analysis: The start-up environment, product fit and refinement, market traction, and scaling sales to demand.
	Commercialization strategies: Value chain positioning, judging commercial potential, and commercial due diligence.
	Feasibility assessment: Industry knowledge, demand conditions, product lifecycle, competitive advantage
Step 3	Creating a marketing strategy: Marketing mix, promotion and placement, pricing and sales forecasting, and direct and channel sales.
	Business plan preparation and case presentation: Defining the business plan, authoring the business plan, conveying business propositions.
	Financing start-ups for business: This has to do with facilitating early sources of capital for the independent agribusiness enterprise, identifying investors, and developing the legal framework for investment and negotiation with investors.

In the last two years, the IITA Youth Agripreneurs have provided agribusiness training to over 500 youth from different parts of Nigeria and Africa, with a focus on mindset change and sensitization on best agronomic practices both in aquaculture and crop production. Entrepreneurship and managerial skills for business development were also incorporated into these trainings. The training program covers all the management practices in the production, as well as the post-harvest utilization, of such crops as cassava, soybean, plantain and banana, and fish. IYA has also offered training on various entry points for ICT in agribusiness, and on communication and marketing strategy development. Other training conducted includes: project administration, entrepreneurship development, financial management in projects, leadership and business management skills, use of farm machinery, post-harvest mechanization, best practices in crop production, and aquaculture production.

Agribusiness incubation – With lessons learned from the experiences of the pilot group, and to further maintain experiential learning, the support and expansion of youth agribusiness incubation centers was initiated. A three-step modular agribusiness-training model (see Table 2.4) was developed to span through the operations at such centers that will be created.

Achievements – After being tested in Ibadan, Nigeria, the replication of the IYA model in other parts of Nigeria, as well as in DRC, Kenya, Tanzania, and Uganda was instituted.

IITA Kalambo Youth Agripreneurs (IKYA): This group makes use of the IITA facility in DRC. The group, which is into crop production, also engages in the value addition of cassava producing cassava flour and baking bread, cakes, and other confectionary for sale. They brand and market the items themselves.

The Makueni Youth Agripreneurs (MYA): MYA was established in March 2015 with aim of making agriculture attractive to the young graduates in Kenya. The group makes use of the dryland facility of the University of Nairobi located in Kibwezi, Makueni County, Kenya. The group, which is composed of seven young graduates, is making use of 12 acres of farmland and facilities that have been abandoned by the university for 10 years. The group is using the irrigation system and the green house for the production of vegetables such as capsicum, eggplant and cucumber. The group will also be producing Birdseye chili pepper on a large scale to bridge the market demand for the crop. Fish and sorghum are commodities that have been chosen by the group after identifying available markets for them. MYA is also involved in adding value to and marketing their commodities.

The IITA Tanzania Youth Agripreneurs (ITYA): ITYA is into the production of High Quality Cassava Flour (HQCF) from the cassava planted by its members. The group is also involved in the use of soybean to produce soymilk. The soymilk, which has become widely accepted in Dar-es-Salaam and environs, provides nutritional value for children and nursing mothers. The group recently ventured into vegetable production in response to high market demand.

Other countries are expected to benefit from the model of the IITA Youth Agripreneurs through the “Empowering Novel Agribusiness-Led Employment for Youth in Africa” (ENABLE Youth) program. The ENABLE Youth Program will reinforce the role of disenfranchised young African adults through a comprehensive outreach effort by providing information, proven technologies, and opportunities to about 800,000 youth in at least 20

African countries. It is expected that the youth should be able to create their agribusiness enterprises; provide business development services for other youth who might want to embrace agriculture as they have done; and build a strong youth component in the agricultural sector across Africa, thereby providing a lasting and sustainable solution to youth unemployment in the region.

The case of Kenya: youth programs under the government of Kenya

Youth affairs in Kenya are under the Directorate of Youth in the Ministry of Devolution and Planning. The Kenya National Youth Policy of 2006 (which does not address agriculture issues) is under review. Youth in Kenya refers to those between 18 and 35 years of age. Seventy-five percent of the country's population is under 30; of these, 57% are female. Youth in

Kenya are largely unemployed, underemployed, and underpaid, and they rank among the working poor. Due to high levels of unemployment, most of them have not been absorbed in the job market. In order to address these challenges, the government of Kenya has a renewed focus on youth through several government programs, a few of which are highlighted in Box 2.4.

Conclusions and Recommendations

Transforming the agriculture sector is of critical importance, since it will continue to be the main sector for stimulating economic growth and the one that has the greatest potential for youth employment. For agriculture to be attractive to youth, it will have to be profitable, competitive and dynamic. Engaging youth successfully to increase agricultural productivity will also mean engaging them in decision-making processes. Effective integration and inclusion of young

women and men in Africa's agricultural renaissance, through well-designed public investments in agriculture and continued progress on policy reforms, will definitely deliver on the continent's economic growth agenda.⁶²

Identifying and effectively addressing challenges and obstacles that youth encounter is essential to integrating young women and men in agriculture and will go a long way in transforming the sector. Land policy

Box 2.4 Selected youth programs under the government of Kenya

Youth Enterprise Development Fund (YEDF) was established in December 2006 by the government of Kenya as an initiative to address the unemployment rate among the youth. The main objectives of the Youth Enterprise Development Fund (YEDF) are to provide loans for on-lending to youth enterprises, attract and facilitate investment for youth enterprises, market products and services of youth enterprises and provide business development services and employment for the youth. The main beneficiaries are the youth aged between 18-35 years who are in business or who want to be entrepreneurs. Funds are availed to the youth for the following: Commercial infrastructure; Market support and market linkages; Business Development Services/Entrepreneurship Training; and Youth Employment Scheme Abroad (YESA). From 2010 to 2015, the YEDF aims to reach 2 million beneficiaries. The Youth Enterprise Development Fund is now offering the 'Agri-Vijana Loan', which targets young people keen on undertaking agribusiness and, more specifically, screen house farming. Under this scheme, youths receive appropriate training and equipment to launch profitable farming enterprises. For groups to qualify, they must have at least quarter of an acre of land with access to an adequate supply of water.

The 'Uwezo Fund' is a youth and women's fund with an allocation of KES 6 billion. Its objectives are: 1) to expand access to finance through grants and credit to promote youth and women businesses and enterprises at the constituency level, thereby enhancing economic growth towards the realization of the goals of Vision 2030; 2) to generate gainful self-employment for Kenyan youth and women; and 3) to model an alternative framework in funding community-driven development.

⁶² WB 2013 Agriculture as a Sector of Opportunity for Young People in Africa

reforms that enable young people to access land are essential. Land laws must provide for equitable access to land by young men and women to facilitate their entry and participation in agriculture as an economic activity from which they can generate incomes and support their livelihoods. Innovative strategies, such as identifying new holdings for young people who want to engage in agriculture, land redistribution targeting the youth, or enabling them to buy land of their own are recommended.

Supporting agricultural education and vocational training opportunities for young people is crucial for the development of skills needed for enhancing productivity and addressing some of the challenges youth may face in agriculture. Basic education – numeracy and literacy skills – are linked to the level of productivity of a farmer.⁶³ Formal education (primary and secondary) can provide young farmers with literacy and business skills and introduce them to agriculture. Informal education can augment the capacity of young people to become better farmers.⁶⁴ To make agriculture attractive to the young, investment must be made in education at all levels, agricultural innovation must be supported, market and rural infrastructure must be improved, and the business environment must be strengthened in ways that will raise incomes and expand agricultural value chains.

Innovative application of ICT is a key element of the strategy to make agriculture attractive to the youth. The youth's response to ICT innovations and the opportunities that stem from ICTs stand as a powerful testament to the capabilities of Africa's young men and women. ICT has great youth appeal, but it also holds excellent potential for improving farming as a business. Farmers are now able to obtain real time input and output market information, create new market channels, and design attractive packaging and labeling.⁶⁵ This calls for building capacities of young people – male and female – and equipping them with technologies for addressing the emerging requirements of an attractive agricultural economy that offers prospects for viable incomes and a good quality of life.

Accessing finance remains a big barrier to improving the productivity of youth in agriculture, since young agripreneurs, especially if they are female, are often seen as high-risk clients. "This is often compounded by young women not having their own security or assets that can be used as collaterals against which they can

mobilize credit or loans from banks."⁶⁶ Financing is needed to cover the costs of crop farming, livestock rearing, or aquaculture; it is needed to pay for trade and marketing and for insurance in case of climate shocks; and financing is essential if youth are going to sustainably improve their productivity. The last few years have seen the emergence of new financial products and services that target agricultural communities, including youth, through banks, microfinance institutions, and SACCOs (savings and credit cooperatives). Some commercial banks are beginning to show interest in financing agriculture. Entrepreneurship training programs and mentoring for young people are increasingly among the activities of the more development-oriented NGOs. In order to address the financial barriers affecting youth, several options are recommended.

Allowing alternative forms of credit (warehouses receipts and liens against future harvests) can ease the credit market. Access to finance can also be addressed by linking agricultural credit to extension services. Other possibilities lay in contract arrangements, especially those offering pre-financing of inputs and assurance of market channels. Use of e-transfers and e-payments is bringing banking services to rural areas, and young people have been quick to adopt this mobile technology for easier access to loans. Other options exist, such as providing loan guarantees to encourage banks to provide agricultural finance. The private sector thus has a pivotal role to play in facilitating access to agricultural finance and markets for young women and men, while also providing an enabling work environment.

African governments will need to re-engage in the formulation and systematic implementation of sound rural development policies and programs that maximize opportunities for young people, strengthen their capacities and facilitate access to productive resources needed to drive broad-based growth in the agriculture sector and rural economy.⁶⁷ It is increasingly acknowledged that youth participation is critical in decision-making and policy dialogue, and policymakers are urged to work with youth to ensure their active participation in policy processes. Revised agricultural policies need to fit the needs and priorities of youth, and for their voices to be heard, youth need to build their capacities for dialogue and negotiations. They need to identify and clearly articulate their policy agenda. This is already beginning to happen within CAADP, where youth have proposed the following:⁶⁸ recognize the

⁶³ FAO 2010

⁶⁴ FAO/CTA/IFAD 2014

⁶⁵ FAO Regional Conference of Africa, 2014

⁶⁶ AGRA Strategic Plan

⁶⁷ FAO, 2014

⁶⁸ FARA Engaging Youth in the Implementation Phase of CAADP Transformation Agenda – Knowledge Information and Skills. Forum for Agricultural Research in Africa (FARA) Regional Workshop Report 2013

youth as a major stakeholder in CAADP processes and create platforms where their voices can be heard; involve youth in the review or reformulation of new policies; facilitate communication, advocacy and networking among youth organizations; establish platforms that bridge the gap between policymakers and youth; and revitalize agriculture at all levels of formal education (primary, secondary and higher education levels).⁶⁹ It is recommended that rural youth be involved in the drafting, implementation, monitoring and evaluation of policies and laws related to agriculture. Youth-focused policies should be part of overall development policies of a country, and must recognize the diversity or heterogeneity of African youth in terms of the economic, social and institutional environments in which they live and work.

Finally, one major challenge faced in writing this chapter was the limited evidence-based data on youth engagement in agricultural production for most of the sub-topics. More importantly, there are few rigorous evaluations of youth issues in sectoral policies and programs. Thus, future research needs to focus on at least the following two areas: 1) How are opportunities for youth engagement with farming or agribusiness affecting young women and men in the different value chains and under what circumstances?; and 2) How are youth policies affecting or modifying youth engagement in agriculture in sub-Saharan African countries, and in particular their overall productivity.

⁶⁹ CAADP

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Chapter 3

Agricultural Entrepreneurship: Transforming African Youth Livelihoods through Agribusiness Development

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KEY MESSAGES

ONE

Agribusiness models that enhance employment creation, social equity and inclusion, and that consider the sustainability of the agrifood system, are more likely to stimulate transformative work for young people while driving sustainable agriculture in Africa.

TWO

Training, financing, and well-developed business infrastructure (including markets, incubation, business networks and policies) is required for successful youth entrepreneurship.

THREE

Gender and other social differences such as age, education, culture and marital status must be considered when designing youth agribusiness models.

FOUR

The full range of agribusiness opportunities (from pre-entrepreneurs to emergent entrepreneurs) must be explored and facilitated to scale to impact so as to meet the diverse needs of young Africans.

FIVE

Global and regional food and trade policies must favor youth agribusinesses by enhancing local and regional trade in agrifood products and services.

Introduction

At an Agribusiness Forum convened by the African Union in 2014, stakeholders from the private sector, governments, development organizations, and donors, as well as representatives of women and youth, met to agree on practical strategies for ensuring inclusiveness of smallholders, women and youth in African agribusiness landscape. The main recommendations coming from the Forum were to increase incentives for these stakeholders, enhance coordination between agribusiness actors, and implement strategies for different types of domestic financing mechanisms for women and youth in agribusiness. These recommendations were further reflected in the subsequent African Union Heads of State Summit, who re-affirmed their commitment to the Comprehensive African Agriculture Development Programme (CAADP), and committed to creating at least 30% more youth employment opportunities in agricultural value chains. It follows that, as different studies have indicated, African countries will need entrepreneurs who will explore new business opportunities in agriculture and other related economic sectors (Anyanwu, 2012; Soucat, Nzau, Elaheebocus, and Cunha-Duarte, 2013).

Unlike in the developed world, where the word 'entrepreneur' is associated with the likes of Mark Zuckerberg, Steve Jobs, or Richard Branson, in Africa a majority of entrepreneurs are found in informal sectors in which, since the 1970, they have made significant contributions to African economies (Hart, 1973). Whether in formal or informal sectors, entrepreneurs are identified by their ability to start a business that either takes advantage of an opportunity in their market or solves specific social problems while creating employment and building wealth. Many definitions of entrepreneurship exist, but for the purpose of this chapter entrepreneurship is defined as the practical application of enterprising qualities, such as initiative, innovation, creativity, and risk-taking into the work environment and using the appropriate skills necessary for success in that environment and culture (Chigunta, 2002; Hart, 1973). An entrepreneur develops an idea into a business plan, and acquires the human, technical, financial and other required resources to bring his/her idea to the market and make profit from it. He/she is alert to profitable opportunities, and often incorporates innovation to remain competitive, diversify, and share the risks involved in starting up and growing an enterprise (Langevang et al., 2015; Reynolds et al., 2002).

The Global Entrepreneurship Monitor (GEM) is a long-term study of entrepreneurship dedicated to furthering the understanding of what it takes to be an entrepreneur and its transformative benefits. According to GEM, entrepreneurs can be classified as: *opportunity entrepreneurs*, who are viewed as being pulled into entrepreneurship based on a perceived opportunity; and *necessity entrepreneurs*, who enter entrepreneurship due to need (unemployment and poverty) and the lack of

other opportunities (Kelley et al., 2011). About two-thirds of entrepreneurially active adults, the majority of which are in developed countries, are voluntarily pursuing an attractive business opportunity, while the other one-third, most of who are in developing countries, are engaged in entrepreneurship because they cannot find any other suitable work (Reynolds, et al., 2002). While both types of entrepreneurs are focused on making profits and addressing specific needs in society, we explore in this chapter how to enable young entrepreneurs to move beyond necessity-driven entrepreneurship, which includes informal micro-businesses with very low success rates, into opportunity-driven entrepreneurship that is supported by the right business infrastructure, innovation, and that captures market and sustainability needs.

There are several reasons why opportunity-driven entrepreneurship is significant to young Africans: with increasing unemployment, there is need for young people to seek out alternative sources of income; self-employment is an option to formal employment; with increasing momentum for innovation in Africa, start-ups and social enterprises are becoming a common place for young innovators; and sustainable agribusinesses will further drive sustainable agriculture on the continent (Juma, 2011; Koira, 2014). As such, the rationale for youth agribusinesses is three-fold: 1) a growing and fast urbanizing African population that increases (and diversifies) food demands; 2) an increasing population of educated young people not finding remunerative formal work and seeking alternative livelihoods; and 3) an increasing need to transform African agriculture so that it remains resilient to changing climate and markets, and contributes to sustainable development (FAO, 2014; Van der Geest, 2010).

These notwithstanding, youth entrepreneurship in agricultural value chains must be foremost understood in the context of systemic barriers that limit young people's access to formal economic opportunities. Particularly in productive agriculture, it is the access to land and related inputs and services that limit youth from pursuing profitable agricultural livelihoods (Bezu and Holden, 2014; Chinsinga and Chasukwa, 2012; Mbowa and Lwanga, 2013). Additionally, youth agribusinesses emerge at a time when global food systems are dominated by the rising market power of a consolidating agribusiness industry, which is influencing most major sub-sectors of agricultural commodities, e.g., grains, livestock feed, and meat and dairy products (FAO, 2012; Filmer, et al., 2014). This trend is being matched by the continued pace of consolidation in the retail grocery sector, consequentially reducing the market negotiation power and competitiveness of smallholder producers and small-scale agribusinesses. Since most young people lack the resources to establish large-scale enterprises, their entry into agribusiness is likely to fall into a category that may

already be uncompetitive and, as a result, experience market marginalization (FAO, 2012; UNEP, 2008).

Knowing that there are few examples of successful small-scale agribusinesses, we highlight here current advancements in the African agribusiness landscape and explore the possibilities of making small-scale agribusinesses profitable for a diverse range of young people. We do so by providing case studies of existing agribusiness models that can be explored and further scaled to impact. We also emphasize in this chapter the need for agribusiness models to move beyond productive agriculture into the wider value chain, enhancing production-to-consumption efficiency and diversity.

This chapter is organized as follows: We first discuss the case for youth agribusiness in Africa and contextualize this in the African entrepreneurship landscape. We then provide a conceptual understanding of the opportunity spaces in African agriculture, and explore these further through the analysis of the agribusiness value chains. The agribusiness ecosystem is then discussed in terms of the enabling factors that will enhance youth entrepreneurship through skills training, financing, markets, gender, technology, collective action and partnerships. We end the chapter by discussing the nature of a favorable policy environment required to drive sustainable youth livelihoods in African agribusiness landscape.

The Case for Youth Agribusinesses in Africa

The transformation of African agriculture through small-scale agribusinesses holds tremendous promise – more than any other economic sector on the continent – both for catalyzing economic growth and creating employment opportunities for youth, and for significantly contributing to poverty reduction and improved social outcomes. Africa is the second fastest growing continent in the world, with 90 million households entering the consumer class by 2011 (McKinsey, 2012). However, economic growth benefits citizens through increased employment income, and the challenge for African states is to create stable and sufficient employment opportunities for their populations. A specific interest in job creation is towards the approximately 11 million youth joining the African labor markets each year, with only a quarter of them finding decent employment. 59% of 20-24 year olds will complete secondary education in 2030 compared to 42% today translating to 137 million youth with secondary education and 12 million with tertiary education by 2030. Yet, more than 70% of the youth currently live on less than USD 2/day, and this condition may worsen if high unemployment rates continue. Even though more educated than previous generations, there is a growing mismatch of skills and current labor markets. There is a need to create jobs for young people and equip them with the right skills for the job market.

At national and regional levels, African governments have to address low agricultural productivity, poverty, food and nutrition insecurity, unequal income distribution, deforestation, and unfair competition (Garrrity, 2004). Food imports and aid have significantly increased since 1974, putting more pressure on economic growth over the past two decades. It is estimated that currently Africa can only feed half of its population (Banson et. al., 2014). Despite progressive policies such as the 2003 Comprehensive African Agricultural Development Programme (CAADP), only 13 countries – Burundi, Burkina Faso, the Democratic Republic of Congo, Ethiopia, Ghana, Guinea,

Madagascar, Malawi, Mali, Niger, Senegal, Zambia, and Zimbabwe – have met the commitment of allocating at least 10% of their national budgets to agricultural development in one or more years since 2003 (Brooks et. al., 2013). Adding to these challenges is the situation created by Africa's rapidly growing urban population, leading to a high market demand for food and other agriculture-based products. There is a rising middle class demanding more nutritious, varied and processed foods, creating new market demands and generating new entrepreneurial opportunities in the expanding agribusiness value chain. However, it is thought that urbanization may lead to a strain on the capacity of rural economies as better educated workers migrate to urban areas in search of decent work (Bennell, 2007; IFAD and ILO, 2012).

Africa is a net exporter of certain agricultural commodities – especially cash crops and horticultural produce – to the rest of the world. As food prices rise internationally, global food markets can become an important additional source of income for African farmers that are producing staple foods. However, providing Africa with nutritious and adequate food, and improving the social and economic welfare of Africans, must come first. While 49% of all Africans work in agriculture, contributing a quarter of the continent's overall GDP, most of the employment in this sector remains vulnerable, and involves high risk and low pay (Brooks, et al., 2013; McKinsey, 2012).

It is therefore important we acknowledge the contributions of smallholder agriculture, especially household level enterprises, to informal agricultural economies. By advancing their capacity, they will make significant contributions to the overall African economy and other social outcomes (Proctor and Lucchesi, 2012). To do so, we need to facilitate access to relevant technologies that reduce the high transaction costs and increase the yields of smallholder farmers, while at the

Box 3.1 The Balmed Blockfarming© System: An innovative and inclusive land-use model

Access to land is one of the key challenges facing youth interested in agriculture. The Balmed Blockfarming© System is an innovative and inclusive land use model that has served as model for other companies in West Africa working to increase youth access to agricultural land.

Balmed Holdings Ltd. is focused on the cocoa and coffee sectors in Sierra Leone. The company not only buys and sells cocoa and coffee, but also works to transfer knowledge and skills to smallholder farmers, and especially to the youth, in order to improve living standards in rural areas. Balmed started in 2002 as a trading company in Kono District. From the beginning it has been working closely with smallholder farmers, who are members of cooperatives that work to obtain fair input and output prices and infrastructure improvements. The company currently works with over 13,000 registered and certified cocoa and coffee farmers in the country. The majority of these producers participate in international certification programs, such as the Rainforest Alliance, Fairtrade, and UTZ.

A key operating principle of the company's business model is 'inclusiveness', i.e., "...business models are considered to be more inclusive if they involve close working partnerships with local landholders and operators, and if they share value among the partners. In other words, for a business model to be inclusive it must not only involve a collaborative relationship, but also fair and equitable terms." (Vermeulen and Cotula, 2010)

The Balmed Blockfarming© System is a land-use model that features a fair and long-term partnership between landowners, land users and Balmed Holding. The company shoulders the initial risks by investing in the development of cocoa farms to make them more productive. The Balmed Blockfarming© System is designed as a shareholder system, in which youths and landowners are direct shareholders and Balmed is creating returns for them according to their shares in the plantations. The proceeds from the harvested cocoa are shared using a simple formula: 60% (at the farm gate) of the international price of the day is broken down into three shares: one-third goes to the landowner; one-third to the relevant farmer cooperative; and one-third to the processing center (from which 2% is allocated for management). The remaining 40% comprises the trade margin for the company.

Balmed has established 500 hectares of organic cocoa plantations in Sierra Leone under the fair and sustainable land-lease model and has engaged 927 youths and 186 landowners in the system. Thirty percent of the youth farmers are women. The company is currently expanding the plantations to 5,000 hectares.

This innovative approach is widely considered to be equitable, sustainable and socially responsible. Balmed contributes to the development of farming practices in the cocoa sector, and is leading the way in centralized post-harvest cocoa processing, certification, the transfer of knowledge through adult literacy centers, the implementation of the Blockfarming© model, produce traceability through the SAP system, and the introduction of a cashless buying system. Emissions by Sector in Africa.

same time address price controls and poor infrastructure (Banson, et al., 2014). It will be profoundly beneficial if smallholder agriculture and informal sector, rural-based enterprises can be supported in ways that reduce risks, increase profits, and sustain those already involved while expanding to new actors, markets, products and services. Moreover, the focus on African agribusiness should aim to facilitate smallholder farmer diversification along the value chain as a risk management strategy. This will become even more important as the effects of climate change become ever more evident on African agriculture and increase the vulnerability of rural communities. Hence, transitioning to adaptive and resilient farming techniques, while at the same time increasing productivity and overall incomes from agriculture, will require a new generation of farmers with new skills and flexibility in adapting to change (FAO, 2014).

Young people, who are dynamic and better educated than their parents' generation, but also struggling to find decent work in most economic sectors, should be considered prime candidates for the required cadre of human capital needed to move African agriculture forward. Yet, to most of them, agribusiness is seen as the purview of large-scale, commercial agricultural enterprises. We present in this chapter the case for small-scale agribusiness opportunities for young people – businesses that require minimal start-up capital, can be operated alongside other activities such as formal work or schooling, and that require little in the way of resources as they span across the agrifood value chain, including research, providing information, input supplies, marketing, and processing among others (Proctor and Lucchesi, 2012; The Montpellier Panel, 2014).

Challenges of Addressing Youth Participation in Agriculture

Complex and difficult challenges, such as a lack of governance and a lack of access to land and other resources, constrain the effective intervention of public-private partnership programs in addressing youth unemployment and underemployment in agriculture in sub-Saharan Africa. It is vital to facilitate youth participation and commitment in agriculture to ultimately deal with the chronic problems of domestic food insecurity and rural poverty. Some of the key challenges identified are discussed below.

National governments policies and commitments – Although governments of sub-Saharan countries have formulated and approved national policies for agricultural development, serious weakness are common in the implementation of policies on youth employment, and in the allocation of resources to implement them.

A country specific decent work program and an active labor market policy are important prerequisites for concrete youth employment programs, where a focus

on the private sector led agricultural development needs to be clearly spelled out.

Conflict and post-conflict countries in SSA are particularly challenging for private sector-led development projects, as the risk for investment is higher, or at least perceived to be higher. A stronger presence of development partners is required for effective implementation. While in Liberia and Sierra Leone after the war, the ILO organized the development of youth employment policies, with the establishment of a National Bureau for Employment Services in the Ministry of Labour (ILO 2010), employment in agricultural activities were neglected. It took joint initiatives with sector ministries – the ministry of agriculture and the ministry of industries, to define clear agricultural strategies targeting youth.

Specific funding instruments can also provide an incentive for companies to invest in development areas – youth employment schemes and competitive grants for private companies are patronized by companies,

Box 3.2 Promoting Agro-Social Innovation

Fabik Integrated Farms is a leading commercial farm in Guinea. It operates on 75 hectares of pristine agricultural land in the Kindia region – the fruit and vegetable capital of Guinea. Hadja M'Ballou Fofana founded the farm in 2000. Her vision was to create an integrated farming enterprise around which would gravitate independent farmers that have improved their livelihoods by improving themselves, their farming practices, and their communities.

Hadja M'Ballou spent the first 10 years building the foundation of what would later become a unique example of rural development in Guinea and West Africa. To organize, structure, educate, and support the women and youth within and around the farm, Hadja M'Ballou established the Fabik Cooperative of Farmers. This Cooperative, through contributions from its members, created the first rural bank in the region (a microfinance institution), a commercial aggregation (??) station (for traders and transporters), a storage facility (for inputs), and bought a tractor for transporting produce from farm to market. Through the Cooperative's efforts, more than 20,000 people across the region have so far gained access to practical training, farming inputs, more affordable financing, and new markets for their produce.

Fabik's partnership with the Guinean Institute of Research and Agronomy led to the testing of several promising varieties of bananas, cassava, rice, maize, and beans from different parts of Africa and beyond. The goal of the experimental trials was to identify which varieties were more resistant to prevalent diseases and were sufficiently productive for commercialization in the region. One of the highlights of this partnership was the introduction to the Guinean farmers market of the PHIA23 banana hybrid. This cultivar is resistant to the fungal disease cercosporiosis, which is common in the area, and yields more than the local varieties. It also produces tasty fruit that is much appreciated by traders and consumers. In 2013, the Fabik Cooperative trained more than 1,000 farmers on how to grow the new hybrid and distributed more than 1 million seeds of PHIA23 to farmers.

As a promoter of social innovation, the farm also hosts The Dare To Innovate (DTI) Center for Excellence in Social Entrepreneurship and the yearly DTI Conference and Competition to identify and engage a new generation of socially minded individuals and entrepreneurs who share ideas, knowledge and resources to catalyze a movement of social entrepreneurship across Guinea and Africa.

if the administrative hurdles do not outweigh the incentive of additional funding and/or risk sharing.

Access to agricultural lands and inputs – Easy and long-term access to land for agriculture is highly important for young farmers to improve their livelihoods. Agricultural land is not only vital for agricultural production but also to facilitate youths' commitment to agriculture and to contribute to income generation, domestic food security and poverty reduction. Young men and women face complex challenges in acquiring land for farming. For example, the mechanism for acquiring land for agriculture is through inheritance. Often it takes a long time to inherit family land because of increased life expectancy. Other crucial challenges include: i) in some African traditions, young people must wait until adulthood before they qualify to own family land (in parts of Africa it is a taboo for children to own land when their parents are still alive); ii) youth who earn low wages cannot afford to purchase land that is highly priced; iii) young men and women do not have access to capital or loans to purchase agricultural land; iv) youths lack knowledge of existing land tenure systems in their communities, as well as procedures for land acquisition, registration and taxation measures; and v) youth land rights are usually not included in national land policies and legal instruments.

A public-private partnership (PPP) initiated and implemented by Balmed Holdings Ltd., a cocoa and coffee trading company in Sierra Leone, showcases options for supporting youth in accessing land for starting up agricultural businesses (see Box 3.1).

Access to financial resources and inputs – Finance and inputs are fundamental to agricultural production activities and young people must have access to adequate finance and inputs to engage successfully in agriculture. Finance is needed to cover the costs of planting materials, fertilizer and other inputs supplies, services, and agricultural insurance. Youths are confronted with major challenges in their efforts to access finance for agriculture because of their inability to provide the required collateral to secure credit and their limited experience with financial services. Today, many Micro-Finance Institutions serve youths above the age of 18, but this group of farmers is rarely recognized as a real client group, and only a few products are designed to respond to their specific and unique needs. Many financial service providers offer loans to young people, and demand excessive interest rates to mitigate high existing and perceived risks. They also request loan guarantees such as formal land deeds, regular employment that provides steady income, personal guarantors and other informal guarantees, which the youth do not possess and therefore cannot deliver. Furthermore, because young people lack financial capacity, they are often considered a high financial risk category. The MasterCard Foundation (2013) quotes a

survey by Kenya's FinAccess 2009 stating that 45.5% of those in the 18 to 24 age range are excluded from any form of financial access, making them the most underserved client segment.

Development programs can intervene at several levels: providing bank guarantees, or build capacities for youth entrepreneurs, e.g., in business plan writing, management and administrative issues, linkages to business incubators, and accelerators for exchange and networking. Financial literacy courses and farmer business schools help farmers to assess the viability of financial options for their agricultural ventures. The Farmer Business School model (GIZ) is explained in Figure 3.5.

Access to improved technologies – Although considerable agricultural research has produced a wide range of improved technologies for increased agricultural production in sub-Saharan Africa, young people have limited access to these technologies. In many rural communities, the agricultural extension services are weak and the interactions between researchers and young farmers are constrained by institutional and organizational difficulties. Consequently, youths engaged in agriculture do not derive the full benefits of adopting new improved technologies. Public-private partnership programs must therefore address this challenge of facilitating youth access to improved agricultural technologies to promote agricultural production and productivity by young farmers. How access to technology can change an individual's life is shown in selected examples below, e.g., from improved planting material for tree crops, inputs for beekeepers, etc.

The work of Hadja M'Ballou Fofana in Guinea (see Box 3.2) shows the importance of improved planting material and an innovative attitude. The cooperative she established, known as the *Fabik Cooperative of Farmers*, entered into partnership with agricultural researchers to train farmers and disseminate improved banana varieties, thus increasing farmer incomes.

Access to knowledge and information – Knowledge and information about best agricultural practices and markets is very important in promoting production and entrepreneurial skills. In most countries in sub-Saharan Africa, youths have limited access to information and knowledge relevant to their agricultural production environments. Furthermore, current agricultural education and training programs for youths fail to sufficiently include agricultural entrepreneurial skills that are adapted to the needs of rural communities and markets. Developing mechanisms and offering platforms to improve the effective dissemination of relevant agricultural knowledge and information is therefore a major challenge for public-private partnership programs in agriculture.

African Entrepreneurship Landscape

Sub-Saharan Africa exhibits high levels of entrepreneurial activity rates – one of the highest in the world – mostly motivated by necessity and survival strategies (Herrington and Kelley, 2012). Most of the entrepreneurs are in the informal sector and earn low and insecure wages that often go towards maintaining the family before they can embark on concrete plans for wealth creation (Filmer, et al., 2014). With such observations, youth entrepreneurship is unlikely to be a panacea for solving the unemployment problem, but it can be “a part of the response by targeting those opportunities that present best chance of success, provide sufficient support to allow youth to start businesses outside of low entry barrier but high competition sectors, and provide integrated packages of complementary support rather than one-shot instruments” (EU/OECD, 2012). Especially because nearly a quarter of the 12 million youth joining the labor force each year are being employed, entrepreneurship can intervene to address the problems associated with prolonged unemployment by offering an alternative livelihood source in agribusiness value chains or in the professionalization of agriculture, and hence accelerating opportunities in the formal agrifood sector (Anyanwu, 2013; Sumberg and Okali, 2013). As formal labor markets shrink, government, development organizations and the private sector are increasing their support towards offering training, access to micro-credit, technology and other resources that enable young people to become successful entrepreneurs (IFAD, 2011). Analyzing the extent to which these need to be scaled up and promoted if we are to achieve real transformation of employment in the agriculture sector is the focus of this chapter.

It is increasingly accepted that youth entrepreneurship presents alternatives to the organization of work and a new perspective on labor markets (Chigunta, Schnurr, James-Wilson and Torres, 2005). Entrepreneurs may not have been trained formally, but they have an instinct for innovation and economic opportunism. With a business environment that enables access to financing, relevant technical and business skills, better links to markets for individuals and groups, and a favorable policy environment, this entrepreneurial spirit can be turned into businesses, and eventually sustainable youth livelihoods (Chigunta, et al., 2005). In addition, rather than looking at the mere attitude change and making agriculture attractive to young people, youth entrepreneurship brings to the fore the significance of scale and impact of young people on the agrifood sector (Sumberg and Okali, 2013). Given the small-scale nature of most of African agriculture, there is potential to increase the number of young people actively transforming subsistence farms into commercial enterprises and increasing opportunities for off-farm and farm-based value-addition agribusinesses. The impact of this is far-reaching

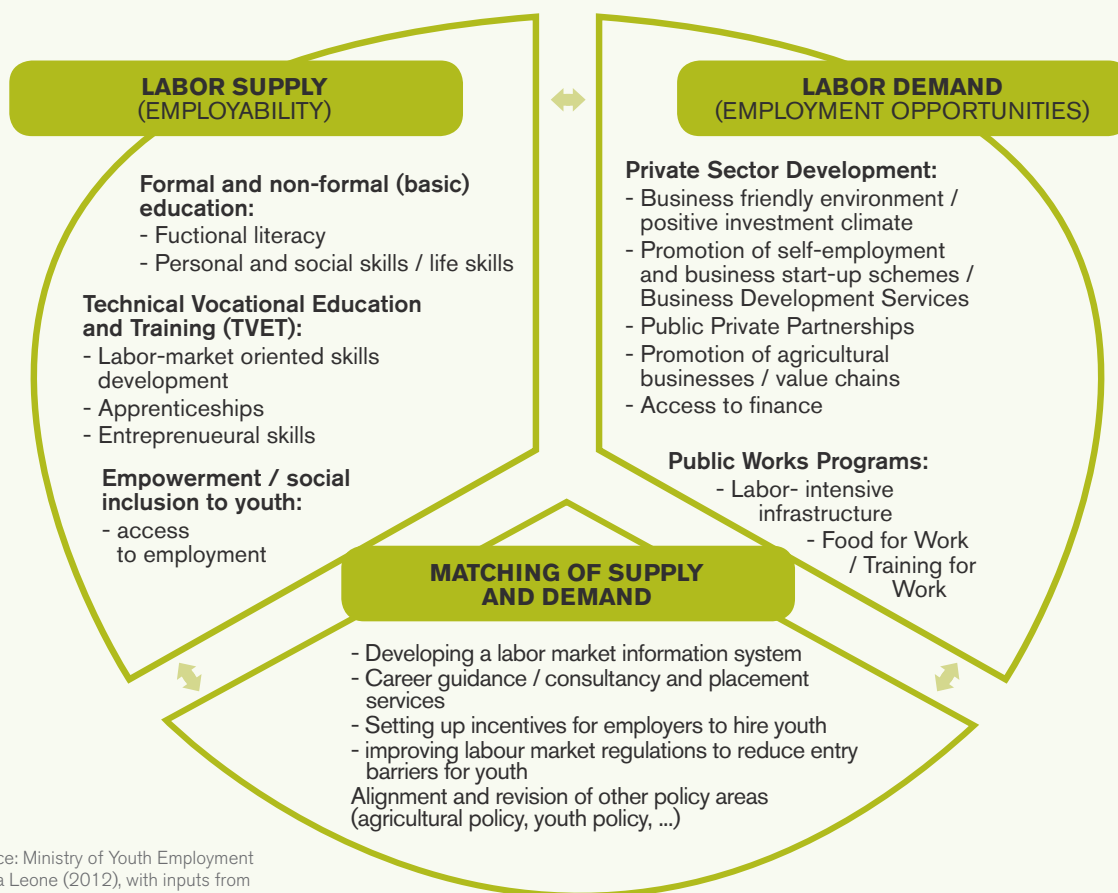
considering the diversity of young people in terms of their age, gender, locality, and education levels. Importantly, we emphasize the recommendations made by The Montpellier Panel on youth agribusinesses in Africa:

- Ensure that young entrepreneurs have better access to markets to take advantage of the opportunities arising along the agribusiness value chain;
- Support youth enterprise development through training, incubation, mentoring, business networks and associations;
- Support agribusiness models with research, particularly comprehensive market assessments and value chain analyses, to ensure proper matching of youth needs with economic opportunities;
- Build an agribusiness ecosystem that includes advances in technology, opportunities for diversification, and higher and tertiary training on technical and business skills;
- Address gender differences, and especially enable more female youth to participate in agribusiness;
- Engender innovative and sustainable financing mechanisms for different categories of entrepreneurs and at different levels of the agribusiness value chains;
- Facilitate inclusive partnerships that consider the differentiated capacities of young entrepreneurs and promoting chain champions; and
- Support an enabling political environment, including infrastructure development, economic policies, relevant institutions and trade agreements.

The concept of youth employment – As described in most strategies, increasing youth employment involves a three-pillar approach, as illustrated in Figure 3.1: labor supply, labor demand, and matching or facilitating tasks. In the Opportunities for Youth Employment (OYE) project, the Netherlands Development Organization (SNV), with funding from The MasterCard Foundation, framed these terms around ‘push, match and pull’ elements for supporting young people to enter the labor market.

There are various projects facilitating youth employment in agriculture-based economies – for example crop production, livestock, processing of agricultural goods, and green technology.

Figure 3.1 Strategic areas for youth employment



Organizations using these approaches include GIZ, UNDP, SNV, and the faith-based Salesians of Don Bosco⁷. Key aspects are the right mix of skills development for youth entrepreneurs (job supply), private sector promotion (job demand), and facilitation between demand and supply of jobs.

- On the job demand side, the private sector pull is key to unleashing employment potential.
- On the job supply side, technical vocational training or other forms of formal or non-formal

skills development play a key role in creating the right skills mix to match the demand side. The more involved private companies get in training measures, the more tailored it can be to their needs.

- The role of government and development partners is mainly in the match-making, e.g., with labor market information systems, career guidance and placement services, incentive schemes for employment creation, and other policy and regulatory tasks

Analyzing 'Opportunity Spaces' in African Agribusiness

For entrepreneurship to lead to economic independence, and ultimately to sustainable youth livelihoods, it must generate sufficient income in the

present and show progression to the improvement of the well being of the individuals and their society (Chigunta, 2002). This requires analysis of not just

⁷ The Salesians of Don Bosco is a catholic missionary congregation focusing entirely on youth empowerment and capacity building. They are represented worldwide. In Ghana they run vocational training centers, including agribusiness trainings. There they also developed a youth entrepreneurship program called 'foster youth association', providing training, coaching and startup lending to several hundred youth.

the economic opportunities available to young people, but also of the circumstances that influence their exploitation of such opportunities. These 'opportunity spaces' are defined in academia as "the spatial and temporal distribution of the universe of more or less viable (work) options that a young person may exploit as he/she attempts to establish an independent life" (Sumberg and Okali, 2013). More simply put, entrepreneurial opportunities in agriculture are shaped mainly by the quality of natural resources (land and water) available and access to markets, but also by such social differences as gender, age, class, ethnicity, education, marital status, and cultural norms and expectations.

Entrepreneurship cuts across these factors by introducing innovation, which can reveal new business opportunities and/or improve on existing ones. Innovation allows for livelihood diversification that usually involves a mix of farm and off-farm activities that changes over time. Sumberg and Okali suggest viewing agricultural work opportunities in four broad categories: protective, preventive, promotive, and transformative (Sumberg and Okali, 2013). Following in-depth research with young farmers in Kenya, these categories have been further developed in practical terms as: last resort work options; temporary strategies; side-hustles; and agribusiness strategies that young people pursue to generate alternative livelihoods in the agriculture sector (Mwaura, 2015).

- **Last-resort work options** are those agriculture-based livelihoods that young people pursue as a kind of 'protective' work. These types of work provide relief from immediate deprivation and sometimes can be part of the broader social safety net (Sumberg, et al., 2014). Most last resort work options are in farming and often involve unpaid labor to meet household needs.
- **Temporary work strategies** include 'preventive' work that forestalls deprivation (Sumberg, et al., 2014). When stuck between school and formal work, young people may engage in farming activities with an intention of raising quick income to meet an immediate need, such as providing for their families, paying school fees, etc. Some of those engaging in temporary agricultural activities might be in school, or be involved in other household work, especially if they happen to be young married women.
- **Side-hustles and agribusinesses** fall in the 'promotive' and 'transformative' categories of work, which allows real incomes and capabilities to be enhanced and the accumulation of capital. Side-hustle enterprises are those established with an intention of supplementing one's income while

maintaining full-time off-farm work. Side-hustles can be attractive for young entrepreneurs because they provide a transition into self-employment while completing their education or working in paid employment. They can also provide a good opportunity to gain valuable hands-on experience of running a business on a small scale (Brooks, et al., 2013; EU/OECD, 2012).

- **Full-time agribusinesses** on the other hand, are sometimes registered small- to medium-scale enterprises characterized by innovation, financing and other business infrastructure. These businesses are considered 'transformative' when they address such social issues as gender equity, personal development, and job-guarantee schemes (Sumberg, et al., 2014). They often operate on newly leased, inherited or purchased land, and can also include enterprises along the agriculture value chain, such as in processing, transport, service provision, and retailing, among others. This sort of agribusiness involves high levels of innovation, partnerships, and specialization, as well as a professional approach to agriculture that allows for diversification into off-farm work opportunities).

Last resort and temporary work opportunities are seen as 'petty trade' (Sumberg and Okali, 2013) or 'poverty jobs' (Muyanga, 2013) – they comprise the necessity-driven entrepreneurship common in rural Africa. While most youth enterprises fall into this category, at least at the start-up stage, it is the inclusion of innovation, new market opportunities, risk-taking, and the creation of decent jobs that will make a significant difference moving forward to promotive-transformative work opportunities (Chigunta, 2002; Sumberg and Okali, 2013).

Side-hustles and full-time agribusinesses are opportunity-driven enterprises that have the potential to grow, create jobs, and diversify along the value chain and in other economic sectors. At this level, young people are more willing and confident to take risks, invest in research and new technologies, and diversify services and products, while at the same time contribute significantly to policy changes required to make the agrifood landscape more socially inclusive (Bingen, Serrano and Howard, 2003; Chigunta, 2007).

The emphasis of governments, donors, and private sector organizations should be to increase promotive-transformative opportunities while improving the conditions of those already doing protective-preventive work. With the right support, a thriving entrepreneurial environment can be created for youth and women who have entrepreneurial spirit and skills, energy and ambition (The Montpellier Panel, 2014).

Agribusiness Value Chain Analysis

It is important that we invest in designing agribusiness value chains that will deliver greater value to young farmers, reduce risks, and increase their resilience. Value chain analysis is about understanding the interactions of many actors – from primary actors who are involved in input supply, production, processing, storage, wholesale and retail, as well as consumption, to secondary actors involved in support services such as transport, brokering, and service processing (Koira, 2014). As illustrated in Figure 3.2, the agrifood system encompasses the value chains for different agricultural services as well as a set of interlinked activities, including agricultural input production and distribution, farm production, raw products assembly, processing, and marketing (The Montpellier Panel, 2014; Koira, 2014). There are several factors to consider when analyzing the agribusiness value chains for youth opportunities (Making Cents International, 2010). To start with, the success of any agribusiness depends on the market. Before embarking on youth entrepreneurship programs, value chain analysis is required to reveal market trends, opportunities, and constraints; to show which markets are expanding or stagnating; to highlight political, cultural, social, and economic conditions; and to identify key market players. Second, we must employ comprehensive and broad analyses to account for the barriers and opportunities that young people face in the political, cultural, economic, and social contexts in which they

live. Third, agribusiness models should be designed to reflect the diversity of young people, including their specific needs, capacities, experiences, access to resources, and the interests of their potential clients. Finally, young people should participate in value chain analysis so as to build their capacity to read and analyze markets independently once they have moved into their own enterprises (Making Cents International, 2010).

By adding value to preliminary agricultural products, we create a value chain that combines products with other resources, such as tools, manpower, knowledge, skills, other raw materials or other preliminary products and services. As agricultural products pass through several stages, their value increases, based on the technological, institutional, and market capabilities available. Young entrepreneurs can target opportunities in the agribusiness value chain at three different levels:

- They can invest in **upgrading value chains**, which involves moving value chains in a different direction, such as towards new customers, adding operations, or increasing efficiency (The Montpellier Panel, 2014). Some of the activities to upgrade a value chain include developing novel breeding and agronomic practices; building infrastructure; establishing agro-dealer shops; stimulating micro-credit and micro-insurance

Figure 3.2 An illustration of the range of entrepreneurial opportunities in the agribusiness value chain



Source: The Montpellier Panel, 2014

schemes; and developing village-level micro-processing facilities such as milling, shelling, packaging, among others.

- Opportunities exist for deepening the value chains by addressing gaps such as unmet market demands or seeking opportunities for vertical and horizontal integration, greater specialization and expansion of services (see Box). Some of the activities to enable this deepening could include providing opportunities for fragmented producers; start-ups for agricultural information systems; small-scale transport
- There exists opportunities in expanding the value chains, which involve the growth of national and regional trade in agrifood products for the urban retail and supermarket chains; establishing joint ventures that share risk; and investing in commodity exchanges, among others.

Box 3.3 Opportunities for Youth Employment (OYE)

The MasterCard Foundation is supporting the project Opportunities for Youth Employment (OYE), which is being implemented by SNV Netherlands. SNV is a well-established development organization that alleviates poverty in developing countries by increasing employment opportunities in growth sectors of local economies. The OYE project builds on identified value chains or commodities in these sectors that have proven potential for youth employment or self-employment, such as biogas, improved cook stoves, solar lamps in the renewable energy sector, and oilseeds, rice, dairy, beef, and horticulture in the agricultural sector.

The OYE model is framed around 'push, match and pull' elements for supporting young people to enter the labor market. The 'push' factor involves developing the skills and competencies of young people through apprenticeships and online courses. The 'match' element involves linking trained young people to market opportunities for employment or business development. And, the 'pull' factor involves working within growth sectors that have a significant potential for job creation and new youth led enterprise development.

The project involves technical training institutions in order to provide youth with practical and theoretical training on farming practices, record keeping, business planning, ICT skills, market analysis, critical thinking, and decision-making. When youth participants complete their training, they have access to post-skills development through apprenticeships with local businesses, mentoring through companies and online job centers, and career and business guidance through mobile phone services.

SNV works in partnership with national governments, such as the Ministry of Youth and ICT in Rwanda, with local businesses, such as Amarula Farms and New Horizons in Mozambique, and with financial service providers, such as FINCA (Foundation for International Community Assistance) in Tanzania and UMUTANGUHA Microfinance in Rwanda. In all three countries, SNV has signed contracts with private companies that have expressed their commitment to training, mentorship, internships, and self-employment of rural youth in various agricultural subsectors, such as livestock, organic horticulture, rice production, and edible oilseeds, among others.

Private companies participating in the OYE project appreciate the practical approach and relevance to market needs. Moreover, OYE's basic life skills training and post-training coaching effectively contributes to the trustworthiness of rural youth, which removes negative perceptions about youth and encourages the private sector to hire young people. In Tanzania and Mozambique, the project is linking trained young people to agribusinesses, including producers, buyers and processors. These youth are eventually employed or self-employed, shifting their traditional agricultural practices to commercial farming and managing small farming enterprises. In Rwanda and Tanzania, young people engaged in the project gain hands-on training to become solar energy dealers, selling solar lamp kits within their communities.

The vast majority of youth engaged in the project are already diversifying their options and choices, going beyond survival strategies. These youth gain motivation through the combination of a practical skills training with a concrete opportunity for employment or self-employment, and in many cases they apply their acquired skills to additional economic activities outside of the agriculture and renewable energy sectors. Beyond finding their pathways in one specific job, youth become empowered through self-confidence building, technical skills development, and market exposure that they can apply to improve their economic performance and their livelihoods.

Box 3.4 Supply chain management by Olam International

Olam International Limited is a global integrated supply chain manager, processor, and trader of soft commodities, such as cashew nuts. Côte d'Ivoire currently produces an estimated 600,000 tons of raw cashew nuts per year, which makes it the biggest cashew producer in Africa and the second largest in the world. Some of the obstacles to the development of a flourishing African cashew market are not specific to that sector, but rather lie in the structure of the economies and business environments of the procuring countries.

Nevertheless, in stabilizing the African cashew sector, two main challenges must be addressed by the private sector: low local value addition through cashew processing and farmers' insufficient knowledge of good agricultural practices. In-country processing capacity can be expanded through rational investments, provided that the supply of raw material is secured through enhanced farming practices, education and access to market information. Also, in order to secure their supply of raw cashew nuts (RCN) and to increase business margins, Olam needs to eliminate intermediaries and directly engage cashew farmers through innovative and sustainable cashew grower programs that aim at improving farmer livelihoods and local communities.

Olam-Ivoire is a leading RCN exporter and a pioneering processor of cashew nuts in Côte d'Ivoire. Olam works along the entire value chain – from buying RCN at the farm gate to shipping the processed nuts to their end buyers. The processing factory in Bouaké can handle 30,000 tons of RCN per year. It is the biggest and most modern cashew-processing factory in Africa.

Within the framework of a multi-stakeholder public-private partnership – the African Cashew Initiative (ACI) – Olam-Ivoire has developed tailor-made programs for cashew farmers supplying nuts to their factories. One program is focused on a fully traceable, organic supply chain, and initially involved 226 villages and 12,000 farmers who supplied 4,922 tons of cashews. Now, 3 years later, Olam receives 15,000 tons of RCN from 21,492 farmers in 325 villages through this supply chain.

Another program, called the Sustainable Cashew Grower's Program (SCGP), works to help individual farmers organize into farmer groups and supply their produce directly to the processor. Through this direct linkage program, Olam is able to provide targeted training and reduce the number of intermediaries eating into the net incomes of cashew farmers. Since strict international requirements and standards need to be complied with, a close supply chain linkage is of utmost importance to secure consistent and high-quality supplies of raw cashew nuts.

Strategy and activities

Olam's aim has been to increase the quantity and quality of raw cashew nuts being produced and to ensure the supply of quality nuts to the processor. Participating farmers were trained to improve their production quality and quantity to the required levels and a premium of \$185,000 was paid to about 12,500 producers to reward their efforts during 2014 season.

The ACI partnership developed and implemented a training program focused on establishing and maintaining cashew plantations, adoption of improved harvesting and post-harvest technologies, and RCN-quality assessment. As many as 100 extension officers (from the public and private sectors, as well as NGOs) and about 20,000 farmers were trained to implement Good Agricultural Practices (GAP) for cashew farming. Local producers' representatives (village buying committees) developed their capacities in various aspects of cashew production, handling and marketing.

These committees act as conduits and service providers in the out-grower scheme. This capacity development was accompanied by improvements in infrastructure and services. Drying yards, jute bags and transportation were provided and eleven village storage facilities were restored. About 10,000 farmers are now organized for bulk selling and sustainably linked to Olam through this program.

Achievements

The ACI project has so far benefited about 20,000 cashew producers (15% are women) in the southwestern part of the Bandama Valley (west of Bouaké) and linked them to Olam's new processing plant. In 2014, they supplied 9,500 tons of fully traceable cashews of the necessary quality and at the desired time.

Based on a sample of 200 producers, average yields increased in the initial year of the project (2013) by 16 kg/ha (3.5%) (GIZ). Productivity is expected to continue rising in the years to come. With improved planting materials, yields can be doubled, as results from the African Cashew Initiative have shown in their annual yield surveys. In addition, Olam has seen a notable improvement in the quality of the raw cashew nuts being produced.

The higher yields and the premium for improved quality associated with ACI activities has, on average, increased the incomes by USD 30 per year for at least 12,500 producers. Taking into consideration anticipated future yield growth and quality improvements, an increase in annual income of several hundred dollars per farmer is very realistic expectation.

Box 3.5 Deepening the value chain: Syecomp Limited, Ghana

Syecomp is a geospatial startup company providing Geographic Information Systems (GIS)-based survey and mapping services, and conducts agricultural research and knowledge management for farmers and a range of development organizations in Ghana along the agribusiness value chain. The five-year old company was established by a team of young professionals below 35 years after completing university education with an aim of creating alternative livelihood opportunities alongside their formal work in different sectors. As of 2015, the company employs one fulltime staff and hires a team of six early career professionals on a part-time basis.

Among the services provided by the company: GIS Applications and Geospatial Data Capture and Analysis; Mapping Techniques; Satellite Image Processing Knowledge (Biomass Maps, Evapotranspiration, NDVI, Land-Use, Weather forecasting, Cropping intensity, Energy Balance, et al.); and Exceptional Communication, Reporting and Data Presentation. The company works closely with individual farmers, farmer organizations, value chain cooperatives, export oriented organizations, and international development partners. Some of its activities that deepen the agribusiness value chain include:

- **Value added services through farmland geospatial survey and mapping:** Syecomp promotes the use of mapping to better integrate various actors into modern agricultural supply chains. For increased competitiveness of agricultural produce from Ghana's farmlands, there have to be value additions and strengthening of market potentials of local crop yields to be attractive to foreign markets. Also, to increase competitiveness and minimize poor production planning, Syecomp establishes the spatial locations and concentration of farms; determines the supply base of producing firms and establishes a system for traceability and precision production for the farmers. Presently, Syecomp assists smallholder farmers involved in high value export products, such as pineapple, mango, and cashew, to undertake effective survey and mapping of their farmlands as a requirement of being recognized as organic producers to attain Global GAP certification, thus enhancing their competitiveness on the local and international markets.
- **Feature mapping with advanced geospatial tools:** Syecomp provides a wide range of geospatial mapping activities ranging from input-dealer shop mapping, irrigation site mapping, satellite-support feature mapping, land-use assessment, soil profile mapping across the country for a wide range of public and private institutional clients.
- **Agricultural research and case study development:** The company conducts agricultural research and case study development for local and international agricultural development organizations, including GIZ, CTA, UNDP, and national farmer organizations. They have also diversified into measuring the impact of using ICT tools in agriculture to boost farm productivity and improve livelihoods.
- **Agrihub knowledge space:** In 2014, in collaboration with the Global Youth Innovation Network (GYIN), Syecomp launched the Agrihub Knowledge Space in Accra, a project intended to increase the number of young people engaging in agriculture through information sharing, business incubation, mentoring and networking.

Source: Syecomp Ltd. Company profile <http://syecomp.com/drupal/?q=About> For more information contact Solomon Allavi: sallavi@syecomp.com

The Agribusiness Ecosystem

As illustrated in Figure 3.3, an agribusiness system must also consider all the aspects of an agrifood system (Banson, et al., 2014). If the government increases its budget allocation to agriculture, this would enhance research and development, which in turn would lead to quality agronomic practices and high quality seeds/breeds. This results in high investments in agriculture, including in storage, processing, distribution, branding, and as a result, high returns on investment. Increased profits for farmers would lead to an increase in money circulating in rural agricultural economies and investment in training and acquisition of better agricultural technologies. It would also attract other actors to agriculture; reduce rural-urban migration and increase youth participation in agriculture. Improving agricultural economies also leads

to increased environmental protection as farmers seek resource efficiency and adopt sustainable agricultural practices, which in the long run promote land, soil and human health, and increased productivity per capita. This leads to more savings which can be invested in other value chain activities, such as processing, mechanization, and diversification to off-farm activities such as education, health and other welfare needs of the households and rural economies (Banson, et al., 2014).

Such an interlinked ecosystem is necessary when designing youth agribusiness models. It must also be supported by appropriate skills training, financing, markets, networks, technology, policy, and a consideration of social differences – especially gender.

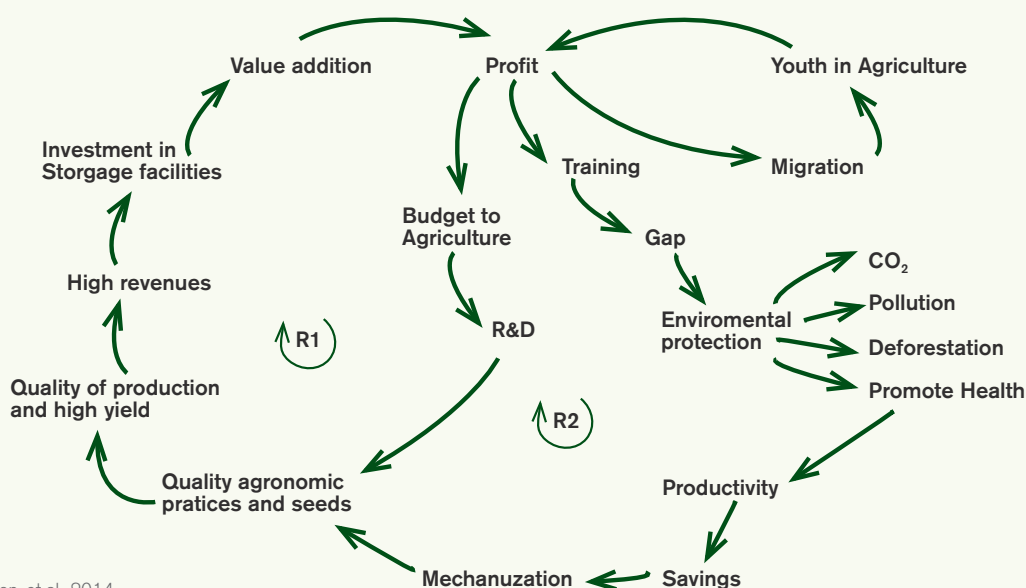
Opportunities for public-private partnerships in promoting youth employment for agricultural development in Africa

Successfully harnessing the wide range of existing opportunities for youth employment in agriculture can play a major role in promoting public-private partnerships (PPPs). Since the 2002 United Nations World Summit on sustainable development, PPPs have increasingly been adopted as an intervention strategy in agricultural development programs in sub-Saharan Africa. Governments in region have recognized the role of PPPs in development initiatives to effectively respond to the development needs of its peoples. Consequently, partnership supports from other sectors,

namely donors, corporate bodies, philanthropists and other individuals to address some of the needed development burden have been highly appreciated and commended.

In a recent study, McKinsey (2014) found that leading companies pursue sustainability (i.e., long-term development-oriented growth) because it has a material financial impact. The research group found strong indications that sustainability policies paid off with better financial performance of companies⁸

Figure 3.3 Agribusiness loop



Source: Banson, et al., 2014

⁸ According to the authors' calculations, an investment of USD 1.00 at the beginning of 1993 in a value-weighted portfolio of high-sustainability companies would have grown to USD 22.60 by the end of 2010, compared with USD 15.40 for the portfolio of low-sustainability companies. The high-sustainability companies also did better with respect to return on assets (34%) and return on equity (16%).

Box 3.6 Strengthening Rural Youth Development through Enterprise (STRYDE)

For most young people in rural communities in East Africa, employment opportunities are scarce. With only 28% of Africa's labor force holding stable wage-paying jobs, and most of those concentrated in urban areas, rural life appears to offer little prospect for advancement. Although analysis shows that rural youth migrate to cities to find better educational and work opportunities, over 70% of the African youth population remains in rural areas. While this demographic situation poses many potential challenges, it also presents the opportunity for youth to lead a wave of economic growth, create innovative enterprises, and revitalize the agricultural sector.

To begin moving in that direction, The MasterCard Foundation has funded TechnoServe to implement the Strengthening Rural Development through Enterprise (STRYDE) program, an initiative designed by TechnoServe to improve the economic status of rural youth ages 18 to 30 in selected countries in East Africa. Founded in 1968, TechnoServe has a strong track record in building individual and community capacity and strengthening market connections. It works with enterprising people in developing countries to build competitive and sustainable farms, businesses and industries.

The STRYDE project was initially a four-year partnership to provide 15,000 disadvantaged young people living in rural areas of Kenya, Uganda and Rwanda with training and 'aftercare' support that would enable them start up or expand agribusinesses, as well as to seek new employment opportunities. In this first phase, the project exceeded its target milestone, as 15,522 young people (46% of whom are women) were trained on skills to start small businesses, secure jobs or explore opportunities in agriculture. Of those trained youth, 78% have engaged in small businesses, obtained employment or have returned to school. More specifically, 13% of youth have found employment and 65% are self-employed. After participating in the first phase of the project, young people increased their incomes by an average of 233%, with 70% now saving regularly – a seven-fold increase from before the training. An independent review of the first phase of the project revealed that the incomes of young participants continued to increase the longer they have been out of the project, indicating a long-term impact that the aftercare component has on the participants' livelihood trajectories.

Based on this success, The MasterCard Foundation has funded a second five-year phase of STRYDE aimed at scaling up impact and expanding the initiative into Tanzania. Phase Two of the project aims to provide 48,000 rural, disadvantaged, and out-of-school youth (half of whom will be women) between the ages of 18 and 24 with the skills to start small businesses, secure formal jobs, or explore opportunities in agriculture.

The STRYDE model features a 12-month comprehensive training and aftercare curriculum that includes three months of 'self-efficacy' training followed by nine-months of 'aftercare'. The self-efficacy training provides the opportunity for youth to develop critical life skills, such as self-awareness, self-esteem, self-confidence, time management, and interpersonal communication. It also includes training on farming as business. The aftercare component supports the transition to employment or enterprise by providing mentorship, access to financial service providers, linkages to employers, and access to land and agricultural inputs.

The STRYDE project also includes a business plan competition component to deepen youth participation and enable the young people to implement their business ideas. In the first phase of the project, these competitions proved to be essential for practical skills development during the aftercare component. This hands-on experience and on-going support enables participants to successfully start and grow an enterprise, secure employment or improve agricultural activities following the training.

A new component of the project is the transfer of the STRYDE model to local partners, including government ministries, vocational training institutes and community-based organizations. This ensures the continuity and sustainability of the training model, lowers costs and expands the number of youth participants. Already in the first year of the project, TechnoServe has identified and trained local partners who have started delivering the training.

In each country, about 60% of the targeted beneficiaries will be directly trained through the STRYDE project, while 40% will be indirectly trained by partner organizations that have the capacity to adopt and manage the STRYDE curriculum after the project ends.

In 2013, the UN Global Compact found that 84% of 1,000 global CEOs interviewed said that their companies “should lead efforts to define and deliver new goals on global priority issues.” Nevertheless two-thirds of these CEOs believed that this has not happened to a satisfactory degree. Companies see these benefits as they search under circular economies with i) benefits from compliance with regulations and improved reputation, ii) managing rising operating costs, and iii) mitigating supply-chain disruption (McKinsey 2014).

The private sector is the key engine of job creation, accounting for 90% of all jobs in the developing world. But governments play a vital role by ensuring that the conditions are in place for strong private sector-led growth and by alleviating the constraints that hinder the private sector from creating good jobs for development (World Bank, 2012).

Using these pronounced private sector interests we can aggregate opportunities for promoting public private partnerships into the following recognized key sectors:

Increasing market demand and private sector engagement for agricultural development –

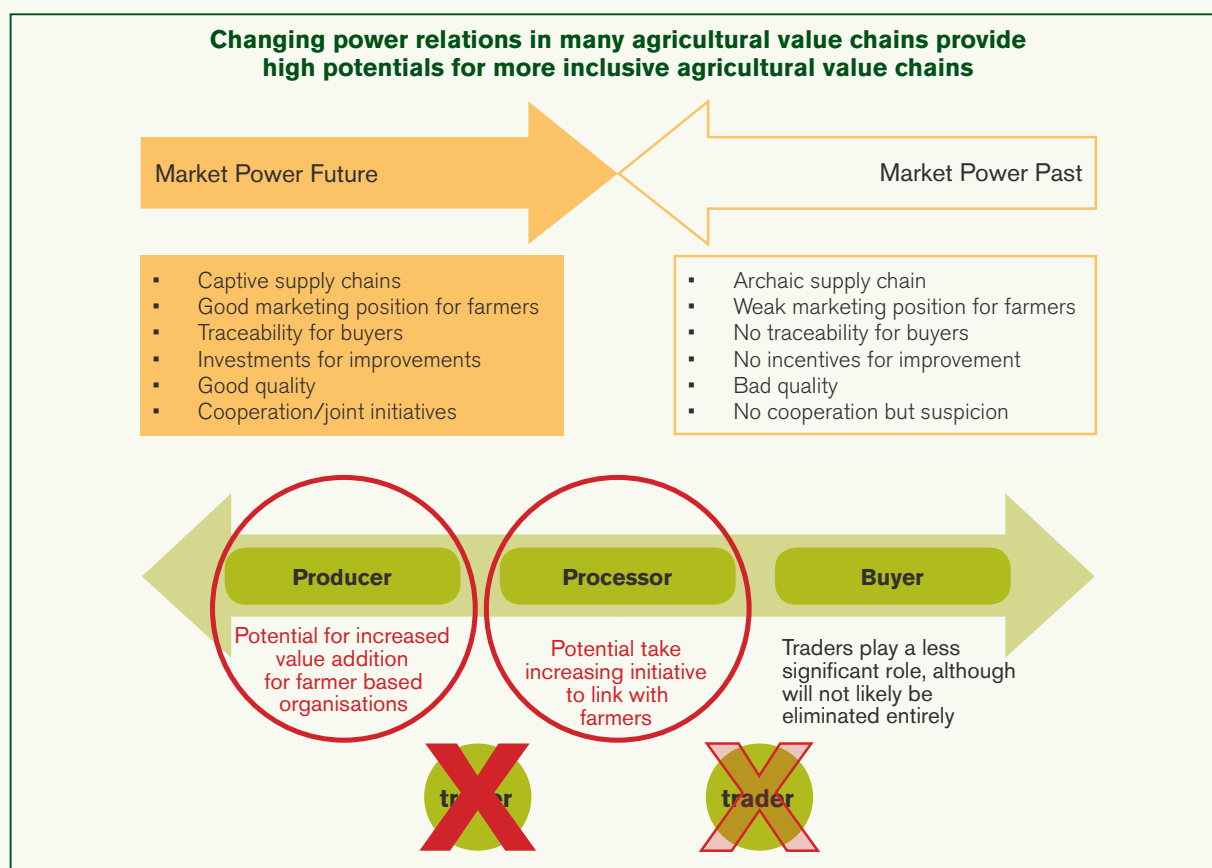
Africa's real annual GDP growth rate in the last 10 years averaged 6%, making it the third fastest growing region

worldwide (IFC, 2014). Changing power relations in agricultural markets provide high potential for a more inclusive business model. Previously, the supply of agricultural produce exceeded demand, resulting in an unfavorable marketing position for farmers.

Furthermore, traceability and quality incentives were hardly applied. Due to the growing population, urbanization and change in dietary habits, there is a growing demand for adequate food supplies. In a market evolving towards a supply driven model, there is potential for producers and their organizations to increase the value of production and trading functions.

Figure 3.4 presents how these changing market powers allow innovative inclusive business linkages, with processors and producer organizations in stronger negotiation positions. It is against this background that farming became increasingly prominent, that innovative approaches to farming were adopted, and that farming and processing of agricultural goods became an even more attractive business. Farmer organizations and local processors can limit traders' influence, and make higher margins within a more efficient agriculture supply chain. This is an ideal ground for innovative business models for agricultural production. While previously waiting for the containers to reach the countries of consumption,

Figure 3.4 Changing market powers for more inclusive value chains



Source: African Cashew Initiative, GIZ, FMS

companies now follow the produce at every step – from its place of origin to the company's doorstep. Despite fragmented trade structures, African markets are rapidly modernizing, as consumers increasingly demand product traceability. Market and business linkages between traders, brokers and retailers to local processors and producer groups in African countries are increasingly common, in order to secure a sustainable supply of agricultural products.

Beyond this, input suppliers and retailers based in Africa, are looking out for new market opportunities in Africa's emerging economies. Africa's middle class has become an attractive consumer group that is targeted by international retailers. The population is rapidly growing, with an additional 500 million more people expected by 2030. The top 10 countries account for more than 75% of the overall consumption in Africa – with the largest consumption in South Africa, Egypt and Nigeria. The number of middle-income households is growing, with 50% of all households having discretionary income, and optimistic growth for a further 30% (McKinsey, 2013). New players are joining African food markets. For example, the Dutch retailer Royal Ahold opened sourcing offices in the early 2000s in West Africa. Wal-Mart bought the South African Massmart to target new retail markets in Africa.

In order to tap into new markets, or to secure supply, many more companies discover new business pathways and share risks with governments, development agencies and NGOs, and engage in public-private partnerships. Thus, the young and modernizing economies of Africa provide huge opportunities for young and innovative businesses. To harness these new businesses, many development agencies have special PPP programs on this topic, e.g., the German Federal Ministry for Economic and Development Cooperation (BMZ) through GIZ and DEGs' DeveloPPP Programme, USAID's Global Development Alliance (GDA), DFID's Food Retail Industry Challenge Fund (FRICH) program; the UNDP Growing Inclusive Markets initiative, etc.

Implications of high youth population and labor availability for innovative youth employment and increased economic growth

– Africa is the world's youngest continent. About 50% of its current population is below the age of 19. Researchers refer to the concept of a 'youth bulge', meaning that young people make up a disproportionately large share of the population. A high proportion of working-age persons can have a positive effect on a country's economy, but it can also cause problems and high costs if this population is not able to contribute to economic growth (World Bank, 2012). In sub-Saharan Africa, the number of people aged between 15 and 64, classified as working-age persons, will increase by around 150% by 2050 (GIZ, 2015). Theoretically, sub-Saharan African countries thus

have an abundance of youth labor for employment. However, data indicates that the sub-Saharan Africa region continues to experience major challenges of youth unemployment, under-employment and poverty, especially in the agricultural sector. Although this sector is generally known to have high potential to provide employment opportunities and an environment conducive for income generating employment for youth, countries in the region poorly exploit these opportunities.

The challenge of engaging youth in the agricultural sector remains insufficiently addressed. Unfortunately, only a limited number of young people in sub-Saharan Africa have demonstrated interest in agriculture and a desire to develop careers in the sector.

However, such initiatives in Africa as the Opportunities for Youth Employment (OYE), supported by the MasterCard Foundation (see Box 3.3), and innovative business approaches in global value chains, as demonstrated by Olam International (see Box 3.4), will encourage many more young people to become involved in agriculture.

Capacity development for young agricultural entrepreneurs

– Entrepreneurs need life skills as well as professional skills to fulfill their respective roles in the agriculture supply chain. Demand-driven, practical training sessions are needed, as are 'life demonstrations' and coaching programs, to help increase professional, practical and management skills. Targeted vocational education, formal and informal apprenticeships, and other training programs need to be part of any comprehensive PPP in agricultural value chains, in order to address the missing links between business opportunities and available knowledge of youth in rural areas.

An example for vulnerable groups of youth in post-conflict countries is the Life Skills-based Education Project for Out-of-School Young People, which is led by UNICEF in partnership with ILO and funded by the Government of Japan. The focus of this program is addressing missed educational and employment opportunities by the youth as a result of a history of conflict and instability (ILO, 2010). Also, the Songai – a sustainable agriculture institution in many SSA countries, has trained thousands of young people in their agricultural training centers. Their alumni have established more than 500 farms in West Africa (Koira, 2104).

The Farmer Business School (FBS) and the Strengthening Rural Youth Development through Enterprise (STRYDE) project (see Box 3.6) from the MasterCard Foundation, implemented by TechnoServe, are good examples of how a new generation of young entrepreneurs can position themselves in agricultural markets with innovative production practices, and better and more effective input supply. As a result of

well-targeted support, youths become better agricultural entrepreneurs. They become input and service suppliers, for example developing plant nurseries and providing transport services. They engage in the processing of agricultural products, and work as employees in production and processing.

Inclusive business and structural transformation through value chain development

development – The term ‘inclusive business’ is commonly used in rural and community development literature. Various definitions exist for this concept, but the comprehensive and generally accepted definition is by Endeve (2010) in a study supported by the German Federal Ministry for Economic Cooperation and Development (BMZ): “Inclusive business integrates people living in poverty into the value chain as consumers or producers, thus making a positive contribution to the development of companies, the local population and the environment” (GIZ, 2010). This concept is widely applicable in the agriculture sector, especially in the context of intervention by public-private partnership programs.

The African farming model is described as being in transition. The majority of African farmers are smallholder subsistence farmers with some cash crops. These farming systems are not viable as a good source of income and through inheritance this becomes even worse. Because of the generally higher levels of education achieved by the youth, many of them do not see any future in farming and therefore they move to the big cities in search of employment. Yet, there is a high demand for agricultural produce, both on the continent as well as outside, thus providing excellent prospects and opportunities for market-oriented farming. Thus, youths who neglect farming miss out on a great opportunity to be employed in agriculture, and to be engaged in what UNEP defines as ‘Green Jobs’ and to generate incomes to improve their lives. According to UNEP (2010), a green economy is as “an economy that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities.” Examples of green job areas include environmentally-friendly food production, beekeeping, water conservation, agro-processing, and agroforestry. Other areas include energy production from renewable resources, landscape maintenance, and biodiversity protection.

The key question is: how to use these opportunities, to stimulate new and better income generating farming models. In our work in cashew for the African Cashew Initiative (ACi) we came to realize that we oversimplify support to the farmers. In order to empower young farmers, to develop a career in agriculture and to create jobs in farming, every producer gets the same training because they grow the same produce. But we stratify because, for example: “there are first movers, always innovating and finding new and better ways for

managing the cashew industry, then there are followers and those who still farm but probably would move to something else if they had the opportunity” (ACi quoting Fairmatch Support). PPPs for youth employment initiatives need to address each group of farmers, and especially the youth, with targeted messages and using appropriate channels, e.g., reaching youth and women farmers through popular soap operas on the radio.

Agricultural development initiatives in Africa have demonstrated that global value chains offer new and profitable opportunities for structural transformation in Africa. Basic manufacturing and agriculture-related global value chain activities in particular have this potential. For example;

- Given the large number of smallholders in African agriculture, their integration into global agricultural value chains is of crucial importance. FAO estimates that smallholder farmers supply up to 80% of the food consumed in sub-Saharan Africa (FAO, 2013). Therefore the interactions of smallholders with global value chains are of particular interest.
- Global value chains offer many market opportunities for the agriculture sector, although at present most value addition occurs outside Africa.
- Between 2001 and 2011, the agriculture sector employed 65% of Africa's labor force and accounted for 17% of growth in African GDP (World Bank, 2013). For women, agriculture plays even a more important role for employment, mainly self-employment.

Opportunities through global value chains are considered a great opportunity. In a study by OECD/AfDB/UNDP (2014), the majority of respondents (80%) view “job creation from new activities” as the top opportunity arising from global value chains and resulting in new trade patterns for African countries. Also, more than half of the interviewed actors state other benefits: as the increased integration in international trade, the attraction of foreign direct investment, the emergence of domestic higher value-added activities, and the spillover of skills and technology through interaction with external suppliers and purchasers.

Digital development, information and innovation – The development of international digital communications systems and facilities, and especially their use in agriculture, has opened extensive opportunities for farmers to dramatically increase their agricultural production, trade and marketing efficiencies. Youth farmers are particularly attracted by modern technologies, and many of them now use Smart Phones and various tablet computers for their daily operations. However, The International Communications Union (CTA 2015) reports that the adoption of ICTs remains strongly limited in Africa and that the extent to which farmers and fisherfolk in African countries use ICT is far below optimal levels.

Sub-Saharan Africa is home to more than 650 million mobile phone users, with Internet usage increasing more than 2,000% in the last decade (The MasterCard Foundation, 2013). It is estimated that by 2020, 80% of the adult population in the world will access the Internet via smart phones. Africa has the highest growth rates. Most prevalent is the social networking now happening over the Internet. In addition, financial transactions are increasingly being made using mobile phones.

Examples of the use of modern ICTs in agriculture include business linkage software (by SAP) and a management information system ("3S"). The delivery

of market information and extension advice via text messages also showcases how the agricultural sector in Africa can directly benefit from modern technologies – even in very remote and underdeveloped regions. It is also noteworthy that many of the pilot users clearly demonstrated a profound entrepreneurial spirit and a willingness to adopt new technologies once they were convinced of the added value for their everyday business. Specifically, young farmers played a prominent role in embracing the tools and taking a leading role in their adoption. This role of the youth to help transform and develop a sector that is often dominated by traditional beliefs is very encouraging.

Skills Training for Enterprise Development

Making entrepreneurship part of the agricultural education curricula and an integral part of national youth employment strategies enables a smooth transition for young people from school to agribusinesses. Young entrepreneurs require training at two different, but interconnected levels: training in technical skills along the value chain to enhance production-to-consumption efficiency; and in business management skills to enable young entrepreneurs become effective managers of their enterprises. Technical skills include agronomic practices, animal husbandry, ICT for agriculture, and manufacturing of agricultural inputs and equipment, among others. These can be developed using formal and informal learning and sharing opportunities. Even though we have a generation of educated young people, very few of them are equipped with practical skills that can be applied in agriculture or in business management. These two disciplines had been separated until recently with the review of the agribusiness curricula in colleges and universities (UNDP, 2012).

There is need to increase the levels of agricultural education in higher education from the current 2% enrollment and invest more in vocational training and skills development institutions that are instrumental to those youth who do not join universities (Dalla Valle, Klemmer and Fotabong, 2011). Higher education training in agriculture and agribusiness must be flexible enough to accommodate curricula reviews and partnerships with the industry that enable them to develop successful entrepreneurship programs and provide employment opportunities for their students (Juma, 2011). While university-industry linkages might be stimulated by external change, such as lack of government funding, an internal decision is also required to establish the university as a center of excellence in conducting research, and contributing to technology and innovation that address national challenges through entrepreneurship. This is the reason why most incubators are best situated in universities

where students can focus on not just having technical and business knowhow, but also the ability to work for large companies or create jobs for themselves. Tertiary agricultural training colleges are regaining traction in the wake of agricultural transformation and the need for better skilled farm workers and entrepreneurs. At the African Union Heads of State Summit in Malabo in 2014, an AU Continental TVET strategy was adopted as an avenue for skills development and promoting youth employability and entrepreneurship through innovation. Curricula review and increasing funding towards these institutions will increase the opportunities for young people to be trained and absorbed in the agricultural sector.

Entrepreneurial skills' training at the primary and secondary levels of education not only equips learners with basic skills, but also helps to develop positive attributes and behaviors and promote entrepreneurship as a viable career. School gardens and clubs such as the 4-H, 4-K, and young farmers' clubs aid in fostering creativity, problem solving skills, and risk-taking attitudes that support young people as they pursue agricultural livelihoods in the future. A meeting by AGRA partners identified the following ways in which young learners can be prepared to become future entrepreneurs through formal schooling:

Informal entrepreneurial learning opportunities, especially for the out-of-school and out-of-work youth should be increased. For instance, in Benin the Songhai Institute program offers agribusiness training eventually leading to diversity of agribusinesses across West Africa (Dalla Valle, et al., 2011). The Opportunities for Youth Employment (OYE) program by the Netherlands Development Organization (SNV) offers skills training for out-of-school youth in rural Rwanda, Tanzania, and Mozambique, with an aim of preparing them for opportunities existing in the agriculture value chains. Such opportunities include dairy farming, horticulture,

STRATEGIES TO MOTIVATE 6-12 YEAR-OLDS TO DEVELOP INTEREST IN AGRICULTURE

1. School gardens for teaching new farming methods and science experiments.
2. A curriculum that meets science, math, and language skills requirements, but built around agriculture and natural resources content.
3. School clubs models, e.g., the 4-H/4-K model to teach agribusiness concepts and methods.
4. Provide technology and Internet access to teachers to teach agriculture, agribusiness, etc.
5. Have targeted programs/clubs/groups for girls.
6. Teach money management, record keeping and basic business skills through club records and projects.
7. Demonstrate to teachers, parents, and policy makers that introducing these programs can improve academic performance, school attendance, and school retention.
8. Demonstrate attractiveness of agriculture through financial value of agriculture to the school.
9. Link the agribusiness curricula to next level of secondary education by preparing for 'practicals' in biology, etc.
10. Present some curricula in 'mother tongue' as well as English.
11. Demonstrate how school gardens and youth clubs (4-H/4-K) help kids earn money for school fees and supplies.
12. Use revenue from clubs (4-H/4-K) to provide school meals.
13. Include health in the youth club (4-H/4-K) program, such as hand washing, HIV/AIDS, etc.
14. Engage parents, education officials and other organizations in the projects.

Source: (AGRA, 2010) and revised by the authors

and renewable energy (SNV, 2014). The FAO's Junior Farmer Field Schools remains one of the best case studies for equipping young people with skills in agriculture and entrepreneurship (FAO, 2014). Such informal learning spaces must be contextualized to local circumstances, the diversity of the young people and their social needs (including gender), and availability of technology and careful risk reduction strategies. In addition, training must be accompanied by a proper analysis of the economic opportunities available, avenues for trainees to access startup capital, and market research to determine the nature of enterprises and types of linkages to be established and at what levels (Koira, 2014; Making Cents International, 2010). In addition to informal learning, technology-based agricultural extension services should be promoted as they support smallholder farmers' efforts to increase productivity, as well as integrated rural development activities. Through mobile phones and tablets, radio, television, e-kiosks, and other ICT platforms, advisory services that transfer new skills and production techniques, and improved marketing knowledge and practice, enable farmers to manage their farms as agribusinesses and facilitate learning through a host of applications (Koira, 2014).

Incubators have become an important aspect of agricultural innovation systems and have proven critical to the survival of early stage enterprises. The World Bank's infoDev defines business incubation as a process that nurtures innovative, early-stage enterprises that have high growth potential to become competitive businesses. An incubator provides a combination of shared facilities and equipment, business development,

market access and technology transfer services, financial services, mentoring and networking (Koira, 2014). The success of incubators is measured in terms of enterprise creation, market innovations, enterprise survival rate, profitability, revenue growth, and job creation. Through incubation, new ideas, technologies, and an entrepreneurial spirit, help young people channel their creativity; transfer knowledge, information and ideas; and stay connected (UNDP, 2012). The Universities, Business and Research in Agricultural Innovation (UniBRAIN), a consortium of African agricultural and technology institutions, is one example of an agricultural incubator. Pioneering a new approach to agricultural innovation and agribusiness education in sub-Saharan Africa, UniBRAIN supports agribusiness innovation incubators for university students and also enhances collaboration among universities, research institutions and the private sector, thus improving teaching and learning and employability of graduates (ANAFE, 2014).

Farmer Business School: A sustainable smallholder agribusiness program – Youth farmers want to be different from their parents, who often farmed because they lacked other job opportunities. 'Farming as a business' can be attractive to rural youth.

Farmer Business School (FBS) has been developed by GIZ's Sustainable Smallholder Agriculture Business Program, with support from the Bill & Melinda Gates Foundation (BMGF). The emphasis is on cocoa-producing smallholdings. FBS focuses on two main crops, and encompasses farmers' food production and better nutrition. Jointly with other multi-stakeholder partnerships⁹, over

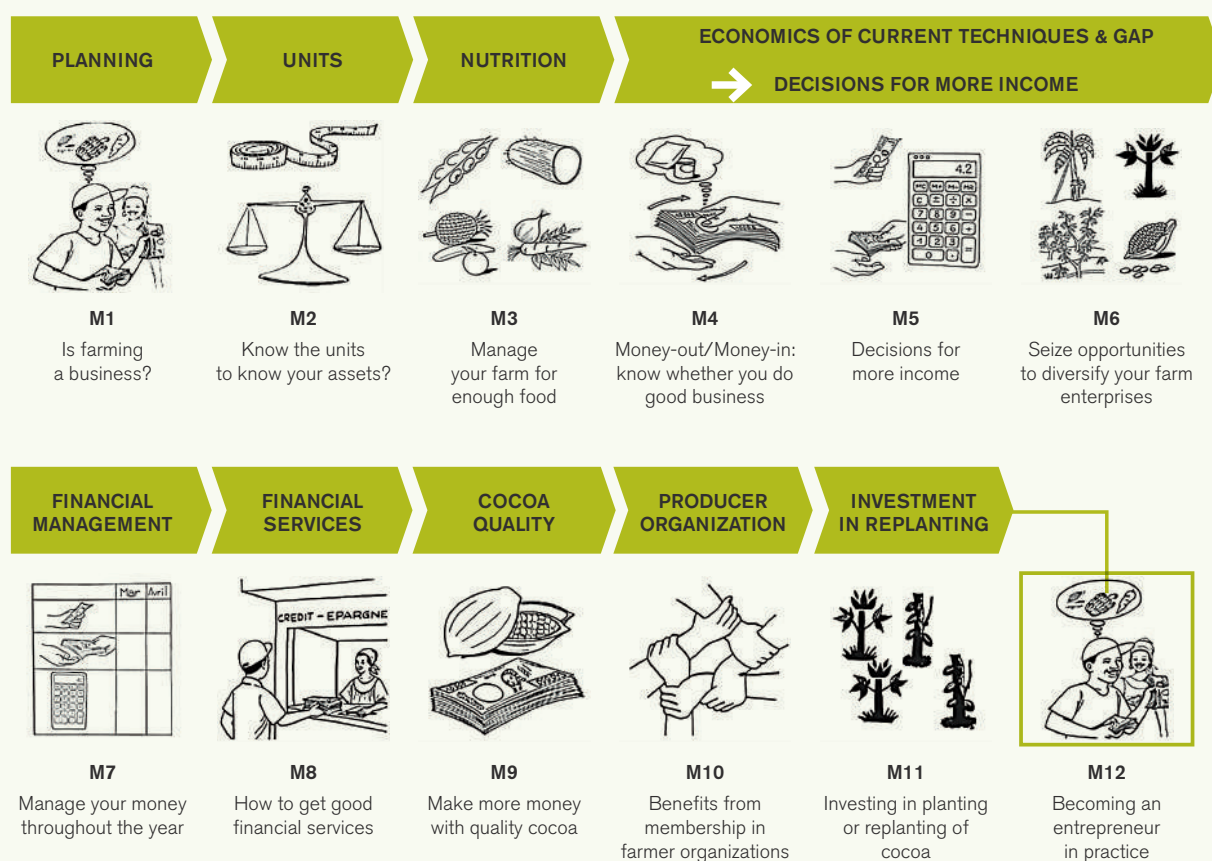
400,000 producers in 12 African countries have so far gone through FBS – including producers of cocoa, cotton, rice, coffee, vegetables and cashews.

The Farmer Business School curriculum includes the following modules (see Figure 3.5 below):

- Principles of farming as a business;
- Basics of human nutrition and farm management for enough food and a balanced diet;
- Economics of cocoa and food crops;
- Decisions and strategies based on cost and benefit analyses to diversify and increase incomes;
- Financial management;
- Savings and credit;
- Benefits from quality cocoa;
- Benefits from membership in producer organizations; and
- Planning investments in replanting of cocoa.

The FBS complements technical training, agricultural extension programs and financial services in agriculture. To satisfy the demand for inputs, extension and financial services the project enhances links to other public and private development programs.

Figure 3.5 Model of Farmer Business School



Source: GIZ, Annemarie Matthes

⁹ Competitive African Cotton Initiative (COMPACI); Competitive African Rice Initiative (CARI), African Cashew Initiative (ACI) – PPP Programs of German Development Cooperation with Bill & Melinda-Gates Foundation, and other partners, e.g., Ghana Cocoa Board and NIRSAL in Nigeria.

Financing Young Entrepreneurs

A variety of actors offer financial services, including formal financial service providers (FSPs) such as commercial and development banks; semiformal banking systems, such as savings and credit cooperative organizations; and informal banking systems, such as self-help groups, village savings and loan associations, moneylenders and traders (FAO, 2014). Only a small proportion of young people, however, can access the formal and semi-formal FSPs due to a lack of collateral, the high risks involved in agriculture that most of these services fail to address, and overall because of limited financial literacy (Making Cents International, 2010). Informal financial services emerge as the main sources of income for youth entrepreneurs (Dalla Valle, 2012), and these need to be added to the portfolio of donor-led grants, awards and other credit initiatives becoming available to young entrepreneurs (Brooks, et al., 2013; Van der Geest, 2010).

There are also existing online models that connect donors and investors to entrepreneurs around the world that are not yet fully exploited on the continent, such as e-banking and e-trade through mobile banking, as well as crowd-funding services such as Kiva and Zidisha, among others (Dalla Valle, et al., 2011; FAO, 2014). Existing micro-financing and franchising models must also be reviewed to ensure that they meet the needs of different segments of young entrepreneurs, from those just starting out to those already well established but struggling to grow their agribusiness. Value chain financing should be explored to ensure that young people have access to capital at different levels of the value chain, and are empowered with the skills necessary for effective financial management (Koiri, 2014). Since most youth entrepreneurs will operate in the informal sector, it is crucial that lenders accept 'informal assets', including buildings or farms on informal settlements, as collateral for credit (ILO, 2012). Other forms of alternative collateral

include future harvests, land leases, and warehouse receipts, which could be combined with such financing mechanisms as matching grants, taxation policies, public procurement policies, advance purchase arrangements, and innovation awards that ease the financing burden (Juma, 2011).

In addition, contracting arrangements should be redesigned to accommodate young entrepreneurs and to help them meet financial constraints, where the farmer is pre-financed with inputs and assured of market channels. This can be combined with provision of management services and technical assistance. While this has worked for commercial farms in the past, small enterprises stand a high chance of tapping into emerging markets, such as those for organic produce, retail supermarket chains, and hotels and the tourism industry, among others. While insurance seems prohibitive for those operating in the informal sector, facilitating such services might increase the number of young entrepreneurs as it significantly contributes to agricultural risk management across the agribusiness value chain. Appropriate policies should be drafted and existing services revised to reach a younger clientele (Brooks, et al., 2013; Dalla Valle, et al., 2011).

Agribusiness financing mechanisms must take into account variable agricultural risks such as weather, as well as access to assets and training, while at the same time offering credit services that are relevant to differing levels of entrepreneurship (Brooks, et al., 2013). As most youth will not have experience in running a business or managing credit, financing youth agribusinesses must be part of an integrated approach that links credit to extension, markets, business mentoring, and to social networks for learning, thus yielding higher results in retention and sustenance of young entrepreneurs (Brooks, et al., 2013).

Markets

Markets are the basis for rapidly developing agribusiness value chains that provide a multitude of opportunities for entrepreneurship. The link between agribusinesses and markets depends on several factors, including the nature of products and services produced/provided and the physical and institutional environment (The Montpellier Panel, 2014). Product specificity improves market targets while an enabling institutional environment can be facilitated through farmer organizations and PPPs that establish and maintain these linkages. In addition, the physical location of the enterprise plays a significant role in the nature of the products and services one can produce in a certain

place depending on the infrastructure available (Koiri, 2014). However, even before accessing markets, young entrepreneurs have already faced numerous constraints to starting their farming activities, such as difficulties in accessing land, agricultural inputs, and financial services, and including such social barriers as gender, education, and marital status. Furthermore, many young people lack experience and knowledge of how markets work. They often lack business, management and entrepreneurial skills, and like many other smallholder farmers, they lack information about prices (FAO, 2014). Therefore, an important question to ask here is how we should link the young entrepreneurs to agricultural markets? Since they

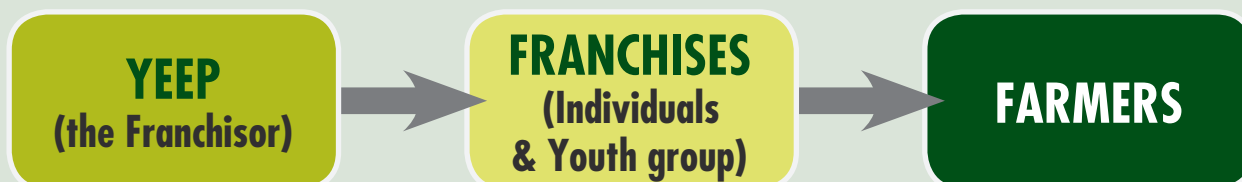
Box 3.7 Innovative Markets: Youth Evergreen Entrepreneurship Program (YEEP)

With increasing impacts of climate change on agriculture and vice-versa, there is need to increase the pace of adoption of sustainable agricultural practices in Africa, especially taking advantage of the educated but unemployed youth dividend. A range of agroforestry techniques are promoted on farms and fields, but these require scaling to impact by diversifying the products and services offered through the agroforestry value chain, including in:

- Seeds and seedlings of agroforestry tree species;
- Accompanying technical support that farmers require during planting, nurturing, and managing of trees to maturity; and
- Knowledge and technologies on how farmers can tap into the value chains for agroforestry products, bi-products and services

ICRAF's Evergreen Agriculture Partnerships has identified entrepreneurial opportunities in the agroforestry value chain where a cadre of well-trained youth can offer a complete set of products and services to farmers, and in so doing, create decent employment opportunities, and contribute to agricultural sustainability, food security and climate adaptation. The Youth Evergreen Entrepreneurship Program (YEEP) is a prototype sustainable agribusiness model with a vision to increase opportunities for enhancing sustainable and climate-smart agriculture while at the same time providing lasting solutions to youth unemployment in sub-Saharan Africa. The overall objective of YEEP is to provide an opportunity for young people to build their capacity through training in franchising, running group franchises, and eventually establishing their own franchises in agroforestry practices.

YEEP provides individuals and youth groups with the technical skills, start-up resources, and networks required to set up viable agribusinesses in the agroforestry value chain. YEEP franchises will provide a range of products and services to local farmers who are willing to adopt agroforestry practices, but lack access to several key components like seeds, seedlings, and extension support on tree-crop management and tree products value chains. In addition, they provide end-to-end support to the farmers, right from seedling germination, to the time when the farmer is ready to reap the benefits of the mature trees on their fields.



YEEP uses a franchise model, whereby the technical content is prepared by the *franchisor* (in this case, the YEEP) that trains and prepares individuals and youth-groups to become *franchisees* (the youth entrepreneurs). With support from the franchisor, the franchisees develop and maintain their respective farmer customer bases, and obtain payments from the farmers directly for products and services offered. Some of the specific agribusinesses that YEEP is exploring include:

- Establishment of agroforestry seed, seedling and related enterprises;
- Transplanting seeds and seedlings onto farmer and other clients' fields;
- Providing regular care and maintenance of the trees until maturity; and
- Providing other technical services such as sale of timber and non-timber products.

In order to create truly effective franchisees, YEEP will develop training methodologies to impart skills and knowledge; provide access to financing instruments; develop awareness campaigns on sustainable agriculture; facilitate access to markets for agroforestry bi-products; promote research-driven innovation; and establish partnerships with key actors.

Source: Garrity, D. 2014: Youth Evergreen Entrepreneurship Program (YEEP) Project Brief. For more information contact Dennis Garrity: d.garrity@cgiar.org

are already marginalized in the formal economy, there needs to be a new preferential way of creating markets for young entrepreneurs.

Innovative marketing strategies are necessary. A growing option is using online marketing tools, but these have yet to be fully exploited by young entrepreneurs. For instance, timing productive agriculture so that the produce reaches the market during periods of high

demand would fetch higher prices for young people. Investing in new products and targeting niche markets such as those created by a growing urban population, i.e., organic produce and high-value processed foods. Market pooling through cooperatives, and value addition through processing, packaging and branding, increases the opportunities for young entrepreneurs to access better markets (Making Cents International, 2010).

Female Entrepreneurs

Women comprise 50% of the agricultural labor force in Africa as farmers on their own land, as unpaid workers on family farms, or as paid and unpaid laborers on other farms and agricultural enterprises (Brooks, et al., 2013; Kinyanjui, 2014). Yet, only a few of them establish stable agribusinesses, despite the evidence that there is great impact of women entrepreneurship on the informal and formal economies (Kinyanjui, 2014; Langevang, et al., 2015; Schroeder, 1996). The Global Entrepreneurship Monitor reports a considerable gender gap in entrepreneurial activity worldwide, with significantly more men than women being in the process of starting a business or operating new businesses (Kelley, et al., 2011; Langevang, et al., 2015). Women-led enterprises are often small, perform poorly, have low growth ambitions and show little internationalization. Compared to male youth, female youth face a triple challenge in entrepreneurship – the challenge of informal sector constraints, age, and gender – where due to traditional gender-based stereotypes and gender-based divisions of labor that are especially persistent in rural areas, their access to education and remunerative agricultural work is limited.

To increase the participation of young women in sustainable agribusinesses, policies must be designed to improve women's labor market conditions (AfDB, 2014; Chant and Jones, 2005). It will be useful to link specific agricultural subsidies and tax incentives to female entrepreneurs, and support adequate training and educational opportunities with a specific emphasis on promoting gender equality (FAO, 2012). Furthermore, female entrepreneurs should be encouraged and facilitated to explore across the agribusiness value chain in such activities as information provision, trading, retailing, processing, and research, which are not limited by access to assets or by cultural norms.

As a consequence of changing gender norms, men are increasingly entering women's entrepreneurial domains, while women remain highly concentrated in a few sectors of the value chain. There is therefore a real need for women to be innovative so as to remain competitive and explore diversification (Kelley, et al., 2011; Langevang, et al., 2015).

Ict-Enabled Agribusinesses

Information and communication technologies (ICTs) are double-edged tools for strengthening agricultural entrepreneurship as they first enhance production-to-consumption efficiency, and then create multiple opportunities for a new generation of actors as developers and users of the technology along the agribusiness value chain. There is evidence that ICTs increase the impact of young entrepreneurship and facilitate new avenues of addressing systemic barriers, such as skills acquisition, financing, marketing, and business networks. Internet-enabled solutions will help small- and medium-scale enterprises (SMEs) to grow their performance as they become more effective and efficient, increase the scale of their operations, and thereby reap the benefits of global and regional markets from which they have historically been cut off (Dalberg, 2013). The proliferation of mobile

applications and services, web-based information platforms, and social media information increases the choices that young people have in pursuing agribusiness opportunities. As network services increase in availability and quality, and the cost of technology decreases, devices will allow farmers to access sophisticated tools to develop their agribusiness and increase their access to markets, thus lowering the costs of production (Koiri, 2014). Some of the mobile and web-based technologies include:

- **Farmbook:** Business management, planning, mapping and learning application for field agents in Southern Africa.
- **CocoaLink:** Extension, social marketing information services for cocoa using SMS and IVR platform in western Ghana.

- **Kilimo Salama:** Micro-insurance product using SMS/USSD platform in Kenya.
- **iCow:** Extension and P2P learning service for dairy farmers using SMS and IVR in Kenya.
- **Mkulima Young:** Social marketing, extension and P2P learning service platform; social media website and Sacco in Kenya.
- **Mpesa:** Mobile money payments and transfers transforming rural economies by providing banking and lending services for millions in Kenya.
- **AppLab:** A project in Uganda that uses Google SMS search technology and the country's manufacturing technology network to access information.
- **MFarm:** Market information service; a mobile platform with price information, collective crop selling and input buying services in Kenya.

Kenya, Nigeria, Ghana, Morocco, South Africa and Egypt are emerging as hubs for tech entrepreneurship, opportunities that can be leveraged to inspire tech-based agribusinesses. This can be achieved by

expanding the innovation incubator footprint, supporting active investors and influencing their work towards youth agribusinesses, and by analyzing and addressing the key challenges for e-entrepreneurship growth in Africa (Dalberg, 2013). Leveraging the current boom of technological innovations in Africa and further integrating them in deepening, upgrading and expanding the agribusiness value chain will help to, among other things, optimize resource use, increase female youth entrepreneurship, reduce waste, improve processes, link farmers to markets, and sustain more youth in the agrifood system. Additionally, there are immense opportunities for further developing ICTs to address more challenges, such as automating agricultural and processing practices, enhancing weather forecasting, and managing agricultural insurance mechanisms. They also need to be combined with the wider agricultural technologies that include developing innovations for different kinds of farmers, such as improving soil testing and GIS mapping of farmlands. As evidenced in the increasing technology development environment in Africa, some of the challenges that young innovators and entrepreneurs face include intellectual property rights for innovations they develop. Policies that facilitate transparent and quicker processes of patenting technologies will enhance their entry into the market and thus drive agribusiness competitiveness in Africa.

Youth Cooperatives

Collective action is somewhat lacking among rural youth and they are rarely organized in self-help groups that could provide the means for generating savings and improving the borrowing power of individual members and the group. In many developing countries, young rural women face additional constraints in accessing financial services due to their higher rates of illiteracy, restricted liberty of action, and lack of consent of family members (Dalla Valle, et al., 2011; FAO, 2013). Hence, cooperatives are promoted as a particular form of enterprise that may be attractive to young people as collective resources are pooled and entrepreneurial activities aim to serve a mutual benefit (ILO, 2012). Cooperatives operate under seven main principles: voluntary and open membership; democratic control by members; members' economic participation; autonomy and independence; provision of education, training and information; cooperation with other cooperatives; and concern for community (ICA, 2007). Although cooperatives can be difficult to manage because of complex decision-making processes, they are attractive because members accomplish more than they could individually by increasing their financial and human capital and benefiting from economies of scale. They are especially ideal for young people who need to overcome a lack of resources (EU/OECD, 2012) especially land,

knowledge and information, financial services, access to quality inputs and technology, and pooled output markets.

Youth agricultural cooperatives have proved to be an effective mechanism for engaging young people in off-farm enterprises, providing a range of services to members, and facilitating access to and management of natural resources such as land and water. Additionally, they help develop the self-confidence, entrepreneurial spirit, and social capital of its members (FAO, 2013). Existing success case studies of youth cooperatives include the Youth Economic Empowerment through Cooperative Project (YEEO) in Uganda, which equipped young people with cooperative knowledge, developed leadership skills, created over 4,000 jobs by 2006, and overall reached over 8,000 youth in 10 districts (Kyazze, 2010). Youth cooperatives can yield greater benefits for promotive-transformative work opportunities as the social capital and collective action is used to drive policy and better governance in the agricultural sector. They help the marginalized to develop a strong, constructive voice and enhance their participation in policy dialogues so that youth-sensitive policies are more likely to be developed (Bingen, et al., 2003; ILO, 2012).

Partnerships

Whereas a clear demand is a pre-condition for successful agribusiness, there is equally a need for partner champions who facilitate the process of building networks between the different actors in the agribusiness value chain. Scaling up of rural youth development policies and programs must be based on a multi-sector approach with close coordination and partnerships between a wide array of public and private organizations. Youth networks and partnerships have to be established and effectively used at local, national and international levels (IFAD, 2011). Connecting with different actors along the value chain, such as the producers, traders, private sector entities, agro-dealers,

research organizations, the government, and various NGOs will enhance the adaptation of an agribusiness to changing market conditions and help it remain competitive. Young entrepreneurs' capacity should be developed to ensure that they are able to negotiate for equal positioning in PPPs, while at the same time receiving preferential treatment as marginalized groups as they start up or grow their enterprises. Furthermore, PPPs should be pursued to help compensate for market failures that would otherwise hinder or prevent investments and reduce some of the risks associated with investing in new markets and new technologies (The Montpellier Panel, 2014).

Agribusiness Policy Environment

Entrepreneurship-based policies and programs that address youth unemployment and poverty reduction need to be more grounded in their expectations, design and implementation by taking an explicit account of the highly diverse and changing rural economic and social realities within which young people find themselves (and indeed help to shape), in addition to the diversity of young people themselves (Sumberg and Okali, 2013). The role of government will remain critical in the provision of key resources such as land, energy, water, and road networks to facilitate investment in entrepreneurship across Africa. Besides an agribusiness policy that commits financing towards developing an agribusiness environment at the national level, regional development policies and programs must reflect governments' commitment to direct investments to strategic production activities such as agriculture, manufacturing and related services sectors (UNCTAD, 2014). To sustain youth agribusinesses, short-term investments need to inform policies that reflect the long-term vision of the broader agrifood system by incorporating investments in improving agricultural productivity, rural infrastructure (roads, water, and electricity), facilitating sustainable local, regional and international markets and boosting social outcomes (Munang and Mwaura, 2015).

Importantly, entrepreneurs will flourish in countries that are economically stable, with well-developed institutions, infrastructure, and health and education systems. It has been shown that new and emerging technologies, when accessible, open new economic opportunities, break down information barriers, enable people to take collective action, and help those in isolated communities to engage in commerce (Anyanwu, 2013). As African rural areas become

more accessible and connected due to improved road networks, electrification, and access to water and ICT infrastructures, new markets will be created and accessed, and opportunities for developing home-based industries in food processing, packaging and post-harvest management will be created.

It is possible to achieve the AU's target of a 10% national budget allocation to agriculture by devising innovative and sustainable ways of achieving the commitment to creating 30% of youth job opportunities in agriculture. This can be facilitated through tax incentives, targeted subsidies, and preferential trade policies – young people will be motivated to become agricultural entrepreneurs when they know they can easily access needed financing, inputs are subsidized or tax free (especially new technologies), and their products and services are given preferential treatment in the marketplace. In addition, youth agribusinesses should be promoted in the context of African food sovereignty, given that intra-African trade surpasses all other markets to which young African entrepreneurs might contribute, if enabled by favorable policy frameworks at the regional and international levels. According to the African Development Bank, higher levels of intra-African trade tend to reduce youth unemployment and promote inclusive growth on the continent. The AU's targets can be achieved if the challenges of natural resources, energy supply, transport infrastructure, and innovative financing mechanisms are addressed (Anyanwu, 2014). Additionally, the efficiency and effectiveness of national public institutions need to be improved if they are to serve as genuine partners with private sector organizations in financing and investing in the human capital needed for development.

Conclusions

The African agribusiness environment is thriving. In its different forms and at different scales, it can drive Africa's inclusive economic growth and become essential in establishing food and employment security on the continent. A key message from the 2014 African Agriculture Status report was the significant role that young people would play if they remained in rural areas and acquired traditional or indigenous knowledge relating to sustainable agriculture, and then combined this knowledge with science-based technologies and ICT innovations to build sustainable employment opportunities in the agriculture sector (AGRA, 2014). Not only are youth able to integrate local and scientific knowledge in new agribusinesses, they are also sufficiently dynamic and flexible to remain resilient and adaptive to the impacts of climate change. As such, African 'youth dividend' is not a problem, but rather a large group of people whose talents and potential drives African agricultural productivity to scale and influences the nature of agribusiness on the continent and around the world. If young people attain decent work opportunities in the agriculture sector, they are more likely to employ their fellow youth, thereby pulling even more young people out of unemployment and eventually reducing youth poverty.

In this chapter we have highlighted how entrepreneurship can be leveraged to achieve the three utmost goals in Africa's economic growth: employment creation for a growing youth population; food security for a growing and urbanizing population; and sustained and inclusive economic growth where the agrifood sector significantly boosts growth in other related sectors such as health, manufacturing, infrastructure, foreign income and ICTs. In addition, entrepreneurship increases social inclusivity by reducing income inequalities across gender, age, and between rural and urban areas. To succeed in agribusiness, youth require context-specific and gender-smart agribusiness development strategies; skills training that increases the value of products and builds the capacity to adapt to change; networks linking entrepreneurs to markets; financing; improved technologies, including better storage, distribution and logistics systems; and enabling policy environments that provide tax incentives, targeted subsidies, and improved infrastructure.

Sustainable agribusinesses must be promoted. They pave the way for economic growth, structural transformation, environmental protection, and improved technical skills, which in turn catalyze economic activities and connect major economic sectors, thereby resulting in inclusive growth and driving sustainability on the continent. The optimism for youth in sustainable agribusinesses has encouraged development partners to support production-based agribusinesses that are

resulting in increased agricultural productivity. However, given the high risks in production agriculture, it is important to start directing investments towards the entire agriculture value chain, including processing, transport, packaging, information, research, trade, and post-harvest services (Mwaura, Garrity and Muller, 2014). Furthermore, as the 2005 World Youth Report points out: "entrepreneurship is not for everyone and so cannot be viewed as a large-scale solution to the youth employment crisis". The agribusiness value chain must also encompass a wide range of work opportunities in agricultural research, training, policy and advocacy, all which will drive job creation while spurring innovation in the sector.

Need for more development investment in PPPs for youth in agriculture

Structural changes in agriculture in SSA are needed for youth to find their opportunities. Land continues to be sold to international investment firms. Governance issues make investments in SSA risky, and thus access to finance for investments remains a hurdle. If the emerging market power of agricultural value chains is to be used to its fullest, producers need to be better organized, and proactively link with the market players downstream. Productivity gaps and in-country processing opportunities also need to be addressed. Despite the multiple challenges as highlighted above, the potential for agriculture as future employment and income for youth and following generations remains huge, and can outweigh the risks. These opportunities can be exploited with development PPPs in agriculture being based on inclusive project and business models with youth:

- Youth as innovators;
- Youth as a new market;
- Youth as partners for private companies;
- Youth as committed employees; and
- Youth as driving agripreneurs for a growing economy.

The examples of successful PPPs for youth in agriculture cited in this chapter have shown the opportunities in clear terms. It is up to governments, private companies and development agencies to increase their development investments and leverage ideas in an innovative and scaled up manner. They must capitalize on the growing youth population in Africa to accelerate agricultural growth on the continent, and to harvest the spillover effects of that growth to other economic sectors.

Fundamentally, policies, technologies, and capacity strengthening for agribusiness development must be increasingly targeted towards region-specific youth issues. Making agribusiness work for young people falls within a broader context of making global agrifood system governance more inclusive and responsive to the needs of the poor and marginalized. At the moment, the governance of agrifood systems is profoundly undemocratic, mostly involving unilateral decisions of large corporations, and government and

international agency policies and investments that are in large part shaped by the interests and priorities of these powerful actors. As young entrepreneurs emerge in the African agribusiness landscape, they represent new stakeholders in the governance of agriculture and food security, an important building block to agricultural transformation in Africa. They must be protected from exploitative markets, while at the same time provided with a space for equal participation in African agricultural development.

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Chapter 4

Innovative and Inclusive Finance for Youth in Agriculture

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KEY MESSAGES

ONE

Links between young entrepreneurs in agriculture and formal financial institutions need to be strengthened by improving youth's financial literacy and the capability of institutions to assess agricultural sector opportunities.

TWO

Better metrics can drive better policy – African governments should produce and share reliable statistics on youth employment in agriculture and their financial inclusion.

THREE

Young agripreneurs, having fewer assets, will benefit from forms of finance that do not require fixed collateral, such as contract farming, leasing, warehouse receipt finance or factoring. Governments and international development organizations should encourage such forms of finance through blending and guarantee schemes.

FOUR

Crowdfunding platforms offer opportunities to young African entrepreneurs, including in agriculture, and governments should remove all barriers that prevent them from operating properly, including for equity and loan financing.

FIVE

A scarcity of venture capital firms (including the mentoring services that they provide) hampers African young entrepreneurs, including in agriculture, in developing and scaling up their businesses. Development organizations should continue to scale up their support for challenge funds and impact investing to fill this critical gap in the market.

Introduction

Rural and urban youth have the potential to contribute to food security, economic development, social inclusion and stability. But sadly, three of every four youths in Africa live on less than USD 2/day (African Economic Outlook 2013). Securing youth access to credit, savings, and insurance will unveil their talent for entrepreneurship, boost their self-esteem and allow them to have a positive transformative role in their society. Financing youth in agriculture is already happening, and where African youth have had this opportunity, they have found innovative and creative strategies to secure a future for themselves while contributing to the development of the private sector and social stability in their countries. Financing of youth needs to be scaled up. In 2012, Dalberg Global Development Advisors estimated the global smallholder agricultural finance market at USD 450 billion (USD 50 billion in Africa), half of it for short-term credit, half for long-term credit (Carroll, et al., 2012). Hence, young Africans involved in agriculture or related activities comprise a key means for financial service providers to harness the largely untapped potential demand for smallholder agricultural finance.

This chapter describes practical and evidence-based financial inclusion models to strengthen African youth participation in agricultural value chains. It starts with a brief review of the challenges preventing young agripreneurs (i.e., entrepreneurs in the agri-value chains) from accessing needed finance, as noted elsewhere in this publication. Next, the conditions and specific challenges that prevent access to financial services for young agripreneurs and young subsistence farmers are discussed. This is followed by a description of the role of governments in creating an enabling environment for financial inclusion of youth in agriculture, and in developing innovative financing mechanisms. Then, key principles that financial service providers should follow while developing products and services targeting youth are described and four key innovative financial products for youth are presented. Finally, the conclusion highlights key policy recommendations for enhancing access of African youth to innovative and inclusive agri-finance.

Challenges Preventing Youth Access to Finance and Participation in Agriculture

Youth financial inclusion is a complex and interwoven challenge, and lack of access to finance is one of many challenges preventing youth participation in agriculture (Filmer and Fox, 2014)¹. Poor inclusion is not only due to direct constraints, such as the lack of innovation in the formal banking industry or the lack of youth financial capabilities, but also to general constraints that simultaneously hamper youth participation in agriculture.

These general constraints include access to: 1) assets and social capital; 2) knowledge, information and adequate education; 3) the political process, and 4) input and output markets.

Africa's youth usually do not possess the collateral needed to make them eligible for loans from the formal banking sector, and informal mechanisms such as savings clubs, while useful (and often the source of funding for small capital investments), are only having a very limited impact on youth access to capital. In many African countries, rural youth move out of agriculture due to the lack of access to land (Bezu and Holden, 2014). The youth often do not possess formal land titles, do not have access to steady employment, and are not endowed with mobile assets, such as cars, motorcycles or furniture, that can be accepted by formal financial service

Mike Njau, now 25 years old, is a model strawberry farmer in Kiambu County in Kenya. At 22, he resigned from his job in a local bank to venture into small-scale strawberry farming. With support from Farm Concern International (funded by AGRA), he has been able to expand his business, and has doubled his income.

According to Njau, lack of access to affordable finance is one of the biggest challenges facing young people in Africa who want to move into agriculture. The other challenge is lack of land.

Njau was lucky enough to get financing through family borrowing and the little savings he had from his banking employment. Since he started, however, he has used internally generated resources to finance his farm expansion. Even after three years of successful business, he still cannot borrow from banks or microfinance institutions because he does not have collateral.

providers as loan guarantees (Filmer and Fox, 2014). With poor social capital, the youth often lack potential guarantors in their private circle to back their loan requests.

¹ A survey done in Nigeria ranked inadequate credit facilities as the number one constraint to rural youth's involvement in agriculture [Akpan, S. B. (2010). "Encouraging youth's involvement in agricultural production and processing."]

Youth's relatively insufficient access to knowledge, information and education makes them less prepared to be successful and proactive agripreneurs (see Chapter 3). Capacity building is therefore critical to empower youth in agriculture, which would also reduce the risk of lending. Youth's relative lack of knowledge and information on the structure of existing agricultural value chains prevents them from using market connections to access sales agreements and participate in contract farming, which can be valuable as collateral for banks (Miller and Jones, 2010). Technology has the potential of easing the drudgery of traditional farming (which makes the sector quite unattractive for most young people), but it requires farmers to have the knowledge and skills to identify and use

appropriate technology. The poor use of ICT applications and platforms to ease financial and commercial transactions often leads to high transaction costs for the young agripreneurs (de Silva and Ratnadiwakara, 2010).

Finally, even though young Africans often have a high level of involvement in politics, particularly as voters or ground troops for seasoned politicians, they have limited capacity to vie for political office, which in turn hampers their lobbying capacity in local, regional and national decision-making arenas. Thus, the youth's voices are not heard during the design and implementation of policies affecting them, and as a result those policies are often not adapted to their conditions (UNDP, 2012).

Young Agripreneurs and Financial Inclusion

Current status of youth access to finance²

Few African youth have sustained access to a variety of financial services and products at an affordable cost, such as savings, loans, insurance, and payment systems. This is the common definition of financial inclusion (Gardeva and Rhyne, 2011). In 2014, 20.5% of young African adults (aged 15-24) held an account at a formal financial institution – including banks, credit unions, MFIs, SACCOs and post banks – compared to 33.1% of older adults (aged 25 and above). Few youth also have access to formal savings. In 2011, only 10% of African youth saved in a formal financial institution, with a slight increase to 11% in 2014 (Demirguc-Kunt, et al., 2015).

When youth have access to financial services, it is mostly through initiatives led by semi-formal NGO and community-based organizations (such as self-help groups and village savings and loan associations), and informal private financial services providers (moneylenders and traders, family and friends, agroprocessing companies, and input suppliers) (Demirguc-Kunt, et al., 2015).

For instance, in 2014, 47.7% of young adults in sub Saharan Africa reported to have contracted a loan, but in almost four out of five cases, this was from family or friends. Only in one out of fourteen cases was the loan from a bank. Similarly, youth savings were mostly outside of the formal sector: of the 49.8% of young adults in SSA who reported saving any money in 2014, 10.9% saved in formal financial institutions while 16.6% used saving clubs (Demirguc-Kunt, et al., 2015).

The situation is improving rapidly. For example, from 2011 to 2014, the percentage of SSA youth who held

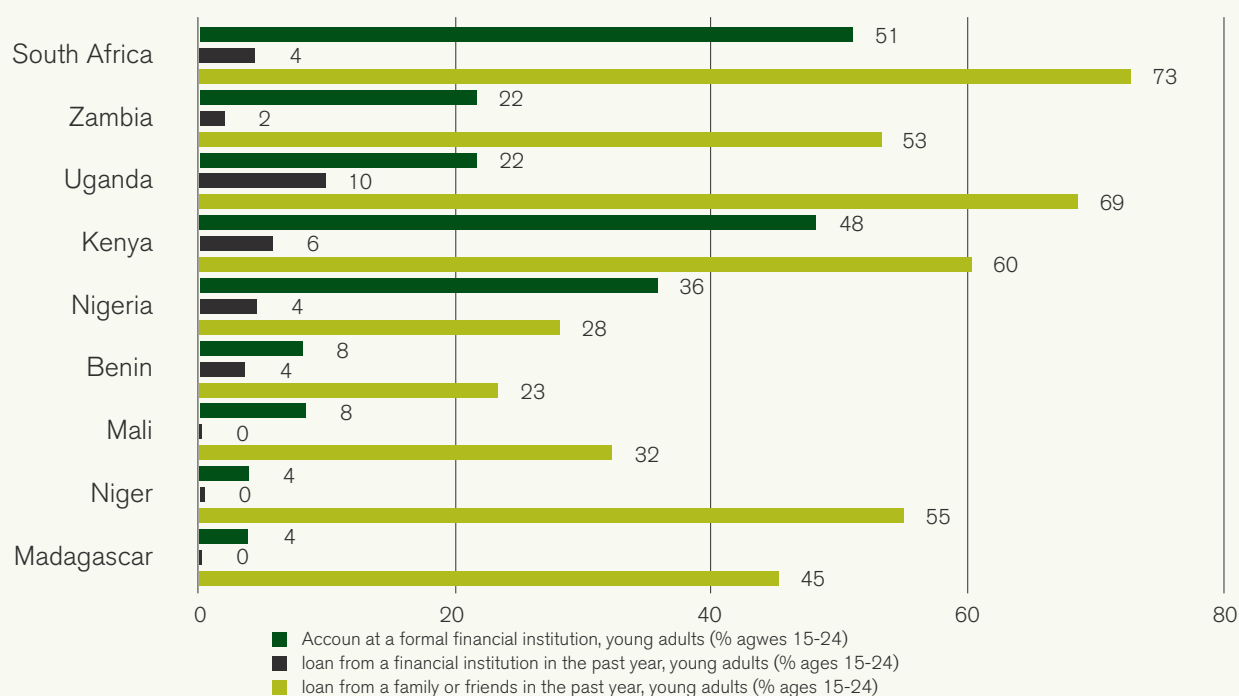
a bank account increased by a fifth, and that of youth able to obtain a formal financial sector loan by almost two-fifths. However, this was from a very low base and much more progress is needed (Demirguc-Kunt, et al., 2015). Furthermore, the low level of youth savings at formal financial institutions is striking, given that such savings are critical for youth to build up financial assets for investment in productive capital and to build up a financial record that can be taken into account in loan assessments done by banks (if banks were to provide facilities for informal savings clubs, like Kenyan banks do with their “chama accounts”³, this would also help build credit records). To address this issue, organizations such as The MasterCard Foundation are increasingly using youth savings groups as a springboard to formal financial inclusion (Ramírez and Fleischer-Proañó, 2013; Markel and Panetta, 2014; The MasterCard Foundation, 2015a).

Finally, few youth have access to insurance. In 2011, only 6.5% of African youth purchased agricultural insurance. This low participation of youth in the insurance market is mostly due to a lack of appropriate insurance products for smallholders in general and for youth in particular (Filmer and Fox, 2014). Fortunately, the development of micro-insurance schemes (including weather-based insurance programs) supplied by trusted and innovative channels, and characterized by low premiums, simple design, flexible premium payments, and rapid settlement of claims, are increasingly filling this gap (Filmer and Fox, 2014). For instance, in 2013 the Kilimo Salama initiative insured 185,000 Kenyan and Rwandan farmers who received insurance policies that covered their harvest

² Throughout this section, please note that whether someone opens a savings account or contracts a loan is not a perfect indicator of whether they have access to formal financial services. We rather use these indicators as a proxy for financial inclusion.

³ Chama accounts are savings accounts for formal and informal savings groups (chamas) offering the groups savings facilities, but also providing access to bank loans of up to three times a group's savings.

Figure 4.1 Youth financial inclusion is heterogeneous across SAA countries



Source: Global Financial Inclusion Database, World Bank (2015)⁵

losses due to drought or excessive rain⁴. This initiative is expected to cover about 1 million East African farmers by the end of 2015.

Youth financial inclusion is heterogeneous across SSA countries. As Figure 4.1 shows, 51% of young South Africans and 48% of young Kenyans held an account in a formal financial institution in 2014. This compares with only 8% of young Beninese and Malians (and these are by far not the worst countries; in Madagascar and Niger, for example, it is only 3.9%). In all countries, many more youth borrow from family or friends than from banks – ranging from a low of 23% of youth in Benin, to a high of 73% in South Africa. In no country did more than 10% of youth have a bank loan (the actual use of these bank loans is not recorded in the database, and it is likely that much was not used for agriculture; thus, actual access to bank loans to finance agricultural activities is even lower).

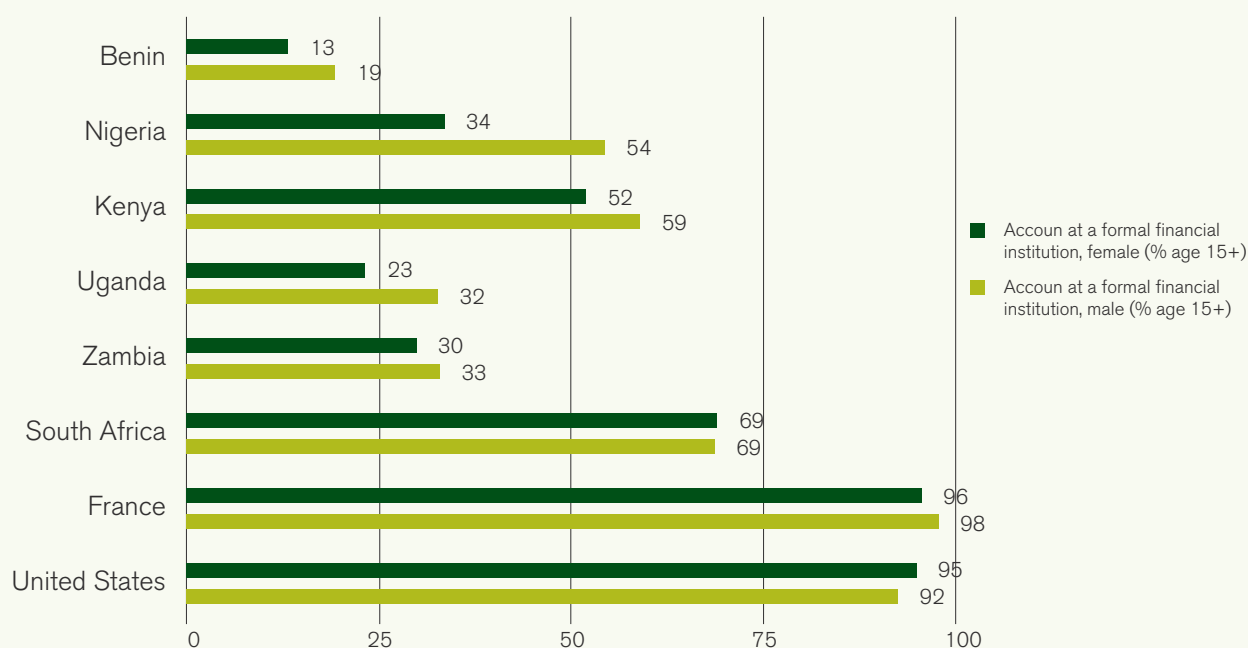
Benin's poor situation is representative of the currently low financial inclusion status in most Francophone West African countries. In these countries, legislation prevents youth below the age of 18 to have access to the formal banking system, and furthermore, the financial market is less competitive than in East African countries such as Kenya (Filmer and Fox, 2014). Moreover, note that in countries like Kenya and Ghana, youth under the age of 18 may open a savings account and/or obtain a loan with the co-signature of a parent or guardian (Zou, et al., 2015).

According to Demircuc-Kunt, et al. (2015), while the share of young African women who have a bank account has increased rapidly in recent years (growing by 18% between 2011 and 2014), there remain large gaps in access to financial services between young males and females. There is a significant gender disparity in ownership of bank accounts and usage of financial products such as savings and credit. In 2014, 25.1% of African women aged 15 and above owned an account at a formal financial institution compared to 32.7% of men. Fewer women had access to savings (13.5%) compared to men (18.4%). Access to loans products also followed the same trend, where women lag behind men in terms of access to formal loans. In 2014, 5.7% of women in SSA had procured a formal loan, compared to 6.9% of men. "Women benefit from only one tenth of the credit to small farmers and less than 1% of total credit to agriculture" (Triki and Faye, 2013).

The gender gap in terms of access to financial services is also heterogeneous across countries. Figure 4.2 shows that in most African countries, women over the age of 15 have less access to formal financial services compared to men in the same age group. This gender discrepancy also exists in developed countries, but the absolute percentage of men and women who have access to the formal banking sector is high (over 90%) compared to Africa.

⁴ http://www.swissre.com/corporate_solutions/industries/agriculture/Microinsurance_pays_USD_160000_after_drought_and_storms_strike_Kenyan_farmers.html. [accessed August 2nd 2015]

Figure 4.2 African women have less access to FFIs



Source: Global Financial Inclusion Database, World Bank (2015)⁵

The gender gap in terms of access to financial services between young men and women is due to specific barriers on both the demand and supply sides. Compared to men, young African women 1) have a lower level of financial literacy and competence, 2) face more time and mobility constraints, 3) have less opportunity for access to formal education, employment and entrepreneurship, 4) suffer from poor access to information and networks, 5) experience unfavorable

cultural and gender norms, and 6) often have no direct access to land (World Bank, 2013). Often, women can only have access to land through a male relative. Policies that target the financial needs of young women should consider these constraints and address them specifically. Overall, formal financial inclusion of the African youth cohort is low. The following sections briefly cover the specific factors that prevent youth access to finance.

Specific constraints related to youth access to agri-finance

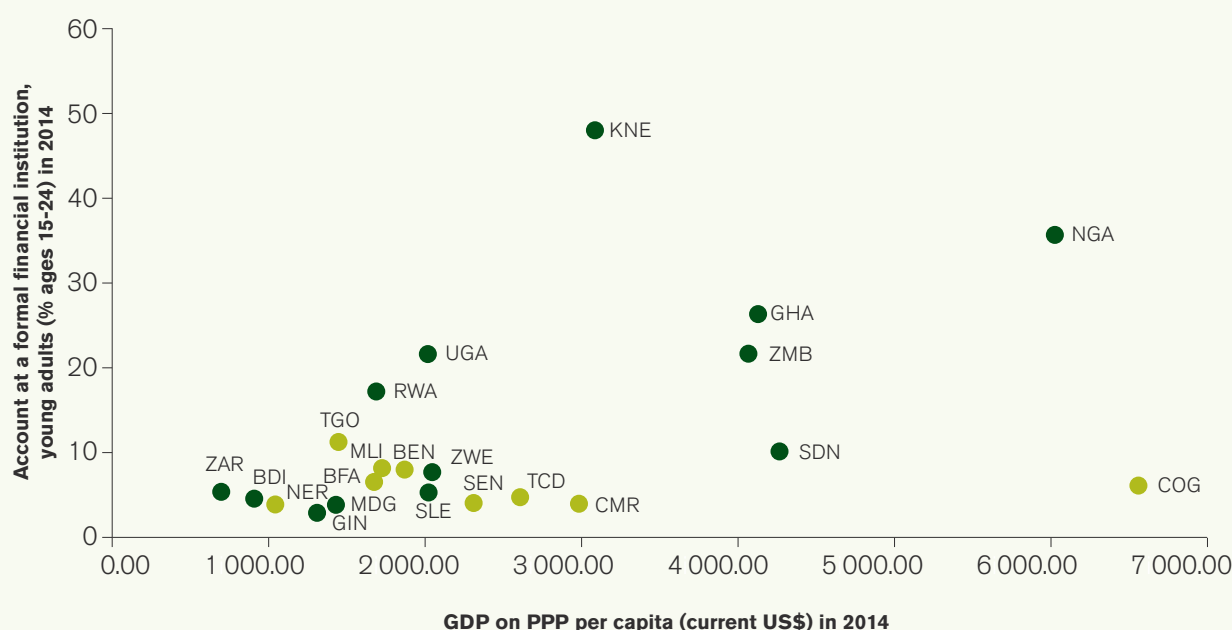
Several key factors influence youth's access to agri-finance: 1) the perception of financial services providers regarding youth and agriculture, 2) financial services providers' capacity, 3) youth's financial literacy, 4) ICT innovations in finance, and 5) the policy and regulatory environment.

Agriculture is considered as a risky activity in developing countries. Especially in remote and rural areas, agriculture is highly vulnerable to external shocks, for example from weather events, pest, and diseases. It is also seasonal (farmers only have earnings during a part of the year), and the production cycle is long (FAO, 2014). Insurance in agriculture is not well developed, yet insurance and credit usually go hand-in-hand to reduce possible lending risks for financial institutions and the risk of bankruptcy by youth engaging in agriculture.

Furthermore, lending to youth is considered even more risky due to their weak financial base and is often not attractive due to the small size of the loans requested relative to bank transaction costs. Formal financial service providers perceive lending to youth as risky because they often do not have a saving culture, minimal financial track records, and their education does not equip them with financial literacy. Youth often do not possess the assets needed to start a farm and may also lack experience in agriculture. This lack of experience, exacerbated by their limited access to agricultural value chains, also makes it difficult for them to engage in contract farming, which would normally be a valuable strategy to give more security to their loan requests. All these factors put together make it riskier to lend to youth in agriculture. They are best addressed by designing financial products tailored to the needs of

⁵ Note that this database did not provide these statistics for young women and men separately.

Figure 4.3 Financial inclusion and income per capita in selected SSA countries



Sources: Global Financial Inclusion Database, World Bank (2015) and International Monetary Fund (2015)

Legend: BEN = Benin; BFA = Burkina Faso; BDI = Burundi; CMR = Cameroon; TCD = Chad; ZAR = Congo, Dem. Rep.; COG = Congo, Rep.; GHA = Ghana; GIN = Guinea; KEN = Kenya; MDG = Madagascar; MLI = Mali; NER = Niger; NGA = Nigeria; RWA = Rwanda; SEN = Senegal; SLE = Sierra Leone; SDN = Sudan; TGO = Togo; UGA = Uganda; ZMB = Zambia; ZWE = Zimbabwe; CFA countries are represented by green dots and non CFA countries by blue dots.

young agripreneurs, by integrating them into agricultural value chains, and by providing them with non-financial services and, in particular, capacity building in finance, agriculture, agri-business and entrepreneurship.

Formal financial service providers often lack knowledge about agriculture, production cycles and agribusinesses. Micro-finance institutions and Savings and Credit Cooperatives (SACCOs) that have stronger networks in rural areas and, in some cases, a reasonable track record of lending to agriculture are constrained by their limited capital. Certain practices of financial service providers (FSPs), such as presenting contracts in small fonts, use of complicated language, or not providing oral information to clients who cannot read, hinder agricultural lending (EPRC, 2013). Financial service providers in SSA face high transaction costs, which translate into high interest rates for their loans, including those offered to youth. Informal sources of finance also charge high rates of interest, even though they often fund the rental and purchase of smaller-value productive capital and inputs.

Atkinson and Messy (2012) define financial literacy as: "a combination of awareness, knowledge, skill,

attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing". African youth's capacity to access and analyze the information required to carefully choose between financing options is often limited because many youth are not aware of the financial products available to them, or the eligibility criteria and the basic rules of financial transactions. In a number of African countries (Kenya, Uganda and South Africa), the financial literacy of citizens has been studied. Interestingly, in 2008 Kenyan youth had relatively good financial literacy compared to those in Uganda and South Africa (Nelson and Wambugu, 2008; EPRC, 2013; Struwig, et al., 2013).

The poor development of the financial infrastructure in SSA also hampers banks in providing loans to youth. For instance, few credit bureaus exist in SSA countries. This results in limited information on the potential and creditworthiness of young borrowers. Even more importantly, banks still make only limited use of the possibilities to use ICT to increase their reach in rural areas, and reduce the transaction costs of financial services relative to the fixed costs of the staff needed to assess loans (Filmer and Fox, 2014).

Table 4.1 Agri-finance access indicators in selected SSA countries

FARMING SECTOR	INDICATORS	MEAN	BURKINA FASO	RWANDA	MOZAMBIQUE	ETHIOPIA	TANZANIA	NIGERIA	KENYA	ZAMBIA	GHANA
Financing											
Access	Number of bank branches per 100,000 adult population	1.9	1.2	NA	1.6	0.8	2.0	1.3	1.4	NA	5.0
	Percentage of commercial banks lending to Agriculture (3 years) (%)	7	9	3	6	11	14	2	6	9	5
Cost	Average lending rates for Agriculture loans (real rates)	11	10	12	19	-9	5	15	8	17	22

Source: Agribusiness Indicators Synthesis Report 2014, The World Bank

Policy and regulatory environment for youth's access to agri-finance

In most SSA countries, the policy and regulatory environment is not favorable for financial inclusion of youth in agriculture. However, there is a noticeable effort in many SSA countries to remove barriers that limit youth's access to agri-finance. Beyond the policies of central banks that influence interest rates and changes in asset requirements in lending regulations, policies that support the use of ICT technologies can affect the availability and the cost of access to formal banking services such as savings, payments, and credit to underserved populations. Policies and regulations should focus more on enabling youth to have a secure place to open savings accounts and access to reliable yet affordable payment services. Doing so will improve youth's experience with financial institutions, and allow those institutions to learn more about the needs of youth and ease their access to loans in the future.

The policy and regulatory environment clearly plays a role in the level of youth's access to the formal banking sector in Africa. As Figure 4.3 shows, the financial inclusion of youth varies between SSA countries with similar income levels. Furthermore, the financial inclusion of youth in West and Central African countries within the CFA zone is relatively low compared to others SSA countries (Demircuc-Kunt, et al., 2015).

In 2014, Kenya and Senegal had approximately the same per capita income level, yet the percentage of young Kenyans having an account at a formal financial institution was eight times higher than the percentage of young Senegalese. Filmer and Fox (2014) identified four characteristics that explain the discrepancy in the level of youth's financial inclusion between countries in general:

1. The existence of a competitive financial sector, which prompts financial institutions to search for customers and supply products that are a carefully designed and priced for low-income households and youth;
2. The existence of a vibrant microfinance sector, delivering tailored financial products to low-income African households and youth;
3. The existence of a proportionate supervisory system of financial institutions, encompassing a 'test-and-learn' approach that enables innovation; and
4. The existence of a national strategy that includes the three preceding characteristics, and additionally the adoption by the government of an electronic system to execute all government payments to individuals (G2P payments).

⁶ <https://uidai.gov.in/> Accessed 3 May 2015

⁷ <http://arstechnica.com/business/2014/09/mastercard-backed-biometric-id-system-launched-in-nigeria/> Accessed 3 May 2015

What makes Kenya relatively successful is its forward-looking and innovative policy and regulatory environment. This has enabled the emergence of a vibrant mobile payment system, as well as a dynamic microfinance sector; in both cases, relying on the widespread use of ICT tools, leading to reduced costs of opening bank accounts and financial transfers. In contrast to Kenya, Senegal, like other West African and Central African countries that are members of the “*Communauté financière d’Afrique*” (CFA), had relatively little competition in the formal banking sector. In the recent past, Senegal and other CFA countries have had a regulatory system that prevented most innovations

that would improve financial inclusion. The two regional central banks in the CFA zone are strongly involved in financial regulation and the rigidity of these regulators prevents new entrants (such as telecom companies) in the financial market. Fortunately, innovations are currently taking place in the CFA zone. For instance, in 2012 regulations to enable the development of MFIs were adopted by all the West African Economic and Monetary Union (UEMOA) countries. Mobile carriers are increasingly being allowed to initiate a mobile banking business, such as ‘Orange Money’ in Senegal. The existence of a common regional regulatory system provides an opportunity for the rapid development of

Afoluwa Mogaji is a young Nigerian farmer who in 2012 started a “Green Collar Jobs” project to get young farmers involved in modern agriculture. The project has two components: the first consists of farmers (175 as of early 2015) who grow fruits and vegetables on what previously was unused government farmland (mostly irrigated), using idle government-owned equipment. In Mogaji’s words, “there are government-owned lands available in very remote areas in virtually every state of the country that farmers can use and pay for just within the period they use it – Pay As You Go.” (Business Day online, 26 October 2014).

The financing needs of farmers (both for investments and working capital) are met through the structuring of the project. Farmers are given land and equipment at reduced lease rates, provided extension support, and receive inputs on credit. With improved varieties and using precision farming techniques – and not facing significant upfront costs – these farmers rapidly earn back their investments.

The second component involves about a dozen young urban entrepreneurs who sell the farmers’ produce through temporary mobile markets (typically in wealthy urban neighborhoods) and direct sales (with delivery to the buyer’s premises). All strive to consistently offer a high quality of product.

Mogaji sees most opportunities in the value chain. “I will not advise a young graduate to plant cassava. I will advise him or her to go to the villages and buy cassava tubers and sell to the numerous cassava-processing plants all over the country.” (<http://africanfarmermogaji.com/node/7>)

In other countries as well there are projects that directly link middle-class consumers and farmers, often using mobile phones and social media as the platform for transactions. Generally, such projects remain funded by entrepreneurs’ own resources, hampering their potential for growth.

a harmonized system to spur financial inclusion in the West and Central African region.

Requirements for proof of identification, such as birth certificates, national identification cards, and other such documents, as well as age restrictions, hamper youth access to saving and payment services throughout Africa. Adopting regulations that allow the use of ICT technologies, in particular biometrics tools, can strongly reduce the cost of providing

financial services (the cost reduction is 50% for saving and lending; 20% for financial transfers) and improve their security (Filmer and Fox, 2014). The Indian government, for example, implemented a unique identification project based on biometrics rather than birth certificates, postal addresses and other documents⁶. A few countries like Kenya, Rwanda, Ghana and Nigeria have taken the lead in adopting national strategies and enabling regulatory frameworks that allow the use of technologies

⁶ OHADA is the French acronym for “Organisation pour l’Harmonisation en Afrique du Droit des Affaires” – in English “Organisation for the Harmonization of Business Law in Africa”. The OHADA Treaty covers 17 African countries, all former French colonies, mostly in West and Central Africa but also including the Comoros.

to reach low-income households and youth. For example, a biometrics system similar to that of India was recently introduced in Nigeria⁷. Technological innovation through mobile banking in low density areas with mobile phones, Automatic Teller Machines (ATMs), and point of sale devices will contribute further to the financial inclusion of youth, especially given that they are early adopters of new ICT technologies.

Apart from promoting the use of ICTs for mobile payments and mobile-based financing, regulation should focus on allowing innovation in the use of collateral and enabling market linkages that allow the reduction of risk in lending to youth. For instance, the recent development with the OHADA⁸ collateral registries' laws and the design of new secured lending and commercial laws have eased access to financing

by traditionally underserved small-scale businesses (Triki and Issa, 2013). Regulation should also focus on developing strong institutional enforcement strategies and helping youth understand the necessity to pay back their loans, as in the recent past many African governments have politicized loan access and repayment, leading to a perception of loans as non-repayable public transfers (Filmer and Fox, 2014).

Finally, it is important to keep in mind that financing mechanisms that are beneficial to young agripreneurs are also beneficial to others and, to a large extent, developing sound mechanisms that improve access to finance for young people that wish to become more involved in agriculture or to expand their existing agribusinesses is a matter of improving the overall policy and regulatory environment for agricultural financing.

Key Principles in Targeting Youth in Agriculture and Agricultural Financing Facilities

Ensuring that youth successfully participate in agriculture requires the development of innovative finance models. This can be done if financial services providers (FSPs), non-financial services providers (NFSPs) and government adopt key principles during the design of the products and provide a suitable environment for youth to express themselves.

In 2009, a worldwide survey and experiences of pioneering NGOs and FSPs permitted the development of six guidelines for the financial inclusion of youth and the reduction of the risk of lending to them (Storm, et al., 2010). From these emerging guidelines, three lines of action can be inferred that can ensure youth have access to financial services (Figure 4).

The first line of action consists of the assessment by FSPs of the needs and wants of young agripreneurs. This should be done through market research focusing on youth and the community in which they live. The results of this market research should allow the development of financial products and services that take into account the heterogeneity of youth in terms of age, sex, location, life cycle stage, and maturity of the agribusiness in which they are involved. This should include insurance to deal with specific agriculture-related risks.

In the second line of action, FSPs should identify suitable non-financial services needed by youth. For instance, the need for capacity building in financial literacy, the establishment of mentoring programs, education in business management and entrepreneurship, and the registration of youth with credit bureaus. For youth in agriculture, their integration in the local and international agricultural value chains is crucial for their access to markets and the reduction of the risk of default. The FSPs should decide whether they have the capacity to provide these non-financial services or whether it is much more suitable to partner with non-financial service providers such as Youth Service Organizations (YSOs), NGOs, credit bureaus, etc. (Storm, et al., 2010). Note that government and international organizations should also support financially and technically these first two lines of action to catalyze the development of financial products adapted to the youth in SSA.

The third line of action, led by the government, seeks to reduce the risk of lending to youth in agriculture essentially by creating opportunities for youth to express themselves, and by providing an enabling regulatory environment that permits a secure interaction with FSPs and dealing efficiently and fairly with complaints that may arise from both parties. Government and NGOs should also promote collective action within the youth cohort,

such as the creation of informal saving clubs and self-help groups. These collective actions should help to generate savings, which will improve access to financial services as a group and/or individually, and enable youth to initiate joint ventures in agriculture (Storm, et al., 2010).

Finally, the enabling environment should also facilitate the development of infrastructure that reduces transaction costs to increase access to financial services and to agricultural markets. The Internet should be made accessible throughout the

rural areas. The law should enable the use of ICT tools, e-banking, e-trades and e-business through mobile phone platforms. For further information on the principles related to the design of financial product adapted to youth and children, interested reader should refer to a report published by Child and Youth Finance International and The MasterCard Foundation Incorporated International (2014), which describes the children's rights and business principles (CRBP) and the child and youth friendly banking principles.

Agricultural Financing Facilities for Youth in Agriculture: an Overview

Traditionally, agriculture and youth have both been difficult to finance through formal financial institutions. In response, governments throughout Africa have in the past set up special schemes.

Agricultural financing schemes in SSA often involved state-owned banks providing subsidized credit to farmers. This model was unsuccessful and is therefore not discussed further here. In any case, most of the banks that were involved in such lending have long since become bankrupt (Gonzalez-Vega and Graham, 1995; Levy-Yeyati, et al., 2004; Micco, et al., 2007).

Starting in the 2000s, several governments set up special funds to support youth enterprises as a direct response to high rates of youth unemployment. Examples include the Botswana Youth Fund, the Kenya Youth Enterprise Development Fund, the Namibia Youth Credit Scheme, the Umsobumvu Youth Fund in South Africa (now the National Youth Development Authority), and the Youth Venture Capital Fund in Uganda (Ahaibwe and Kasiye, 2015). These funds normally combine credit at a subsidized rate with training for the beneficiaries. They often include mechanisms to reduce the risk of loan default. For example, Botswana's fund does not pay out loans to the borrowers, but rather, pays directly to the suppliers of assets to the borrowers. In Kenya, the government is committed to source 10% of its procurement needs from youth enterprises in order to reduce these enterprises' market risks (Ahaibwe, 2014).

In some instances, these funds have become rather significant. For example, the Kenyan government set up the Youth Enterprise Development Fund in December 2006. In its first five years, the fund advanced KES 5.9 billion (average exchange rate 2007-2011: KES 77 = USD 1.00) to more than 157,000 youth enterprises

(its target age group was 18 to 35 years).⁹ However, not all of its loans were successful. It has been found that when it lent to youth investment groups, through district committees (i.e., the government's administrative apparatus in each district) the repayment rate was less than 70%; this was in part because many beneficiaries treated the loans as grants. Lending through banks and SACCOs, the repayment rate was 95%. In Tanzania, the experience was similar: delivery of credit through commercial banks gave much higher recovery rates than through district administration accounts (Symacon, 2011).

By and large, these government funds mostly benefitted urban populations. This was even the case in Kenya, where it took until 2011 for the fund to introduce a special instrument for agriculture, the Agri-Vijana loans (see details in the section on value chain finance below). In Uganda, 25% of the businesses funded under the venture fund in its first year were in agricultural production, processing and marketing (Ahaibwe, 2014). Distribution of the funds often proved difficult. For example, in Uganda, two of the commercial banks that had become part of the Youth Venture Capital Fund when it was created in 2011 were removed from it in 2015 because of their failure to disburse loans to youths.

Government schemes to finance youth in agriculture also often took the form of settlement schemes (Smyth, et al., 2015). Land developed with the help of a government agency was made available to young farmers (graduates of farm colleges, as well as others interested in becoming farmers), and they are given some assistance in their start-up phase. These schemes can be found in most African countries, and began in some countries soon after independence. Many of

⁹ <http://www.youthfund.go.ke/the-youth-development-fund/>, accessed August 7th 2015.

these schemes have not been successful in keeping youth on the land. Settlement schemes were often abandoned, equipment provided by the government remained unused, and loans were not reimbursed. The reasons for failure were often poor provision of services (no electricity, no nearby towns with

entertainment options) and the lack of profitability of the farming ventures because they were not linked with organized value chains. Such dedicated government schemes could probably work better if they take into account the various financing modalities discussed below.

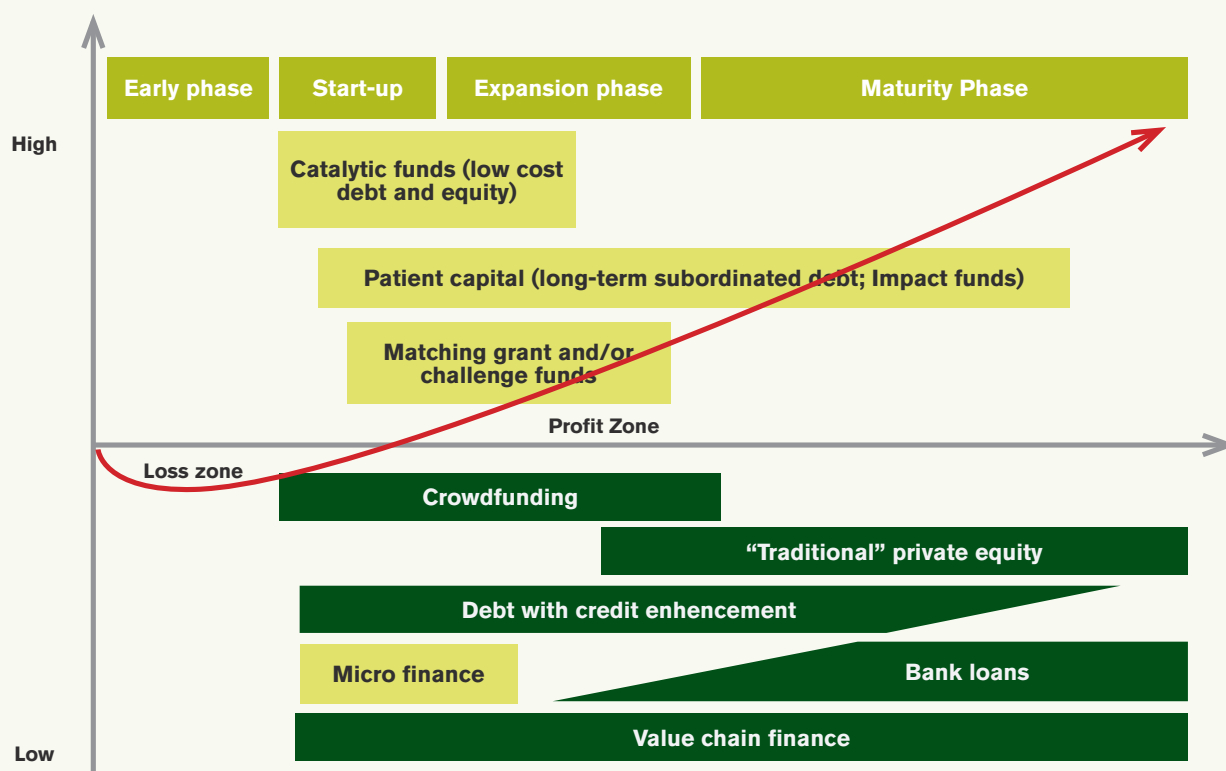
The Need for Innovation

When financial instruments and mechanisms are used that go beyond conventional products but instead adapt to the risk-return ratio and the maturity stage of youth's agribusinesses, then agri-lending can become attractive (Tibbo and Guyver, 2013). It should be noted that such innovative models facilitate agricultural lending in general, and that one should not single out youth as the only target beneficiaries – rather, young agripreneurs will benefit alongside other market-oriented farmers.

In Figure 4.5, two main groups of financing facilities can be distinguished. The first group of financing facilities (colored in light green) is generally more socially oriented and serves clearly stated development

purposes. Within this group, catalytic funds, patient capital, matching grants and challenge funds are well suited for the financial inclusion of youth in agriculture from the early development stage of their agribusinesses through to maturity. These financing facilities can deal with somewhat medium- to high-risk and low- to high-return youth agribusinesses. Microfinance institutions also fall in this group even though today, many MFIs have become commercially oriented; microfinance is well suited for start-ups and the early expansion stage of youth's agribusinesses, which present low to medium risk. However, note from Figure 4.5 that there is a vacuum of financing facilities in the early phase. As mentioned above, saving groups can fill this gap and support youth financial inclusion.

Figure 4.4 Agricultural financing facilities for youth in agriculture along the risk and profit continuum



Source: Authors, Wilson and Silva (2015), Tibbo and Guyver (2013)

The second group of financing facilities is commercially oriented (colored in green). It regroups private equity, debt with credit enhancement, bank loans, equity and debt-related crowdfunding, and value chain finance. This group of financing facilities is much more suited for the expansion and maturity phases of youth agribusinesses, which are characterized by medium to high profit and low to medium risks. However, it is also possible to craft such facilities for start-ups by using value chain finance, or loan-based and equity-based crowdfunding.

The following section focuses on four types of emerging and innovative financing facilities that are particularly suitable for the financial inclusion of youth agripreneurs: value chain finance, social impact investments, challenge funds, and crowdfunding. Crowdfunding and value chain

finance can fill the 'vacuum' between microfinance and bank loans (Figure 4.5). This vacuum currently constitutes a critical issue for youth-managed agribusinesses that are transitioning from the start-up phase to expansion and maturity phases. In fact, in many cases small ventures become too big for MFIs to handle, yet commercial banks are not well prepared to start working with them. This situation leads to a lack of finance for mid-size agribusinesses. Value chain finance and debt- or equity-based crowdfunding are particularly suitable to finance SMEs in the expansion stage. Traditional types of financing facilities, such as microfinance, conventional bank loans, or financing schemes that are part of large donor-driven agricultural development schemes are not described in this report. Interested readers should refer to Tibbo and Guyver (2013) and Meyer (2015).

Innovative Financial Models and Instruments for Youth in Agriculture

Value chain finance

Today's agriculture should be highly competitive, modern and dynamic. Yet the bulk of African agriculture – subsistence and much smallholder commercial farming – does not have these characteristics. The high population growth in Africa, coupled with rapid urbanization, will increasingly drive market changes. Today's consumers want high value-added agro-processed products that consistently meet high quality and safety standards. To provide products to this new and growing market, the agricultural sector has experienced over the last decades a growing concentration of control of activities along different value chains to ensure efficiency of supply chains via economies of scale (Miller and Jones, 2010). Enhancing the participation of youth in agricultural value chains (AVCs) is therefore an opportunity to increase their productivity and competitiveness, along with their access to finance.

Agricultural Value Chain Finance (AVCF) is defined by Miller and Jones (2010) as: "any or all of the financial services, product and support services flowing to and/or through a value chain to address the needs and constraints of those involved in that chain, be it a need to access finance, secure sales, procure products, reduce risk and or improve efficiency within the chain". They go on to note that AVCF allows FSPs to lower risk and reduce the cost of lending to agriculture. The existing relations within an agricultural value chain make this feasible. FSPs provide loans to young farmers against

contracts with trusted buyers of the future harvest (forward contracts) or against warehouse receipts from well-known and accredited storage companies. Hence, for youth in agriculture, AVCF allows access to credit that would not be available due to their lack of collateral and high transaction costs.

Value chain finance can be used not only to fund farmers, but perhaps more importantly, it also can be a vehicle for funding young entrepreneurs active throughout the AVCs. Examples could include: a venture by young people to provide services such as pesticide application, equipment maintenance or ICT-based advice to farmers; a cold storage transport company; a company that links farmers directly to urban consumers; or an exporter to high-value markets. The opportunities for young people in agriculture are probably most prevalent in this value-adding component of the value chain, rather than in primary production. As has happened in other parts of the world, the composition of agricultural GDP in Africa is expected to change in response to urban growth and an increase in average incomes. According to the McKinsey Global Institute (2010), by 2030 the potential revenue of primary production in Africa will have more than tripled from 2008, and most of it will come from horticulture (with an annual market size of USD 490 billion, compared to USD 138 billion for cereals and USD 112 billion for livestock by 2030). This implies a strong need for logistics services, as well as new infrastructure (handling

and packaging, and cold chains). The market size for production services will also increase rapidly, particularly as even high-technology solutions such as precision farming, drip irrigation and use of drones have become cost-effective for many African smallholders (Juma, 2012). Furthermore, the demand for processed goods will continue increasing: the potential revenue in the agricultural processing sector will stand at about USD 239 billion by 2030. Most of this demand will be urban, from consumers who will require well-organized value chains that deliver a high level of quality and food safety.

Contract farming – This is a “form of vertical coordination between growers and buyers-processors that directly shape production decisions through contractually specifying market obligations (by volume, value, quality, and, at times, advanced price determination); provide specific inputs; and exercise some control at the point of production (i.e., a division of management functions between contractor and contractee” (Little and Watts, 1994). This institutional arrangement often involves, on the buyer side, financial and technical assistance to producers; the pre-established agreements between the parties can be formal or informal but still binding (Miller and Jones, 2010).

Even though the effectiveness of contract farming to lift smallholders out of poverty is debated in the literature (Oya, 2012), this institutional arrangement constitutes an opportunity for youth to have both access to finance and to the market, and at the same time improve productivity via technical assistance provided by the client. Under specific conditions, contract farming can allow youth access to input and production services both in time and at reduced prices. Furthermore, it is an opportunity for youth to be integrated in value chains for perishable and high-quality products (fresh fruits and vegetables), for immediate processing (dairy products, tea) and for products that are labor intensive (French beans). Finally, contract farming provides FSPs with a sign of security and seriousness and delegates screening to a third party, the buyer. It follows that FSPs can provide youth with a loan, using the contract as virtual collateral (Miller and Jones, 2010).

African youth participation in contract farming and/or out-grower schemes is not well documented. But in Asia, it has been found that youth have a positive attitude toward contract farming, given that it provides them with access to information and that they are trained in agriculture (D'Silva, et al., 2010). Many experiences of contract farming in SSA exist (Oya, 2012), and it would appear to be a good vehicle for improving youth access to agriculture and finance.

Contract farming presents some challenges and risks, among which the more prominent is the risk of default

Pamela Anyoti Peronaci is a smallholder farmer in one of Uganda's poorest districts. In 2006, she started a nonprofit venture to promote economic opportunities and, with a group of 15 widows, started growing African bird's eye chili peppers as a cash crop. Soon, she converted the nonprofit into a social enterprise, named Sunshine Agro Products Limited, as a joint venture with a small Belgian cocoa and spices trading company.

With Root Capital, a large social impact investor providing five successive ever-growing loans, Sunshine was able to expand its business rapidly. Root Capital's first loan in 2010 was USD 48,000, and its fifth one in 2013 was USD 250,000 – much more than MFIs could provide, lent to a borrower who at least in the beginning would not have been an acceptable client for commercial banks.

By 2014, the number of farmers supplying Sunshine had grown from 15 to 924. Root Capital's loans were structured around Sunshine's export receivables – i.e., it was value chain finance. Creating a credit history with Root Capital permitted Sunshine to access other credit facilities, in particular to build a warehouse in 2012. In this case, the financing was not for a youth venture, but it remains a good example of the potential role that a social impact fund can play in financing a new venture that starts supplying an organized agricultural value chain.

Source: <http://www.rootcapital.org/portfolio/stories/small-chilies-bring-big-impact-rural-uganda>

by either party. This opportunistic behavior often takes the form of side-selling by producers at harvest if the price goes up, or loss of interest by buyers due to market changes, bankruptcy, or increased management costs in collection of harvest, input supply, etc. (Prowse, 2012). Furthermore, contract farming – especially in the presence of asymmetric power relationship – may be detrimental for smallholder farmers and particularly the youth. It can be inequitable and exclusive of the poorest farmers and be a disguised form of land acquisition and expropriation, as well as access to cheap labor by multinationals (ActionAid, 2015).

Drawing lessons from a recent case study in Tanzania, there are a number of conditions for ensuring effective and sustainable contract farming with smallholders, including the youth (ActionAid, 2015). These conditions include 1) transparency as a building block of the contract, 2) the role of government as a mediator, and 3) the design of appropriate legislation that protects farmers' rights. The regulatory environment is critical for the enforcement of contracts by either party.

Box 4.1 Financial leasing in Kenya that targets youth: AgriVijana Amiran Farmers Kit

AFK is a low-cost irrigation kit based on drip irrigation technology, manufactured by Netafim, a multinational company. Five thousand youth across Kenya are targeted by this initiative, with a total fund of up to USD 1.6 million. This has allowed the acquisition of 420 Amiran Farmers Kits (which include two greenhouses each, drip irrigation equipment for the two greenhouses, plus 400 m² of open field, training, life insurance for all members of the lending groups, and crop insurance against natural disasters). By the end of 2014, 420 greenhouses had been established in the country, with beneficiaries including 200 youth groups and some 15,000 farm families (Ndung'u, 2015).

The kit employs a water-friendly technology, which allows saving between 30-60% of irrigation water compared to other irrigation techniques. The kit is adapted to small farm sizes (especially in urban and peri-urban areas) and also to semi-arid and arid areas of the country. The Kit's lifetime is about eight years.

In principle, the loans target youth groups. Youth (18-35 years old) have to be organized in a group of ten to fifteen members. However, individuals can also apply, as long as they are employed or are already running a business. Distribution of the loans is through the government's administrative apparatus. In each of Kenya's 290 constituencies, at least 2 groups are to be funded. The groups have to have a young leader and must be registered in the constituency from where loan is requested. Youth in the group also have to have access to land and water and some knowledge and experience in crop production.

The size of the loan is approximately USD 3,822, of which the group should itself raise 10%. The loan matures in three years, and it is interest-free, i.e., subsidized. Repayment starts four months after acquisition of the lease and is adjusted in case the crop chosen by the youth group has a longer maturity period. The expected return is about USD 530 per season, which means USD 2,120 if production is done year-round.

The collateral required by the FSPs is the financed equipment itself, personal guarantees by group members, and the assignment of their crop sales. Youth groups that are backed by a sponsor/guarantor, such as the intended buyer of the crop, are more likely to be approved for funding under the scheme.

The performance of the scheme has been below expectations. Partly this is in line with the overall experience of the Youth Fund program that operates through constituencies where many beneficiaries are likely to see the loan as a grant. Another reason is the low uptake of the program by youth groups. Interest of Kenyan youth in agriculture still remains low, and in the face of continuous migration to cities, it has been difficult to form stable groups of at least ten members. Many of the loans were therefore taken out by individuals. The requirement of 10% own-capital has also been a hindrance, as has been the requirement for participating youth to show evidence of financial stability in the form of pay slips, M-Pesa statements or bank statements. Where greenhouses were constructed, lack of water often proved a problem (a result of changing weather patterns), and young farmers were unable to cope with the bacterial wilt that affected tomato production throughout the country (Ndung'u, 2015).

Implementing contract farming in high value-added sectors and market niches is an effective strategy to reduce the risk of side selling. Capacity building in contract farming should also be delivered to young farmers to enhance their knowledge about this form of value chain governance (Samah, et al., 2011).

Warehouse receipts – These are documents provided by a warehousing company to evidence the deposit of goods into the warehouse by a third party; the warehousing company will then manage the storage of goods on behalf of the depositor. Warehouse receipts can be used as collateral to facilitate youth access to finance. Such finance makes it possible to avoid early selling of produce when prices are not favorable to the farmer (Miller and

Jones, 2010). There are two main challenges to the development of warehouse receipt finance in Africa: 1) the commodity traded has to be standardized by type, grade and quality, which increases the cost of production at the producer level, and 2) warehouse receipt systems require appropriate legislation (Coulter, 2009). The use of ICT tools can enhance the establishment of successful warehouse receipt systems. Management information systems, as well as mobile phones and other forms of e-banking are increasingly well-developed innovations in this respect (Miller and Jones, 2010). Infrastructural improvements are also critical to support the development of warehouse receipt systems. Governments must invest in warehouses and in reliable road, rail, river, and port infrastructure.

An interesting example of a warehouse receipt scheme that uses ICT to compensate for a lack of physical warehouses is the e-warehouse receipt system developed by Farm Concern International (FCI) in Kenya.¹⁰ This e-warehouse system is still in operation and is coupled with technical support at the village level; it allows farmers to deposit and store their grain in simple and safe storage facilities at the village level, yet reaching economies of scale by 'virtually' bulking it with different villages. The e-warehouse software also links producers to financial services that are ready to issue a loan equal to 50% of the estimated value of their stored produce, thus empowering smallholders to wait until prices increase before selling their produce.

Financial leasing – This approach allows youth access to productive assets while simultaneously providing loan security to FSPs by making asset repossession easier in cases of default (Miller and Jones, 2010). It has a high potential for giving youth access to equipment in agriculture, and supporting medium- to long-term investment of non-perishable assets. Financial leasing is an effective strategy for banks to finance youth, especially in an environment where the legal means of loan collection is weak. However, it requires a high coordination of the three parties usually involved in a financial lease: the seller of equipment, the farmer, and the FSP.

In a growing number of countries, farm equipment leases have been successfully introduced in recent years. Examples include leasing activities by: CECAM, a MFI in Madagascar (Goldberg and Palladini, 2010); Farming and Engineering Services, an agricultural and irrigation equipment distributor in Malawi¹¹; Locafrique, a specialized leasing company in Senegal¹²; DFCU, a commercial bank in Uganda¹³; and Rent-to-Own, a social business providing productive assets to rural micro-entrepreneurs in Zambia.¹⁴

Box 4.1 describes the case of the AgriVijana Amiran Farmers Kit (AFK), which is a financial leasing product developed by the Youth Enterprise Development Fund (YEDF) and Amiran Kenya Ltd. to support young agripreneurs willing to be involved in greenhouse farming. This product finances youth in agriculture and is designed particularly to allow them to have access to inputs and necessary equipment for year-round

production. The equipment itself is the collateral and is coupled with group liability to secure repayment.¹⁵

Factoring – Just like warehouse receipt financing and lease financing, factoring is a way to remove working capital pressure from young agripreneurs, in this case for the post-delivery part of the value chain. The practice in many AVCs in SSA is that farmers are paid late – weeks after they have delivered their produce (1½- to 3-month delays in payment are quite common). Factoring permits suppliers to receive the net present value (minus a transaction fee) of their goods soon after delivery, rather than having to wait until the buyer decides to pay. Factoring can be cheaper than many other forms of finance, in particular if investors rather than banks provide the funds.

The risk taken by financiers in factoring is limited to a buyer refusing to pay when the payment is due, or going bankrupt prior to the payment date. This risk can often be insured, even in developing countries (the African Trade Insurance Agency, for example, provides such trade credit insurance in ten African countries). Factoring requires a smooth information flow on the trade that takes place – it cannot be used in an informal setting. Fortunately, value chains can create the conditions for such an information flow, in particular if ICT is used.

For example, a Kenyan company, Umati Capital, leverages technology to provide innovative supply chain financing to farmers and SMEs who supply larger entities. One of the sectors it has targeted is dairy¹⁶. The Umati platform provides an electronic backbone for the dairy value chain, from farmers delivering milk to the collection points to the final delivery to the dairy plant. Through the platform, farmers are paid within 48 hours of milk delivery, with buyers (dairy plants) repaying Umati Capital within 60 days. Farmers can request funds and be paid through their mobile phones. Two young Kenyan entrepreneurs set up Umati Capital, and similar opportunities exist in many other sectors. Apart from the entrepreneurs who set up such factoring systems, beneficiaries will include all those in the value chain – with the largest benefits accruing to young farmers who have the least access to alternative sources of funding.¹⁷

¹⁰ <http://farmconcern.org/e-warehouse.html>. Accessed August 2nd 2015

¹¹ <http://www.fesmw.com>, accessed August 7th 2015

¹² <http://www.locafrique-sf.com>, accessed August 7th 2015

¹³ <https://www.dfugroup.com/dfcu-leasing/>, accessed August 7th 2015

¹⁴ <http://rtoafrica.com/about-us/>, accessed August 7th 2015

¹⁵ <http://www.amirankenya.com/afk-2/>. Accessed August 2nd 2015

¹⁶ <http://www.ati-aca.org/index.php/newsroom/press-releases-75247/2014-press-releases/315-african-trade-insurance-agency-ati-backs-new-venture-umati-capital-ucap-that-aims-to-revolutionise-sme-finance-through-the-use-of-innovative-technology>, accessed August 7th 2015

¹⁷ <http://www.umaticapital.com/>. Accessed August 2nd 2015

Social impact investing

Social Impact Investment (SII) funds seek to maximize the financial return on investment, while at the same time generating a positive societal effect (Saltuk, et al., 2014). SII goals can range from capital preservation to a market rate of return, while their social goals include improving socio-economic, social or environmental conditions (Wilson and Silva, 2015).

As such, impact investment funds can be instrumental for international, regional and national organizations to leverage funds that increase youth agripreneurs' financial inclusion and the adoption of sustainable agricultural practices. SIIs are flexible and can operate in different geographical locations, sectors and asset classes. They have a wide range of return expectations and are supported by a diverse group of investors (Rangan, et al., 2011). SII also constitutes a strategy for sustainability for businesses: "social and environmental factors can impact a company's bottom line and therefore are important factors in business, markets and competition" (Porter and Kramer, 2011).

Even though socially conscious investments are not new, SII funds as dedicated investment vehicles emerged only a decade ago (Saltuk, et al., 2013). USA, UK, France and Australia are leaders in the development of the SII capital market (Wilson and Silva, 2015). While the SII market is still in its infancy, it is growing fast and attracts lot of attention (Kohler, et al., 2011). A survey of 125 impact investors around the world done by the Global Impact Investing Network (GIIN) and J.P. Morgan found that, while 80% of impact investors have their headquarters in North America and Europe, 70% of their current impact investment assets under management are in emerging markets, including Africa (Saltuk, et al., 2014).

The microfinance market, with over USD 50 billion in loans provided to more than 100 million micro-entrepreneurs in developing countries, was an early model of financial investment that addresses social needs while still aiming for a tangible financial return (Rangan, Appleby and Moon, 2011). The SII market is expected to grow as fast as the microfinance market has done – it showed a growth rate of 38% globally from the beginning of its growth phase in 1997 to 2007, with growth only starting to slow down after two decades (Addis, et al., 2013). The size of investments made by the 125 major social impact investors in 2014 is estimated at USD 12.7 billion, which represents a 19% increase of their investments from 2013 (Saltuk, et al., 2014). In terms of asset allocation, 42% of the capital invested is split evenly between microfinance and financial services other than microfinance. SSA accounts for only 15% of the total assets under management by SI investors. The main instruments used

Not long after Caroline Mtongolo and Waithera Macharia graduated from the University of Nairobi, with degrees in chemistry and economics, respectively, they decided they wanted to become agripreneurs. In 2015, they set up Zoi Investment Limited, a company with plans to develop mushroom farming (and also grow some other fruits and vegetables). In addition to growing its own crops, Zoi also aims to buy from other farmers for resell to local and international markets.

The choice of mushroom farming came from the realization that Kenya imports 150 tons of mushrooms a year (a number that is expected to rise with the growth of the middle class) and that mushrooms can play a significant role in maintaining healthy eating habits and combating obesity.

For Zoi Investment's mushroom farming idea, Caroline Mtongolo in June 2015 became one the year's 1,000 winners of the Tony Elumelu Foundation's challenge awards. Each winner receives USD 10,000 to help realize his/her business vision, and intensive business training.

Source: <http://cofounder.com/2015/05/17/caroline-mtongolo-mushroom-farming>, accessed on 23 June 2015.

by SI investors are private debt, private equity and to a lesser extent, public debt and equity-like debts (Saltuk, et al., 2014).

The good news for Africa, and for youth in agriculture, is that the prospect for SII in SSA is promising. In fact, many investors are planning to increase their investment in SSA, especially in the food and agriculture sectors, followed by healthcare, financial services and ICT. This is certainly due to the positive performance of the current assets under management in the SII market. In 2014, most SI investors worldwide reported that their portfolios are performing in line with both their impact expectations and financial return targets. Twenty percent of respondents even reported outperformance against their impact expectations and 16% reported outperformance against their financial return expectations (Saltuk, et al., 2014).

On the demand side, the SII market is currently driven by service delivery organizations such as social enterprises and NGOs. However, these organizations face some challenges in accessing SII. In fact, they have an inadequate investment readiness status and capacity to conform to impact assessment standards, coupled with the risk of mission drift (Wilson and Silva, 2015). Improving the financial skills and a better understanding of risk and its value is considered by Brown and Swersky (2012) as key factors in creating more investment-worthy social ventures.

On the supply side, high net worth Individuals and family offices and foundations are the more active providers of SII funds because they have more flexibility and autonomy of decision making compared to other traditional financial market investors, such as banks and financial service intermediaries (Drexler, et al., 2013). Hoh, et al. (2012) have noted the critical role foundations have played in developing SII market infrastructure and providing “catalytic” capital or actively investing through program-related investment (PRI) programs.

Program-related investment is unlike grant-making models traditionally employed by foundations and philanthropy; it uses sets of financial instruments, such as direct debt, equity, guarantees, and debt or equity funds to finance socially relevant investments in developing countries (Wilson and Silva, 2015). PRI investors invested USD 446 million in 2013, but the share of SSA was only 3% (Saltuk, et al., 2014). Two major impact investors in SSA are the Bill & Melinda Gates Foundation in the USA and the Department for International Development (DFID) in the UK operating largely through the Commonwealth Development Corporation (CDC).

The Gates Foundation adopted the PRI approach in 2009 to address poor health and extreme poverty globally. The Foundation is currently financing several PRI programs in Africa. This includes ASA International, which provides financial services to the poor (microfinance) via low-

interest loans in Africa and Asia, and also Agricultural Capital Fund, Root Capital, and ProCredit Holding. PRI programs are particularly suitable for improving youth access to finance and participation in agriculture. Box 4.2 provides a description of selected PRI programs.

DFID has also initiated impact investment programs that can contribute to the development of agribusinesses managed by youth in Africa. The rationale behind DFID's initiative is to foster the SII market by showcasing social impacts achieved via investments. In doing so, it expects to catalyze more commitments to impact investment on the global market which will lead to an increase in the number of enterprises that have clear social goals alongside their profit goals (DFID, 2015).¹⁹

Another organization that provides SII is Acumen, which created a venture capital fund to invest in pro-poor and social businesses in developing countries. As an example, in 2012 Acumen invested USD 1.8 million in a modern Ghanaian farm hub called GADCO20 that will likely impact the lives of 25,000 people by improving market access and agri-services to smallholders producers.

Besides large investors, individual citizens are also able to participate in SII markets, whether through their investments in the local community, through pension funds with a social return element, or through equity crowdfunding platforms. Citizen participation to the SII market is critical for its long-term success (Wilson and Silva, 2015).

Challenge funds

“A challenge fund provides grants or subsidies with an explicit public purpose between independent agencies with grant recipients selected competitively on the basis of advertised rules and processes who retain significant discretion over formulation and execution of their proposals and share risks with the grant provider” (O’Riordan, et al., 2013). Challenge funds are important potential sources of finance for youth involved in agriculture, and are currently being implemented in SSA. They are usually supplemented with capacity building activities in business skills, mentorship and entrepreneurial skills. Their development impact remains to be proven, however (Elliot, 2013). Among the challenge funds operating in Africa is the Africa Enterprise Challenge Fund (AECF), which has an Agribusiness Africa Window that co-funds “successful applicants with grants and repayable grants of between USD 250,000 to USD 1.5 million”; The MasterCard Foundation's Fund for Rural Prosperity – a USD 50 million challenge fund to extend financial services to people living in poverty; the YouthStart project, which is a partnership

between the United Nations Capital Development Fund and The MasterCard Foundation that provides capacity building to FSPs willing to target the youth; and the Tony Elumelu Foundation, which mainly supports the development of start-ups by youth in SSA.

To illustrate the impact that such funds have, and their growing relevance for young entrepreneurs, consider the case of AECF. Established in June 2008, AECF is hosted by the Alliance for a Green Revolution in Africa (AGRA). It is a USD 207 million challenge fund that is being sponsored by the governments of Australia, Denmark, Netherlands, Sweden and the United Kingdom, as well as the International Fund for Agricultural Development (IFAD). This fund provides, through competitions, grants and repayable grants to small- and medium-scale enterprises (SMEs) involved in agriculture and agribusiness, but also other sectors such as renewable energy, adaptation to climate change, information, and finance. AECF achieves high leverage: private businesses contribute on average 3.1 times

¹⁸ <http://www.gatesfoundation.org/How-We-Work/Quick-Links/Program-Related-Investments>, accessed August 7th 2015.

¹⁹ <http://www.theimpactprogramme.org.uk/the-impact-programme/> Accessed May 3rd, 2015

²⁰ <http://acumen.org/investment/gadco-cooperatief/> Accessed May 3rd, 2015

the funds received from the Fund. Through this AECF support, 3,752 jobs were created between June 2008

and December 2012 in Africa. About 51% of these jobs were for youth under the age of 35.²¹

Crowdfunding

This is a novel and fast growing financing model, which essentially uses the Internet to connect borrowers and lenders (Bouaïss and Maque, 2015). Crowdfunding can enable youth in agriculture to raise funds from multiple individuals through donations, presales/rewards, debt, or equity (Raymond, 2014). The approach has emerged as a new way of raising funds after the 2008 financial crisis, when traditional banks reduced their funding of artisanal businesses, start-ups, and entrepreneurial enterprises (InfoDev, 2013). Crowdfunding can be seen as a web-based extension of the informal finance mechanism used by youth (i.e., funding from family, friends, village saving clubs, etc.) that allows them to reach more potential contributors, locally and globally.

Since 2008, crowdfunding has expanded tremendously in the developed world, especially in the United States, Europe and Australia. In 2013, the global crowdfunding market was worth more than USD 5.1 billion, and is expected to reach a market size of USD 96 billion in 2025 (Raymond, 2014). Even though crowdfunding finances mostly artistic and technological projects, agribusinesses are increasingly raising funds via this mechanism. For instance, in the USA, Barnraiser is a crowdfunding platform specifically designed to finance food and farming innovators with the vision to establish a healthy food world. Innovators are producers of healthy and artisanal foods, community kitchens and organic farms. Interestingly, crowdfunding is also being used by young Americans to establish themselves in farming by financing land acquisition, equipment and supply startup costs, which can reach USD 300,000 for individual ventures. The crowdfunding platform 'Kickstarter' has 4.7 million contributors, and is used by many young American farmers to finance their establishment in agriculture. More than 600 farming projects, including dairy, chicken cooperatives, and organic produce, were thus financed in 2013 (Wessler, 2013). Following this outstanding growth in developed countries, the crowdfunding market is expanding in SSA due to the rise of the middle class, the rapid penetration of mobile technology, and strong demand from entrepreneurs (Meyer, 2015).

Crowdfunding is increasingly being used to finance agriculture and potentially youth agripreneurs in Africa. 'Kiva' is a prominent crowdfunding platform that combines an online platform with field partners to deliver loans to poor, unbanked, and underserved in the developing world.

Kiva allows a minimum loan size of USD 25 and is run by 450 volunteers around the globe. Since its creation in 2005, Kiva has allowed approximately 1.3 million lenders to provide more than USD 700 million in loans via 295 field partners in 86 countries. A little more than 1.6 million borrowers received an average of USD 416.50 through Kiva. The average loan made by a Kiva lender is about USD 10. The repayment rate of the loans is high, at 98.76%. In Africa, Kiva has 110 field partners through which loans are disbursed to the borrowers. These field partners are usually MFIs that review the loan requests, post them on Kiva platforms, and collect reimbursements. Also note Kiva Zip, an interest free model being tested in the USA and Kenya that relies on organizational testimonies about recipients in lieu of interest or collateral.²²

KIVA is not the only crowdfunding platform in Africa with the potential to finance youth in agriculture. 'Homestrings', for instance, allowed entrepreneurs in more than 20 African countries to leverage funding especially from the diaspora and from impact investors. In 2013 this crowdfunding platform mobilized USD 25 million with a minimum investment of USD 1,000. It has a special focus on Kenya, Ghana and Nigeria (InfoDev, 2013). 'Startme' is another crowdfunding platform with reach in Africa and a focus on financing cause-related campaigns (Raymond, 2014).

To sustain the development of crowdfunding platforms in SSA and the inclusion of youth agripreneurs to this funding mechanism, governments must establish a conducive environment via favorable regulations and the development and access to ICT. For example, companies should be free to raise equity as well as grants and loans through crowdfunding, without undue limitations (other than on the required level of transparency) from securities or banking regulations. Cultural acceptance and trust between investors and investees are also important challenges affecting the rise of crowdfunding in Africa. Lastly, young agripreneurs seeking funds from crowdfunding platforms should be able to present innovative and compelling projects, which have to be backed by credible peers or the 'crowd', such as accredited local financial institutions, international NGOs and value chain actors. In doing so, the youth increase the trust of investors to participate in their project and reduce the risk of lending via this platform (Meyer, 2015).

²³ <http://www.newamerica.org/youthsave/> [Accessed August, 2nd 2015]

²⁴ <http://www.unCDF.org/en/youthstart> [Accessed August, 2nd 2015]

Conclusions and Recommendations

Financing youth in agriculture is a must. Financing mechanisms that are beneficial to young agripreneurs are also beneficial to others, and to a large extent, developing sound mechanisms that improve access to finance for young people that wish to become more involved in agriculture or to expand their existing agribusinesses is a matter of improving the overall environment for agricultural financing in a country. A few concluding points, specifically about youth should, however, be made.

Limited access to formal sector finance, both for investments and for working capital needs, is a greater constraint for youth than for older entrepreneurs, as they have less assets and less access to informal finance. Female youth in SSA face even more challenge in accessing agricultural finance than their male counterparts.

Hard data on this problem, however, are still somewhat scarce. It is important for each African government willing to improve youth financial inclusion to produce and share reliable statistics on youth employment in agriculture and their financial inclusion. In this respect, the design of a system of monitoring and evaluation on the financial inclusion of youth in agriculture is critical to support learning-by-doing processes and enable the continuous design of products and services and effective policies and strategies. It is worth mentioning such initiatives as Findex, YouthSave²³, and YouthStart²⁴ – research activities that have significantly contributed to the current growing knowledge on youth and financial inclusion in Africa. Furthermore, a few newly created platforms, such as <http://finclusionlab.org/>, <http://fspmaps.org/> and <http://finclusion.org/>, are significantly improving the availability of information related to financial inclusion in Africa and can be adapted to include more information specific to youth and agriculture.

Young agripreneurs, having fewer assets, will especially benefit from forms of finance that do not require fixed collateral, but rather are based on the expected future production/sales of the borrower (through contract farming or value chain arrangements), or on floating assets such as equipment (leasing) or commodity stocks (warehouse receipt financing). For the same reason, young agripreneurs can also benefit greatly from factoring, as it removes a considerable part of the working capital burden of an enterprise (it no longer needs to finance the deferred payment conditions that many buyers want).

Young agripreneurs, many of them relatively well educated, may spot emerging market opportunities and formulate high-potential business plans to realize such opportunities. Unfortunately, African banks rarely provide financing just on the basis of a business plan, and especially not for young, inexperienced entrepreneurs. There is also a scarcity of venture capital firms on the continent (and moreover, most agricultural ventures are too small for them). Therefore, impact investment and challenge funds fill a critical gap in the market. Such funds should continue to be supported, including by development partners. Their country coverage in Africa should be broadened.

The need to improve the situation in African agriculture is evident to many people. Also, many urban consumers are showing an increasing interest in healthy food chains, which implies sound, socially and environmentally sustainable production methods, and well-managed value chains to bring produce from farm to fork. As the success of crowdfunding sites show, in developed countries consumers are increasingly willing to invest themselves in making this happen; such consumer engagement could be promoted in Africa too. Crowdfunding platforms need support for further expansion, and governments should remove all barriers that prevent them from operating properly.

Many of the traditional schemes for improving youth involvement in agriculture were based on settlement schemes: give youth land, and provide them with advice and training. However, experience has shown that such schemes rarely work. To improve youth involvement in the sector, full value chain must be covered, ensuring that farmers, if they grow the right product, will indeed have attractive earnings. Furthermore, quality of life issues matter. Good living conditions, including access to the Internet, should be part of the design of youth settlement schemes.

Inclusion in well-organized agricultural value chains addresses many of the prime constraints that youth face when becoming involved in agriculture. Markets must be reasonably secure, inputs provided on credit, the availability of additional funding against the security of future sales, access to technical support, well-established logistics to bring goods to market, etc. The growth of African cities and the increasingly sophisticated demand of many of their denizens create large opportunities for the development of short-distance (national or regional) food value chains

²³ <http://www.newamerica.org/youthsave/> [Accessed August, 2nd 2015]

²⁴ <http://www.uncdf.org/en/youthstart> [Accessed August, 2nd 2015]

in the continent. While supporting the development of such chains they should not be focused on youth alone. It is clear that the youth will be among the main beneficiaries.

Many of the opportunities for youth in agriculture are not in primary production, but elsewhere along the value chain, from advisory services to treatment of crops, to storage, market linkages, processing and so on. African banks should develop expertise in value chains so that they understand where such opportunities arise, and how young entrepreneurs propose to capture them. Governments and their development partners who aim to enhance agricultural finance, for example by the creation of guarantee schemes, should consider how their schemes can be made to include specific support for value chain ventures other than primary production.

Young entrepreneurs often lack experience, and training and mentoring greatly enhances their chances of success. In this regard, using such methods as incubation, intensifying hubs and accelerators, business development training for agribusinesses, and their

integration to international and local value chains, can allow them to become bankable. Good financing schemes for young agripreneurs include sound training and mentoring services.

Helping a young agripreneur establish herself in a value chain and providing her with intensive training and mentoring greatly reduces the risk of failure of her enterprise (Youth Business International, 2010). Banks, however, may not be fully aware of this, and not take it into account in their loan approval procedures. In this situation of information asymmetry, it may well make sense for an agency providing agripreneurs with such support to offer partial credit guarantees to banks, at a rate that is likely to bring revenue to the agency.

The instruments highlighted above can be effective if, and only if, government and international development organizations provide strong support to improve policy and regulatory frameworks in Africa. They must build not only the capacity of young agripreneurs, but also that of the institutions in the formal financial sector that can work with and support them in their endeavors.

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Chapter 5

ICT and Youth in Agriculture

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KEY MESSAGES

ONE

While the agricultural sector is traditionally not very popular among youth in Africa, notably because it lacks policy support, ICT innovations are contributing to improving its image. They advance value chains, providing new employment opportunities, and attract more young people to the sector.

TWO

Facilitating cheaper and more reliable access to ICT devices and connectivity is needed to accelerate ICT adoption among youth in agriculture, especially young farmers and agripreneurs. Efforts in this field must go hand in hand with increased capacity building in ICT use, tailored towards agribusiness development.

THREE

ICT entrepreneurship and innovation development in the agricultural sector is a recent development that offers new employment opportunities to African youth. It needs to be further promoted in all African countries and needs multi-stakeholder support to strengthen its profitability and effectiveness.

FOUR

African agricultural educational institutions should include or strengthen courses on ICT innovations in their curricula. This is essential to nurture a generation of young agriculturalists fully prepared to take advantage of ICT innovations in their professional career after graduation.

FIVE

There is a need to strengthen ICT use in agriculture by public and private institutions through awareness creation and capacity building. This involves improving equipment in ways that enhance work environments and make them more conducive to innovations by youth in agricultural professions.

Introduction

For a large proportion – more than 65% – of the inhabitants of sub-Saharan Africa, agriculture is the main economic activity and source of livelihoods. Presently, it contributes about 32% of the region's GDP (Oluoch-Kosura, 2013). Furthermore, due to the current structure of the economies of many SSA countries, it remains an important and a viable sector for development and prosperity.

Even so, agriculture and food production in Africa still largely rests on subsistence farming by smallholders, who are responsible for up to 90% of the food produced on the continent (Wiggins and Keats, 2013). Many of these farmers produce under rain-fed conditions in areas dominated by degraded lands – and being made less productive by climate change – with limited or no access to such vital inputs as robust, higher yielding seed, and chemical fertilizers that can improve soil fertility and increase production (Livingston, et al., 2011; Wiggins and Keats, 2013). Smallholder farmers in Africa also have low access to agricultural technologies that could enhance their production capacities, as well as reduce pre- and post-harvest losses through proper processing and storage. In addition, because of their poverty levels, smallholder farmers often lack access to adequate financing for investment in farming as a business, resulting in a vicious cycle of poverty and malnutrition.

These challenges, combined with persistently low levels of government investment in agriculture and rural infrastructure and discriminatory policies that prioritize urban development, have discouraged many young people from appreciating farming as a profession and pushed many youth off the land to seek 'better lives' in urban centers. For many youth, agriculture is seen as a backbreaking, low-output, and drudgery-filled profession that is not lucrative enough and cannot be depended upon for a sustainable livelihood (YPARD, 2011; Montpellier Panel, 2014).

However, in the last 10 years or so, riding on the back of increasing mobile and Internet connectivity in SSA countries, the use of information and communication technologies (ICTs) is changing the agricultural landscape in Africa. It is not only helping to bring more youth back into agriculture, but also retaining young farmers already involved in the sector.

This chapter aims to assess the current status and relevance of ICT use by youth (aged between 15 and 35 years) in the agricultural sector in Africa, with specific focus on the linkages between ICTs and the present realities (benefits) and future trends of youth involvement in agriculture in the region. The inherent challenges and opportunities in providing support for increased ICT use by youth will also be assessed and policy recommendations will be put forward to decision makers and other stakeholders.

Reaffirming the Relevance of ICTs for Agriculture and Youth

This section clarifies the relevance of ICTs in African agriculture and the status of its use in the sector. In

addition, it discusses the rationale underlying the use of these technologies by youth in agriculture.

Diversity of ICTs for agriculture in Africa

ICTs in Africa have conventionally been “based on indigenous forms of storytelling, song and theatre, print media and radio.” But the arrival of modern ICTs – especially mobile technology and the Internet – has changed the way information is shared and the speed of communication all over the continent (Conway, 2012). It has also reduced the cost of accessing information and new knowledge, and is creating many new opportunities in different sectors of African economies, including agriculture (Juma, 2011).

Traditional media, such as radio, TV, print, and video, are still relevant communication channels for

African agriculture. Apart from email and websites, the use of which are becoming commonplace, even in the agricultural sector, modern ICT devices and applications used in agriculture now include computers, tablets, mobile phones, TV, satellites, office software, short messaging services (SMS), social media, geographical information systems (GIS), and drones [the use of which is being explored in some African countries, such as Ghana (Newsghana, 2015)]¹. Not all forms of ICTs are yet fully applicable to agriculture in the African context. Some are more relevant than others based on factors like cost, accessibility, applicability, user profile, and so on.

¹ <http://www.detroitnews.com/story/business/2015/07/06/farm-use-drones-take/29792757/>

Below is a brief discussion of a few prevalent ICT devices and applications (others will be discussed in the section dealing with ICT uses by young farmers and agripreneurs).

- **Mobile phones and SMS:** The mobile phone is now widely used in Africa. The SMS is a messaging service of the web or mobile phones that enables users to exchange short text messages with their devices. SMS is hugely popular, in Africa and globally. Many innovative ICTs for agriculture in Africa are SMS-based²
- **Online TV and videos:** Videos have been traditionally used in Africa to disseminate agro-advisory information, if required in local languages, through a variety of channels. Online videos can be watched on a computer, a tablet, or a mobile phone via websites like YouTube and Access Agriculture³, provided there is good connectivity. Dedicated TV programs for (young) farmers, such as the 'Shamba Shape-Up' TV show in Kenya, are available in some countries.
- **Online radio:** The radio is perhaps one of the most effective ways to pass information (notably in local languages) to farmers and rural households in most developing countries, whether in Africa or elsewhere – provided the content of the message is packaged in an appealing way (Chapman, et al., 2003; Farm Radio International, 2008; Nakabugu, 2001). Agricultural audio files and programs can be downloaded from the Internet on many websites. Similarly, some community/rural radio stations that broadcast agricultural programs (among others) are providing online streaming (Ndiaye and Lohento, 2008).
- **Office software:** This refers to applications used to process text or analyze data, such as Microsoft's Word and Excel programs; OpenOffice Writer and Calc; and Apple's Pages and Numbers. Text editing software and spreadsheets are particularly useful for young farmers as they are widely available, sometimes embedded in new computers, can be free of charge and are indispensable for efficiently processing production data and finances. Still, in rural areas, many young farmers lack the literacy needed for them to use these basic tools.
- **Social media:** These can be defined as electronic information and communication platforms that enable users to easily create and disseminate content on digital networks and engage in interactive communications (Kaplan and Haenlein, 2009). Social media platforms like Facebook and Twitter are very easy to use and have become effective information-sharing tools for tech-savvy farmers, especially youth.
- **Blogs:** These are now widely used as primary external institutional communication platforms, and are easily created and published on freely available platforms⁴ when agricultural institutions cannot afford the time or cost of creating a proper website. Such social media tools are increasingly used as business promotion platforms (for example, in the marketing of agricultural products).
- **GPS and GIS:** Geographic information systems (GIS) enable the capture, analysis, management and display of geographical and spatial information (Maliene, et al., 2011). They can include the use of GPS (Global Positioning System) receivers, which connect to satellites to facilitate access to locations. The GPS has been notably beneficial to agriculture in monitoring climate variability, and for providing current weather forecasts for early warning systems that guide decision-making by farmers and relevant government agencies (Pearson, 2012). Digital cameras and mobile smartphones are now commonly embedded with the GPS technology.

This report will not discuss the use of traditional ICTs, such as off-line radio, TV, video, and printed newspapers. Rather, it will focus on the advent of more recent ICT devices and applications that are bringing new opportunities and challenges.

ICT development and status in Africa

The use of ICTs in Africa (the mobile phone and the Internet specifically) has consistently advanced over the last ten years. The number of people connected to the Internet via fixed or mobile devices is increasing rapidly. African farmers, especially the youth, have not been left out of this ICT explosion. The percentage of individuals using the Internet grew from 10% in 2010 to almost 20% in 2014 (ITU, 2014).

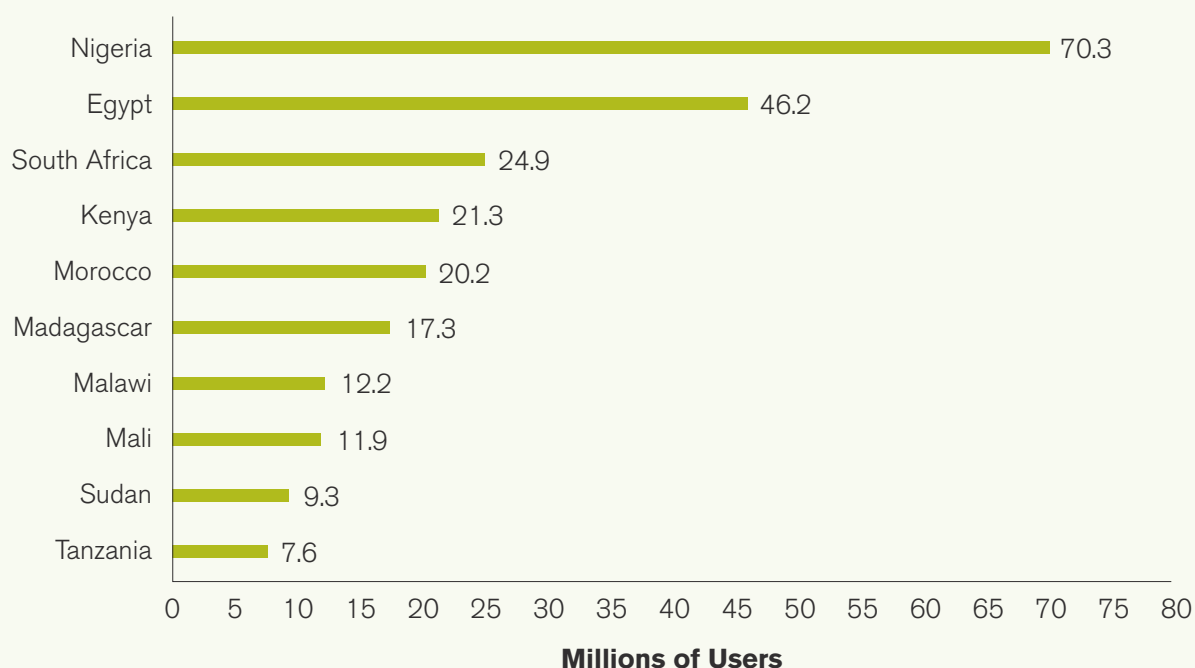
From a 2% penetration rate in 2010, mobile broadband penetration has grown to about 20% in Africa. Furthermore, by the end of 2014 mobile phone subscriptions reached about 69% in Africa according to the same International Telecommunications Unit (ITU) report cited in Figure 1. In 2014, there were 754 million mobile connections across SSA, served by over 35 mobile operators (Macharia, 2014). Africa Renewal,

² Currently in Africa, many mobile messaging services are actually based on the technology called USSD (Unstructured Supplementary Service Data) which may look similar to SMS for the non-technical user.

³ <http://www.accessagriculture.org/>

⁴ Free platforms such as www.blogger.com, www.wordpress.org, etc.

Figure 5.1 Africa's top 10 Internet countries, Q2 2014



Source: Adapted from internetworldstats/stats1.htm

an Africa-focused United Nations publication, reported an expected subscription level of 1 billion by the end of 2015 (Sambira, 2013). Ghana and Seychelles, for instance, have mobile subscription penetration rates in excess of 100% (Macharia, 2014). However, the number of subscriptions is not an accurate representation of the actual number of people who own mobile devices (many people own several SIM cards), but it does reflect the increased accessibility of mobile phones and other devices (e.g., tablets) across all population groups.

At the center of this ICT boom is increased affordability spurred by a proliferation of cheaper mobile phones, increased mobile and Internet infrastructure coverage (including in rural areas), decreasing access rates, and a growing market of ICT applications and content platforms (Deloitte, 2012).

Even so, it must be noted that the cost, and therefore the penetration, of these ICTs are still beyond the reach of a lot of rural dwellers and many agricultural stakeholders in Africa.

ICT Potential for Agriculture Along the Value Chain

ICT potential is discussed here in relation to four specific aspects of the agricultural value chain:

1) input supply and production; 2) post-production;

3) marketing and trade;

and 4) access to financing that supports value chain activities.

Input supply and production

ICTs have the potential to increase farm productivity by supporting the efficient use of key resources like water, fertilizers, and land (Deloitte, 2012). Farmers can now use ICT tools to manage their farming activities, from crop selection to the monitoring of production (World Bank, 2011).

Instead of waiting for periodic agro-advisory services from overstretched extension agents, African farmers and

agripreneurs can now obtain needed information, such as weather forecasts and output market prices, directly on their phones. ICTs are also used to find the best locations and prices of such inputs as seed and fertilizers. In Nigeria, for example, the government's e-wallet program, which leverages farmers' access to mobile phones, enables farmers to obtain subsidized inputs that raise their productivity (Iboma, 2014; Okuseinde, 2014).

Box 5.1 Nigeria's e-Wallet for agro-inputs program

Under Nigeria's e-wallet for agro-subsidies program, "farmers received subsidized seed and fertilizer vouchers on their mobile phones – or e-wallets – which they use just like cash to buy inputs directly from the agrodealers. Within one year, the e-wallet reached a total of 1.7 million farmers. Fertilizer companies sold USD 100 million worth of fertilizers directly to farmers, instead of the government. Seed companies sold USD 10 million worth of seeds directly to farmers. Banks lent USD 20 million to seed companies, fertilizer companies, and agrodealers. The default rate under the scheme was zero percent... (and) targeted farmers produced an additional food supply of 8.1 million MT, which was 71% above the target set for the program in the first year."

Source: Adesina/IFAD 2013

Box 5.2 ICTs, youth and agriculture – Quick Facts

- 1.1 billion – estimated population of Africa
- 35% – proportion of total African population classified as youth (aged 15-35 years)
- 364 million – number of African youth aged 15-34 years
- 10 million – minimum number of African youth entering the labor market each year
- 65% – percentage of Africans engaged in agriculture
- 60% – percentage of unemployed youth in Africa
- 69% – proportion of Africans with a mobile phone subscription as of 2014
- 90% – percentage of young farmers using ICTs for agricultural activities (based on a survey done in western Kenya)

Source: UNFPA (2010), UNDP (2012), PRB (2013), IICD (2013), ILO (2013), ITU (2014b), Montpellier Panel (2014), AUC (2015).

Post-production – processing and storage

ICTs are also important to agriculture at the post-production stage. ICTs are employed at the processing stage in product identification and differentiation, smart packaging for appeal, and labeling and traceability to address food quality and safety concerns. Technologies like radio frequency identification (RFID) tagging are used for tracing and accessing ecological footprints in livestock production.

ICTs have also helped prolong the shelf life of products through proper storage. They underpin warehouse receipt and commodity exchange systems, in which farmers deliver produce to a warehouse just after harvesting, to prevent deterioration and to provide adequate time to get more favorable prices. Warehouses in such systems depend on ICTs to manage products and inventories, record movements, handle grading and sorting, and to develop consistent valuation methods for the products (Deloitte, 2012; CTA, 2013a).

Marketing and trade

One of the most prevalent uses of ICTs by African farmers is for marketing. They use ICTs to determine current market prices and gain access to markets, to bargain and conduct transactions, and to send and receive money. Having up-to-date market information on commodity and input prices, as well as demand trends, boosts farmers' negotiating positions and informs decisions about when and where to buy and sell, what to produce, and the quantity and quality of future production (Stienen, et al., 2007).

ICTs help farmers to improve marketing logistics and reduce transportation costs. This increases profitability by facilitating farmers' capacity to organize themselves into groups to achieve and leverage economies of scale. Aggregation of produce by farmer groups results in the marketing of larger volumes, which can improve access to bulk buyers and increase collective and individual profits (World Bank, 2011).

Many ICT applications that help farmers connect to markets abound in Africa. Examples include Esoko in Ghana and other countries, e-Soko in Rwanda, Google

Trader and Infotrade in Uganda, M-Farm and OLX in Kenya, and nanoCredit in South Africa.

Access to finance

One of the challenges with which African farmers have always had to cope is inadequate access to finance for purchasing inputs and to expand or commercialize their farms. ICTs provide novel means to access and manage agricultural finance (Babcock, 2015). Existing platforms include Mobis⁵, Musoni System⁶, Agritech (Farmer Mobile Wallet)⁷ and Mobipay.⁸ These solutions help smallholder farmers to mobilize credit through savings and credit societies, or by connecting farmers directly with funding organizations and investors. Fundraising from the general public via ICT platforms, dubbed 'crowdfunding', is also penetrating the African agricultural sector. Operated notably through Internet platforms such as Kiva,⁹ this practice is emerging as an innovative alternative modality to mobilize agricultural finance. This trend was discussed and documented during the international conference "Revolutionizing Finance for agri-value chains" (Fin4Ag), organized by the Technical Centre for Agricultural and Rural Cooperation (CTA) and its partners in Kenya in 2014¹⁰.

In the case of the e-wallet program in Nigeria, ICT access enables farmers registered in the scheme to obtain vouchers that provide a 50% subsidy for their input purchases (Iboma, 2014). ICTs make it easier for lending institutions to access farmers' credit history – from sources such as banks, SACCOS, and public registries – through the credit information sharing system (CIS), which can guide lending decisions (CTA, 2014). ICTs also increase farmers' access to agricultural insurance schemes and make it easier to verify claims for weather-related losses (World Bank, 2011).

Warehouse receipt systems and commodity exchanges referred to previously are also making increased use of ICTs, which is strengthening their performance and benefiting farmers and agrodealers, as well as those who operate the systems. Other crosscutting uses of ICTs in agriculture are related to records management and the management of farmer organizations.

Linking ICTs, Agriculture and Youth

ICT and youth

"The increasing adoption of ICTs in everyday life and the growing digital marketplace for goods and services are creating opportunities for youth that transcend traditional paradigms. Young people can now find and carry out work, launch their entrepreneurial endeavors and even get paid via their cell phone" (ITU, 2014b). These are views expressed by the International Telecommunications Union, the arm of the United Nations responsible for gathering information on global ICT status and indicators. For an increasing number of young people, ICTs have enabled key connections to markets, training opportunities, and capital, and provide an effective gateway to entrepreneurship and improved livelihoods (UNDESA, 2013).

Thirty percent of those under the age of 25 (globally) use the Internet, as compared to the 23% of those

over 25 years (ITU, 2011). Going by Facebook and other social network statistics, a sizable proportion of those over 25 who use the Internet are 'older youth' between the ages 25 and 35 (Sambira, 2013). Young people are pioneers and innovators relative to many ICT trends and applications. Because of their tendency to seek out new things, they are often early adopters of technologies and digital natives.

This global phenomenon is no different in Africa, where young people are well represented on the 'local' ICT applications landscape. Indeed, African youth are playing a vital role in the ICT revolution on the continent through the creation of various innovative ICT solutions, as the rest of this chapter will exemplify.

⁵ <http://ensibuuko.com/>

⁶ <http://musoni.eu/>

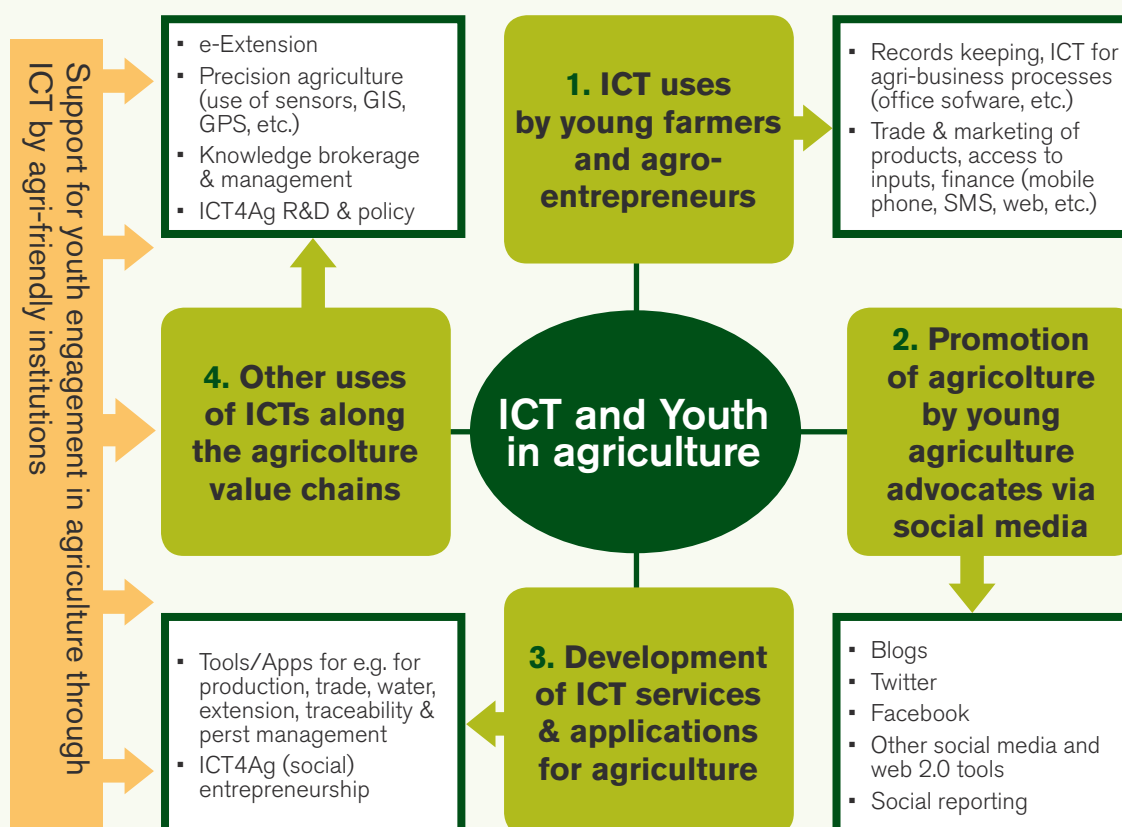
⁷ <http://www.agriculturetechnologies.org/>

⁸ <http://mobipay.co.ke/>

⁹ www.kiva.com

¹⁰ <http://bit.ly/crowdfunding-cta>

Figure 5.2 Framework for engaging youth in agriculture through ICTs



Source: ARDYIS Project

ICT and youth in African agriculture

Over 35% of the current African population is between the ages of 15 and 35, which is the youth age range according to the AU charter (AUC, 2006 and 2015). According to ILO estimates (ILO, 2013), 60% of Africa's unemployed are youth.

Agriculture presents a viable means to get many young people engaged economically. Even so, over the past few decades a growing number of youth have abandoned agriculture and farming because of its low productivity, its persistent negative image, the unappealing characteristics of rural areas, and other challenges in Africa (Montpellier Panel, 2014).

The advent and growing use of ICTs in agriculture, however, is helping to improve the image of agriculture,

and an increasing number of youth now see agriculture in a new light. In a study on "Youth, ICT and agriculture" conducted in western Kenya, researchers found that the application of ICT tools and skills by young farmers to their farming businesses generally increased their yields, incomes, and more importantly, their social status (IICD, 2013).

In addition, youth are now envisioning diverse roles that they can play to contribute to the promotion and enhancement of the sector (CTA, 2012a). ICT applications in agriculture are giving rise to a new generation of tech-savvy young African agripreneurs who now see farming as a business venture (rather than as a way of life) and have the ability to learn improved practices with just a click (Ajilore 2014).

Current uses of ICT by youth in agriculture

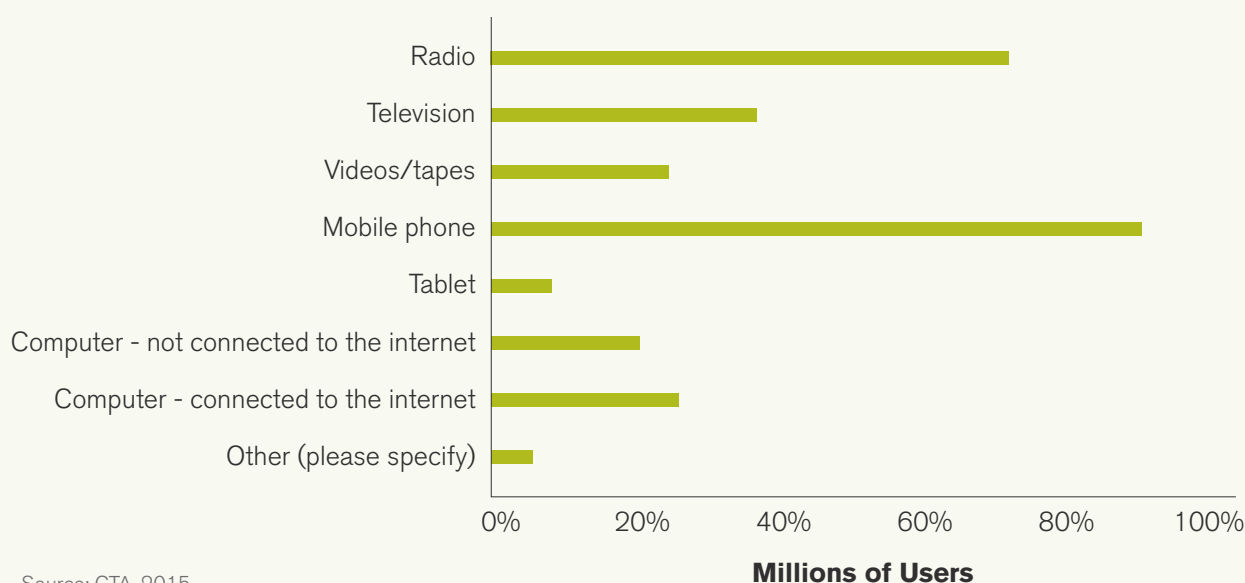
Youth are using ICTs in agriculture in a variety of contexts. In the framework of the CTA initiative "Agriculture, Rural Development and Youth in the

Information Society" (ARDYIS), which focuses on ICT and youth in agriculture¹¹, ICT use has been classified into four categories, as illustrated by in Figure 5.2.

¹¹ More information <http://ardyis.cta.int> - This program recently won a United Nations Prize for its work on youth and ICTs

Figure 5.3 Uses of ICTs by young farmers and agripreneurs in Africa

What communication devices do the farmers you work with use for their agricultural activities?



This framework appears comprehensive and the analysis presented here builds on it. The use of ICTs by farmers and agripreneurs, as well as the promotion

of agriculture via social media, are the most prevalent forms of use, and these are discussed in more detail below.

Some general observations

An online survey done by CTA, in part to inform this report, examined how young farmers and agripreneurs in Africa are using ICTs, the challenges faced, and the available opportunities. The research targeted two categories of stakeholders: first, young farmers and agricultural entrepreneurs who can individually use ICT, and second, institutions working with them (farmer organizations and other institutions, such as associations and NGOs)¹².

Figure 3 presents key insights on the variety of ICT tools used for agricultural activities and the importance of each tool. This information comes from organizations working with young farmers and agripreneurs. About 92% of them use mobile phones, 73% use radio, and 27% use computers connected to the Internet.

It appears that, in absolute terms, mobile phones are taking over radio as the most important communication

device used by young farmers. The mobile phone is also used as a means to access FM radio frequencies and more rarely to access the online radio. More 'traditional' channels, such as television, videos, and newspapers are still widely used. A growing number of young farmers and agripreneurs use smartphones.

We will now examine the use of these tools in key agricultural activities of young farmers and agripreneurs. Apart from insights from this survey, several other sources and references will be called upon.

Record keeping – Young farmers/agripreneurs use Microsoft Office applications like Excel and Word for keeping records of their production activities, timelines, costs, revenues and profits. They may not need much training before using ICTs in that context. Although access to, or ownership of, a computer is necessary and can be a challenge, there are increasing possibilities to use

¹² The survey "ICT and young farmers and agripreneurs in African Caribbean and Pacific (ACP) countries" (CTA, 2015) was launched by CTA in April 2015. It was an online research effort. Responses from institutions working with youth offer knowledgeable information of the situation of young farmers and agricultural entrepreneurs, both in rural and urban areas. Responses from youth themselves offer very good pictures of issues faced by digitally literate young farmers and agripreneurs. Some 586 responses were received in total and 94% came from Africa. About one-third of respondents were organizations. Only responses in English from organizations supporting young farmers and agripreneurs in Africa have been analyzed in this document (but responses in French provide largely similar conclusions). There were 288 organizations that responded in English. The full report of the research will be available later in the year

Case Study: Use of ICTs by IITA Youth Agripreneurs (IYA)

The IITA Young Agripreneurs Program was designed by IITA to train and engage willing young people in modern farming practices and agribusiness. The program started with a group of young graduates – Nigerian national youth corps members – who chose to use their one-year mandatory youth service to develop modern farming skills and are now practicing as farmers and agricultural entrepreneurs. In an interview with a female leader of the group, Evelyn Ohanwusi, she said that for her and the members of the group, ICTs make agriculture interesting and easier; they make getting things done more cost-effective and provide access to needed information.

The IYA also uses ICT devices to “...capture data; develop databases for (their) value chains, ranging from production through marketing and sales; and to aid online marketing and capacity building.” Moreover, through ICTs like social media the IYAs share knowledge and experience with other young people interested in agriculture, and the group later trains some of the new would-be agriculturists.

Source: Authors (based on personal interview with Evelyn Ohanwusi of IYA)

Case Study: Use of ICTs by Savannah Young Farmers' Network (SavaNet), Ghana

Founded in 2009, the mission of the Savannah Young Farmers Network (SavaNet, www.savanet.org) is to accelerate Ghana's agricultural growth through the development of a vibrant youth component in the agriculture sector that spearheads productivity across the agricultural value chain.

For **record keeping**, literate young farmers in the network use Microsoft Excel and spreadsheet applications, videos, pictures, and audio recordings. Information records relate to farmland size, farm locations, type of crops and animals produced, prices for crops and animals at various marketing centers (especially those with favorable prices), venues for farmer meetings, times of planting, times of harvesting, yields, and production inputs used (e.g. seeds, fertilizer, capital invested during a production cycle, farm labor, etc.). Record keeping using ICT facilitates automation of business information analysis, as well as the ability to keep farming data for several years.

To improve agricultural extension services, SavaNet provides an **audio-conferencing platform** where farmers can call in to get the latest relevant agricultural production information. Traditionally, meetings would be held in person, requiring farmers to leave their farms to attend the sessions. With the dial-in platform, farmers are able to call from anywhere – home, the market, or from the field. In addition to the audio conference platform, SavaNet has a podcast series focused on topics that directly benefit farmers. SavaNet also has an agricultural GPS data service for farmers who want to better understand the geography of their farms.

In addition, SavaNet works to improve farmers' market access by **providing market prices through SMS**. In collaboration with Ghana's Ministry of Food and Agriculture, SavaNet aggregates the early morning prices from local markets and then sends them to interested farmers via SMS. This helps farmers to get the best prices, instead of being cheated by unfair middlemen or bargaining shoppers.

Source: Pers. Comm. between Moses Nganwani Tia, the leader of SavaNet, and authors of this report

computers in a shared environment, such as telecenters, or through the facilities of an agricultural organization.

Using ICT for keeping records can have catalytic impacts on small agribusinesses. It should therefore be systematically facilitated for all young rural farmers or rural farmer's networks.

Access to information on inputs and advisory services – By using their mobile phones or the Internet, young farmers/agripreneurs get information on the availability, location and price of inputs. Exploring multiple sources of inputs enables them to make better-informed decisions about where and when to buy (World Bank, 2011). Many young farmers have benefited from inputs via the e-wallet program of Nigeria mentioned earlier. Perhaps more inclined to innovate than their older counterparts, young agripreneurs can use ICTs to get tailored agro-advisory information. The audio-conferencing platform of SavaNet (see case study on SavaNet) is a good example, though it should be noted that many youth in rural areas cannot afford the costs associated with receiving and sending SMS for these purposes.

Marketing and trade of products – The Internet and social media have become highly useful marketing platforms for ICT-savvy young farmers/agripreneurs.

The young Kenyan farmers mentioned earlier in this chapter used ICTs to get market data and modern production information. In an interview with a female leader of the IITA Youth Agripreneurs (IYA) in Nigeria, conducted primarily for this report, she said that ICTs help the IYA in marketing their products and keeping linkages with customers (see IYA case study). The SavaNet case study also illustrates this point. In addition, youth-driven ICT platforms like Mkulima Young in Kenya use such social media as Facebook and Twitter, along with other ICT applications, to create a virtual marketplace where sellers and buyers of agricultural produce interact and conduct transactions (see Mkulima Young case study).

As also confirmed by the CTA online survey, the younger generation of farmers and agripreneurs regularly use social media for marketing and trade of agricultural products purposes. Facebook is very popular in this context and WhatsApp is starting to gain traction among them as part of their business-oriented communication.

More so than older farmers, young producers and agripreneurs use ICTs in innovative ways to connect to markets directly, cut out exploitative middlemen, erase the barriers of distance, make transactions and logistics easier, obtain the best market prices, and increase their profitability (Figure 5.4).

Case Study: Mkulima Young: Facebook farmer, with 52,000 likes

Joseph Macharia is the founder of Mkulima Young, and is known as the '*Facebook Farmer*' by 'ICT for agriculture' (ICT4Ag) experts and other enthusiasts, especially in East Africa. Loosely translated as 'young farmer' (Mkulima means 'farmer' in Swahili), Macharia says: "Mkulima Young is an online platform that engages young people who are interested, inspiring and [using] agriculture to generate income and employment". The platform focuses on assisting youth with three aspects of agriculture: 1) information, 2) market access, and 3) financing. Beyond providing services, Mkulima Young is building a community of young people working in agriculture and creating a space for them to connect.

To inspire and encourage young people to see the economic appeal of agricultural ventures, Mkulima Young tells the stories of 'Mkulima champion', youth who are into agriculture as a business and earning income from it. Also, on the platform there is a specific Q&A section that allows young people to ask questions relating to agricultural production and business, and where both Mkulima Young staff and fellow young farmers with the needed information can respond. Questions can also be submitted via SMS, and there is an organizational YouTube channel with videos on what others are doing.

Last, for the young farmers that come to buy or sell their products, Mkulima Young supports a free online marketplace, which is also integrated with the organization's famous social media presence on Facebook and Twitter. Currently, Mkulima Young has over 48,000 friends on Facebook, over 8,000 Twitter followers, and has produced an android app to facilitate connectivity within the network.

Source: Adapted from (Rahman and Fong, 2015) and interactions with the founder of Mkulima Young

Agricultural Promotion by Youth via Social Media

Social media are used by young agripreneurs to promote their businesses and by other youth involved in agriculture (students, researchers, ICT for agriculture enthusiasts, journalists) to promote and encourage youth to get involved in the sector. The use of social media, especially by young agripreneurs, has been discussed above. The following paragraphs focus on the activities of those youth, who by passion or profession, engage in advocacy for agriculture through social media.

Blogging on Agriculture

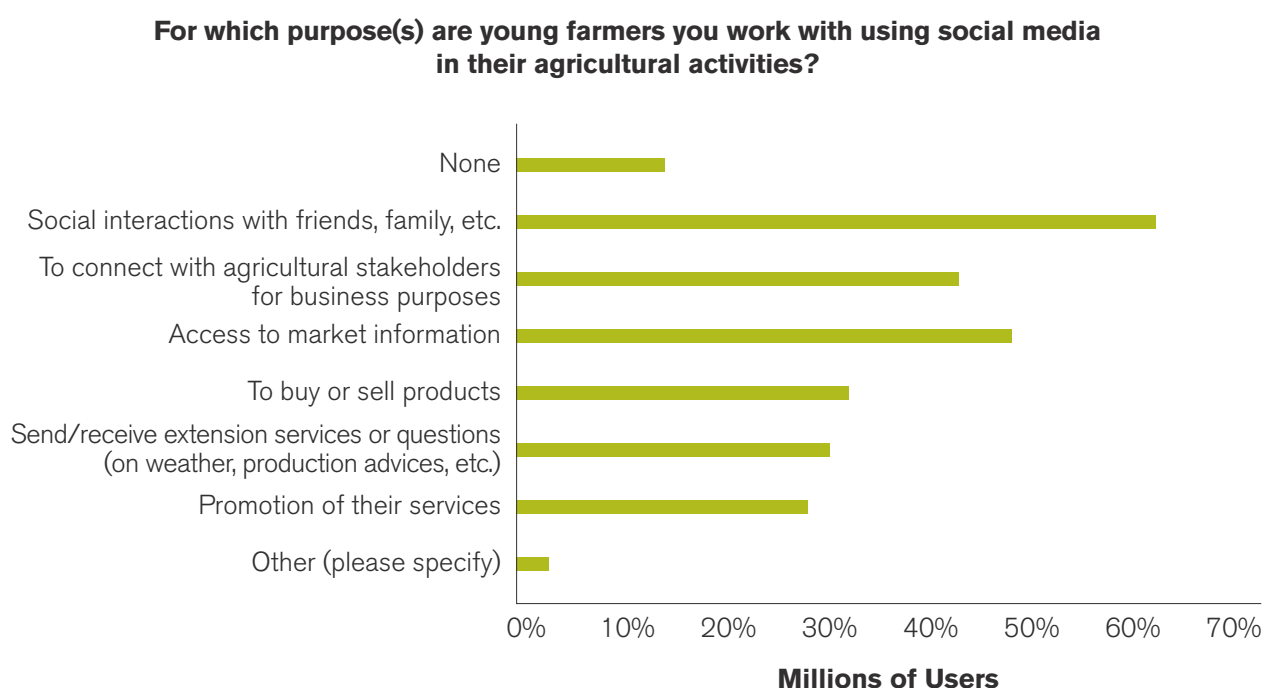
"Blogging is an interactive form of publishing content on the web." It has become a dominant way of self-publishing in the digital media age (Mashable, 2015). Blogs are normally used to share information or opinions on a particular topic. A lot of African youth engage in agricultural blogging.

Various organizations encourage blogging about agriculture, not only to maintain the interest of youth in the sector and attract others to the cause, but also to disseminate information and innovations on agriculture. Appealing stories of successful young farmers/agripreneurs that have succeeded in building up profitable agribusinesses within the agricultural value

- **Daral Technology** facilitates livestock management (Senegal)
- **Farmerline** provides accurate and timely agricultural information to farmers and also provides technology to stakeholders to work better (Ghana).
- **M-Shamba** is an interactive platform for smallholder farmers and traders (Kenya).
- **Mobipay** provides technology solutions to various economic sectors to drive commerce and trade (Namibia).
- **Mobis** (Ensibuuko app) mobile platform for the management of credits and loans for smallholder farmers and agricultural cooperatives (Uganda).
- **Rangerland Solutions** is an online livestock marketing platform that directly connects buyers and sellers, reducing marketing costs.
- **Redcore Interactive** is a platform for online international money transfers to mobile money in Africa (Uganda).
- **SmartMoney** provides free-of-charge branchless mobile banking to unbanked rural communities in Uganda and Tanzania.
- **YieldUganda** sources high quality, traceable food products for local and export markets (Uganda).
- **iCow** App that enhances and facilitates livestock management (Kenya)

Source: Adapted from Village Capital Website 2015

Figure 5.4 Uses of social media by young farmers and agripreneurs in Africa (Respondents are organizations supporting young farmers and agripreneurs)



Source: CTA, 2015

chain are shared – along with captivating images – as examples aimed at burnishing the image of agriculture and attracting other youth.

The youth organization known as the Young Professionals for Agricultural Development (YPARD¹³), a global network that has active members in many African countries, provides an online platform or space within which young people along the spectrum of agricultural production and development can interact. They swap stories on the status and challenges of agriculture among youth in different countries and proffer solutions. YPARD even hosted a blog competition on its website to encourage information sharing.

Similarly, an initiative of the CTA ARDYIS project – the 'Youth in Agriculture Blog Competition' (YoBloCo Awards)¹⁴ – promotes blogging on agriculture. The objective is to encourage youth to promote agricultural innovations and local opportunities, interest other

youths in agriculture, and identify new opportunities for their own benefit (Lohento and Bellinzas, 2012). Two competitions have been organized so far, and participating organizations or individuals submitted a total of 296 agricultural blogs (each containing several articles). Many of the best participants in these competitions are now becoming well-known young agricultural advocates¹⁵.

Other frameworks or organizations that have been encouraging young people to blog on agriculture include the e-Agriculture Community of Practice led by FAO. They have offered opportunities for youth to publish blog posts on agriculture on their platform. Such international initiatives are generating similar activities at the national level. All these actions – whether national or international – are generating vibrant communities of young agricultural citizen journalists and advocates who promote information on agricultural challenges and innovations and encourage other youth to invest in the sector.

Twitter and WhatsApp as platforms for creating agricultural awareness and exchanges

Twitter, a popular social networking site, is a platform that brings together different individuals and organizations with disparate perspectives to share knowledge and ideas, engage in discussions, and sometimes find or co-create solutions to issues. Targeted twitter campaigns created around agricultural practices and innovations help agricultural organizations to increase their reach and amplify their messages among similar organizations, and in so doing may expedite further dissemination and use of their information.

The use of tools like tweet-chats has promoted the exchange of agricultural knowledge, and encouraged advocacy and engagement between agricultural stakeholders. An example of a popular agricultural tweet-chat is the #AskAg Twitter chats, hosted by the

USAID Bureau for Food Security (whose work focuses on developing countries, including many in Africa). #AskAg Twitter chats help agriculture and food security experts to engage online audiences in conversations on timely topics and issues. Since its inception, #AskAg has engaged more than 100 experts in over 20 Twitter chats covering a range of agricultural issues (Chmielewski, 2015).

The CTA survey on ICTs and youth in agriculture also revealed that literate young farmers and agripreneurs are increasingly using the application WhatsApp as a platform for networking and exchange (SMS and voice calls). This is mainly useful because it is free to use across regions and countries, once you are on the Internet.

Engaging youth in agriculture via online videos

Videos and animations, which can be published online on such international channels as Vimeo.com and YouTube.com, can be very effective not only in communicating with youth, but also in promoting agriculture. Mobile phones

make it easier to leverage this approach. Organizations such as CTA have been consistently using this medium to engage youth in agriculture, especially in the Caribbean¹⁶, and the approach could be replicated in Africa.

¹³ www.ypard.net

¹⁴ www.yobloco.info;

¹⁵ Examples include Marthe Montcho (Benin) <https://agricultureaufeminin.wordpress.com/>; Bob Aston/Laikipia Rural Voices (Kenya) <http://laikipiaruralvoices.blogspot.nl/>; Olawale Ojo/Agropreneur Naija (Nigeria) <https://agropreneurnaija.wordpress.com/>; Kalu Samuel (Nigeria); <https://kalusam.wordpress.com/>; Anne Matho (Cameroon) <https://grainesdinfo.wordpress.com/>; Inoussa Maiga (Burkina Faso) <http://googolfarmer.info>; Keron Bascombe (Trinidad and Tobago) <http://tech4agri.com/>

¹⁶ Published by CTA <http://www.cta.int/en/article/2015-04-08/video-and-science-in-the-service-of-agriculture.html>

Social media reporting

Social media reporting is the use of social media tools and applications to disseminate live (real time) reports from such events as conferences and workshops (among others), individually or collectively by a group of reporters. Social reporters enable those who are not present to remotely follow live proceedings of an event and even contribute to the conversations. Social reporting uses various techniques, such as story telling, interviews, videos and still pictures, to communicate and provide a record of an event (Samii, 2009).

The benefit of social media reporting is that it enables the engagement of online audiences, who may have important, interesting, and informed perspectives to share. When well directed, it can also increase communication with target audiences and foster the kind of interaction and learning – based on real-time feedback – that traditional media do not (Kelly, 2014).

With the expansion of ICT access in Africa, the use of social media – especially Facebook, Twitter and blogs –

live reporting as events unfold has become increasingly common. The same is true for agricultural events. At the 6th Africa Agriculture Science Week, held in 2013 in Ghana and hosted by the Forum for Agricultural Research in Africa (FARA), a group of young Africans engaged in agriculture were there as social reporters, providing live coverage of various events during the week, amplifying conversations from the sessions online, and engaging those not physically present.

Similarly, social media reporting is now done regularly from CTA international conferences (e.g., the ICT4Ag conference in Rwanda and the Fin4Ag conference in Kenya, among others), with youth from Africa and the Caribbean and Pacific providing live online reports (both in English and French).

Also worth mentioning is the fact that many young people who have been engaged in social media reporting have received training and acquired new capacities that are proving useful in pursuing new employment opportunities (Kamukwape, 2014).

Development of ICT Applications for Agriculture

Opportunities exist for young ICT specialists in agriculture to develop innovative and useful ICT solutions for African agriculture. Because of their affinity for new technologies, and their seeming capacity to innovate with them, young people are well-suited to benefit from this emergent demand for ICT solutions in different spheres of African economies – including agriculture.

Already, youth in different African countries have been involved in developing ICT applications that help farmers solve some of their problems. Given the growing prevalence of mobile phones (and other mobile devices), there is a lot of interest in mobile applications and how the emerging ‘app economy’ might generate new employment opportunities for young people around the world (ITU, 2014b). Though not yet financially sustainable in most cases, these endeavors are giving youth new employment and entrepreneurship opportunities and thus producing a new generation of agripreneurs.

One well-known ICT for agriculture application developed by young people in Africa is ‘m-Farm’¹⁷ (founded by three young Kenyan women), which provides information on crop prices and other

market information to farmers via SMS sent directly to their mobile phones. Another successful application developed by youth is MOBIS (initially called the Ensibuuko app), which was developed by a young start-up (Ensibuuko) that emerged from CTA’s *AgriHack Talent initiative*¹⁸ (which includes agricultural ‘hackathons’, incubation of selected ideas and concepts, and promotion of the best applications developed). Ensibuuko is a web and mobile applications platform designed to help Ugandan Savings and Credit Cooperative Societies (SACCOS) of small rural farmers mobilize savings, and to receive and disburse loans more easily and quickly using SMS and mobile money. It was founded by two young Ugandans who grew up in rural farming communities and know well the barriers with which farmers must contend in order to access financing to expand their farming operations. The start-up has now reached more than 10,000 farmers through their agricultural cooperatives and savings societies.

Many other existing and new youth-driven agricultural ICT applications can be found across Africa. Various organizations, from telecom multinationals such as Orange, to national organizations such as the telecom regulator ARTP in Senegal, are supporting the

¹⁷ <http://www.mfarm.co.ke/>

¹⁸ <http://hackathon.ict4ag.org>

emergence of these innovators and their applications (more on this follows below).

All these applications are contributing to improving productivity, advancing advisory services, enhancing

access to markets, and promoting food and nutrition security. They are also contributing to revamping the image of agriculture, attracting new generations of young, creative service providers to agriculture, and generating new job opportunities for youth.

Other Uses of ICT by Youth in Agriculture

Young people in agriculture also use ICTs in many other ways along the value chains. Indeed, as described earlier in this chapter, ICTs help to modernize such agriculture activities as extension, soil testing, knowledge

management, and precision agriculture. This offers new opportunities to encourage youth to engage in the sector, provided adequate facilities are put in place to actually integrate innovations in these agricultural activities.

Youth, e-extension and ICT-enabled agricultural research

Instead of reaching out to farmers individually, young ICT-savvy extension officers use various forms of ICT-enabled e-extension methods to reach out to farmers. These include: direct mobile communication to individual farmers; using bulk SMS to reach groups of farmers/agripreneurs on a database; mobile applications like WhatsApp and Facebook; and sharing pre-recorded or live agro-advisory audio and video messages (Odera, 2014). ICTs also enable young researchers to reduce the feedback time on research outputs, such as improved varieties. ICTs have consolidated the research

feedback mechanism and have promoted participatory and collaborative multi-stakeholder research in which farmers are active stakeholders right from the stage of identifying the research problems to final outcomes (Pimbert, et al., 2010; Maru, 2004). Young researchers have also benefited from integrated information systems that reduce data duplication and help to ensure the consistency and integrity of data (Deloitte, 2012). In addition, young scientists engaged in biotechnology R&D regularly use ICT-enabled facilities, but this practice seems weakly documented in Africa.

Youth and agricultural knowledge management

The volume of knowledge produced in the various fields of agriculture is growing exponentially, and a culture of open access to that information is taking root globally. As a result, young agricultural knowledge/information managers require new methods and tools to deal with the rapid expansion of information across the agrifood system. Current and emerging ICT tools are

enabling information managers to better source relevant information, and to better organize, store, provide access to, guide and protect the use of information materials in responsive and responsible ways. ICTs also promote faster feedback from end-users to information managers, and facilitate knowledge sharing to a wider audience (Subashini, et al., 2012; UNDP Ethiopia, 2012).

Youth and precision agriculture

Site-specific crop management or precision agriculture is a new form of agricultural management that depends heavily on ICTs. These technologies are used to observe, measure and respond to possible variability within individual fields. Precision agriculture leverages on hi-tech solutions such as digital mapping of soil to determine

suitability, detection of weed growth in 3D images, and GPS-enabled farming equipment to better match farm practices to crop needs and improve resource use efficiency (Zhang, et al., 2009; Piron, et al., 2010). With their ability to quickly exploit ICTs, young people can help advance this novel practice in African agriculture.

Advancing ICT Use by Youth in Agriculture: Constraints and Opportunities

ICTs offer immense potential for youth in the agricultural sector. Even so, a number of constraints hamper expanding their use and realizing the benefits they can

provide. We first discuss general crosscutting limitations and then some 'context-specific' constraints to the use of ICTs.

Crosscutting constraints

High cost of ICT devices and access – One of the most important and fundamental barriers to the adoption or use of ICTs by young farmers/agripreneurs and other agricultural stakeholders in African countries is the associated costs. While increased infrastructure coverage and cheaper devices continue to reduce the cost of accessing ICT services, the cost of owning a device and keeping it connected still remains a challenge to many young people, especially rural youth.

Out-dated government policies and regulations that limit ICT investments, tax regimes imposed by governments, and comparatively high costs of mobile services make connecting and maintaining ICT devices difficult for many Africans. In Nigeria, for example, outdated laws like the National Mass Communication Policy of 1990, the National Telecommunications Policy of 2000, and the National Policy for Information Technology of 2000, are out of touch with the current realities of the modern technological landscape, yet they are still being used to govern and regulate the ICT sector (Macharia, 2014).

In Kenya, prior to 2009 the government levied a general sales tax on handsets that was as high as 16%. When the levy was scrapped to promote telecommunications access among the poor, the mobile penetration rate increased from just over 50% in early 2009 to around 70% in 2011, as shown in Figure 5.5 (Deloitte, 2011; Raval, 2012; Sambira, 2013).

Though governments need to levy taxes in order to meet the costs of public services, including public investments in agricultural development, many experts believe that taxes applied to telecoms seem high in many countries (Chéneau-Loquay, 2004). Similarly, many civil society experts and activists claim that telecom multinationals operating in Africa use African markets as cash cows, while the costs of services they offer in their home countries are low.

In the Youth and ICT in Agriculture survey conducted by CTA in 2015, the cost of connecting to the Internet was the first constraint cited by farmers' organizations

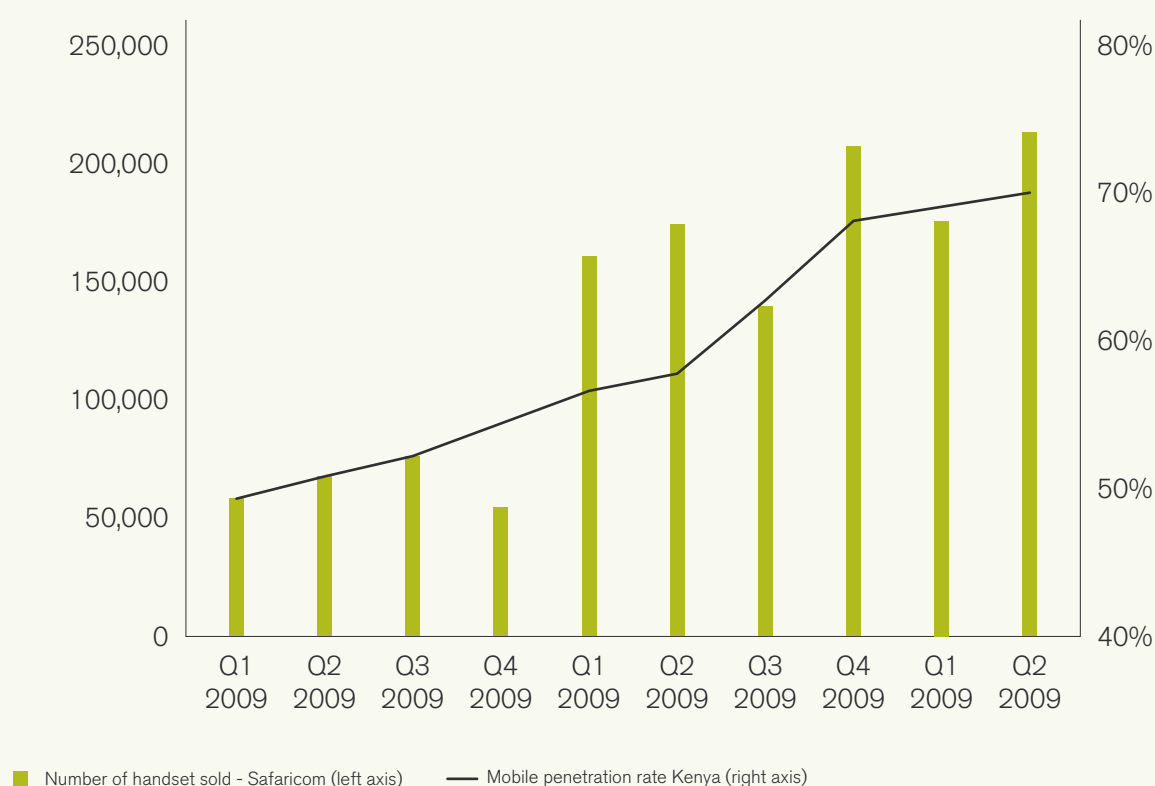
Case Study: Agritech Solutions-Kenya

Founded in 2013 by a group of young ICT4Ag entrepreneurs, Agritech Solutions is a youth-led agricultural software solution company based in Kenya. It provides ICT solutions for crop and livestock production, bringing together information the way from planting dates of crops or birthdates of livestock, to the selling date. It then makes this information available to agricultural value chain players, including financiers, input companies, regulators, processors/marketers, and contracting companies (among others), to help guide their decisions.

For crop farmers, Agritech provides such ICT4Ag products as *eInputs*, which helps farmers to manage input orders and supplies and link them directly to input dealers, and also *eGrowers*, a software solution that enables them to manage their farming activities and calendar, including post-harvest traceability. For livestock farmers, it provides the *ePig* System and *eDairy* Solution. The *ePig* system helps pig farmers to manage their operations, plug into a network that gives them access to veterinary services and information, and to quality feeds, drugs and new markets. Its *eDairy* solution also enables dairy farmers to better plan production and more effectively access veterinary services and manage operations.

Source: Based on direct information by Agritech Ltd. and its official website

Figure 5.5 Mobile penetration rate and handsets sales in Kenya after handsets tax were removed



Source: GSMA/Deloitte Case Study on Kenya (2011). Adapted from Raval (2012)

and groups supporting young farmers/agripreneurs (65.57%). Other important constraints (see Figure 5.6) include a lack of technical skills (61.75%), bad Internet connectivity (56.28%), lack of access to a personal computer (53.55%), and unreliable supply of electricity (51.91%). At the same time, 88% of these organizations believe that access to the Internet is either 'indispensable' or 'very useful' to young farmers/agripreneurs.

Poor connectivity – Poor connectivity and high unreliability of Internet and mobile networks services, especially in rural areas are major constraints (Figure 6). Many rural areas still lack access to ICT infrastructure or have unreliable connections (ITU, 2014a). Network operators are usually less enthusiastic about investing in remote rural communities and this can keep farmers in these areas from harnessing ICTs to increase productivity. This affects all agricultural stakeholders, not only youth, and undermines farmers' access to knowledge and strategic information.

Absence of or limited digital literacy – For many young farmers and agripreneurs, ICT adoption is held back not by a lack of access but rather by digital illiteracy.

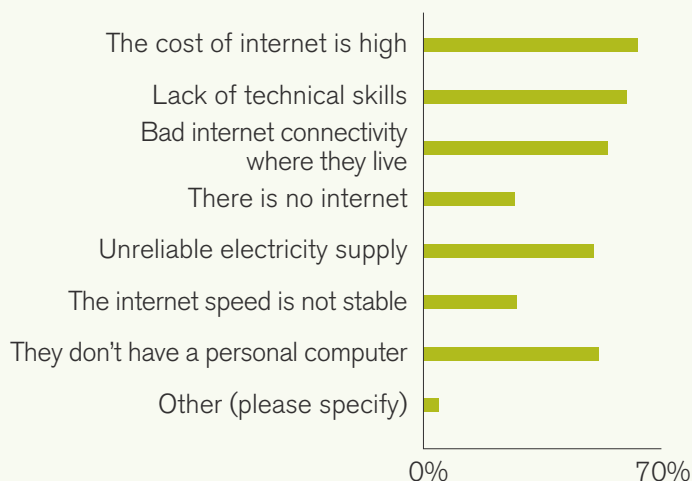
This is the lack of capacity, knowledge or skills needed to use digital devices like computers and smartphones for communication purposes or to send and access information. Digital illiteracy also sometimes has a gender undertone (see below).

Weak awareness of ICT potential and applications in agriculture – In general, there is a limited understanding of the relevance and benefits of ICT applications for increasing the productivity and profitability of many stakeholders in the sector. This adversely affects ICT investment in agricultural education, in agricultural institutions, and in the sector as a whole. Some successful agripreneurs, because they do not understand the additional benefit that ICTs can bring to their activities, do not see a reason to use or invest in them (Kimbowa, 2013).

In addition, not properly tailoring ICT solutions to young farmers' needs may discourage adoption (Stienen, et al., 2007). This requires extension workers to help farmers understand the relevance of ICT to strengthen their operations; it also requires that ICT developers have a robust understanding of farmers' needs in order to better design demand-driven ICT solutions.

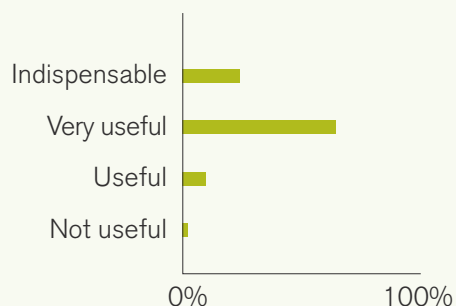
Figure 5.6 Internet usefulness and ICT constraints faced by youth in agriculture

What are the most important problems that young farmers you work with face using the internet?



Source: CTA 2015

To what extent do you believe that access to internet is useful for young farmers?



Specific constraints

Social factors (gender, marital status, land ownership, culture and traditions) – In conducting the western Kenya ICT surveys, researchers found that, while 80% of young male farmers surveyed use ICTs in their farming businesses, only 20% of the young women do the same (IICD, 2013). That means young male farmers in the region are four times more likely to use ICTs for their farming businesses than their female counterparts. Researchers realized that gender, marital status, education level, and land ownership, influence the purpose for which young farmers adopt ICT tools, as well as the extent of adoption.

Because of their limited access to land in many African communities, young women in rural areas often do not feel they have strong enough incentive to learn to apply ICT tools in their farming activities. Also, because of their busy schedules and domestic routines, married women have limited time available to use community ICT centers (Kimani, 2012; Yeboah, 2014; CTA-AYF, 2015).

Absence of effective public ICT access spaces in rural areas – Public ICT access points such as telecenters that offer Internet access, are still the first gateways to Internet connectivity for young farmers, especially in rural areas. This was clearly demonstrated by the CTA survey in western Kenya (Figure 7). However, because of exorbitant costs and management issues, public Internet centers in remote rural communities often require government or institutional investment and support that may not be available (Lohento, 2003). This can prevent young farmers in such communities from adopting ICTs and exclude them from the associated benefits.

Apart from illustrating the key importance of telecenters, Figure 7 shows that mobile Internet access through smartphones is becoming a reality for some young farmers/agripreneurs who have the means and knowledge to take advantage of these new devices.

Lack of ICT adoption and connectivity in agricultural institutions – Important barriers may exist in the form of inadequate ICT infrastructure at the institutional level (for example in research centers, laboratories and ministry offices), or poor network and ICT coverage when engaged in fieldwork. Extension services have been undertaken in traditional ways for decades, and public providers have often failed to anticipate or quickly adopt ICT innovations. While some countries have tried to align their extension services with evolving ICT innovations, as in Kenya for instance (with KALRO), others have not been able to do so (CTA, 2012b).

More innovations in extension, involving the use of interactive ICTs (SMS, GPS, digital mapping, digital soil testing devices, tablets) would give incentives to young extension officers, as well as attract new ones.

Apart from the availability of these ICTs, institutional rigidities may prevent actual effective uses by youth.

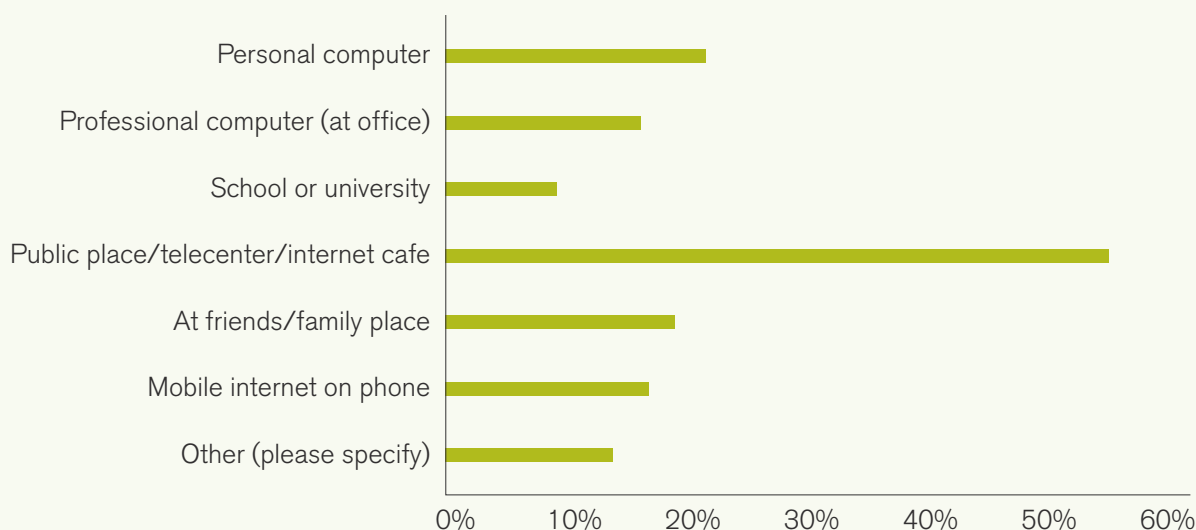
Lack of ICT training in agricultural education – While progress is being made, there are still limited ICT training opportunities and limited inclusion of ICTs and their application in agriculture training curriculum, including at the university level. This may be due, among other things, to inadequate financing for the acquisition

and maintenance of ICT training infrastructure by educational institutions – many of which are funded by governments. Another causal factor is that many

universities, just like the public extension providers, have not been able to keep their agricultural curricula in line with fast-changing ICT trends and demands.

Figure 5.7 Internet access points for young farmers

What is the regular internet access point(s) for young farmers you work with?



Source: CTA 2015

Opportunities

There are a number of opportunities available for leveraging ICTs to strengthen youth engagement in agriculture and make their participation more effective.

Increased awareness of ICT opportunities among agricultural organizations

Agricultural development organizations are increasingly recognizing the power of ICTs to assist them in achieving their goals of helping African farmers improve their productivity, market access and food security. The recent *e-Agriculture 10 Year Review Report* illustrates

this point (FAO, 2015). This positive trend should be consolidated in the coming years and, as it comes to full fruition, will benefit youth involvement and the entire agricultural value chain.

Increased ICT penetration and affordability

As noted earlier, the growth rate of ICTs in Africa has been exponential. According to the International Telecommunications Union, the mobile broadband penetration rate in Africa rose from 2% to 20% between 2010 and 2014. With increased penetration, the cost of connection to ICT services is falling in many African

countries. This trend will only accelerate as ICT service prices decrease and as awareness of its potential increases.

It is therefore crucial that agricultural stakeholders decisively invest now in ICTs, in order to fully capitalize the opportunities they provide.

Increased support for youth engaged in ICT for agriculture-related activities

Among agricultural organizations, there is a rising trend of support to ICTs for agriculture in relation to youth. Many organizations now have programs that focus mainly on

supporting youth in the various spheres of ICT use in agriculture, be it social media reporting, developing ICT for agriculture apps, or e-Extension and farming activities.

CTA, for instance, supports youth in agriculture through the *YoBloCo Awards*, *Plug and Play Days* (showcasing ICT4Ag innovations), the *Web 2.0 and Social Media Learning Opportunities (Web2forDev)*¹⁹ and the *AgriHack Talent initiative*. AGRA supports various ICTs for Agriculture projects in relation to youth, such as the 2013 *AgriHack* activities in Rwanda. The Global Forum for Agricultural Research (GFAR) supports young people in agriculture by facilitating access to capacity building, and to contributing to policy discussions through the

YPARD network. Other organizations, such as FARA, IICD, and IFAD, have also developed past or existing youth-focused programs that leverage ICTs to support youth engagement in agriculture.

Moreover, many initiatives have emerged at national levels, such as those implemented in various African countries by *Agri-ProFocus*, an initiative begun in 2005 by the Netherlands to rally professionals, expertise and resources around a joint interest in farmer entrepreneurship.

Stronger interest in ICT application development in the agriculture sector

Regarding ICT4Ag application development, opportunities are also emerging. Telecom operators such as Safaricom, MTN and Orange, regularly run competitions (for example, the *Orange African Social Venture Prizes*, or the MTN app competition challenges), and are increasingly including agriculture as one of the themes for which applications can be developed. Organizations supporting agricultural development can collaborate with them to facilitate the launch of relevant agriculture applications. While some youth target developing applications that those institutions

might buy and deploy, others aim to win the competitions in order to launch their own ICT4Ag services. Maintaining relationships with these very large telecom companies, however, may become challenging for young entrepreneurs to manage.

National governments are also active in this area. Examples include initiatives of the Ministry of Youth and ICT (MYICT) in Rwanda and competitions launched by the telecom regulator ARTP of Senegal through the Universal Telecommunications Service Development Fund (FDSUT).

Emergence and growing role of ICT innovation centers (ICT hubs)

ICT hubs bring together communities of ICT developers, entrepreneurs and development stakeholders (Khalan, 2013). They have been at the heart of many of the ICT4Ag applications that have been developed so far on the continent. At present, there are about 100 ICT hubs across Africa (Sturgis, 2014), where young people with innovative ideas come together to exchange knowledge and collaborate to

develop ICT solutions to various problems. Agriculture has benefitted (and continues to benefit) from this drive and creative innovation of the youth across Africa. Collaboration with agricultural institutions is growing. Examples of ICT Hubs promoting agriculture include Outbox (Uganda), kLab (Rwanda), mLab East (Kenya), IceAddis (Ethiopia), CTIC (Senegal), and BuniHub and Kinu (Tanzania).

Recommendations

Specific recommendations

Facilitating affordable access to ICTs for young farmers and agripreneurs – Facilitating cheaper access to ICT devices and connectivity is important for improved ICT adoption by young farmers and agripreneurs, notably in rural areas. This can be achieved in various ways.

For example, reducing the taxes levied on mobile and ICT devices is a promising approach. Some African

countries have high taxes on ICT devices. Deloitte (2011) observes that, “of the top 20 countries where mobile-specific tax as a proportion of TCMO (Total Cost of Mobile Ownership) is highest, ten are in Africa”. Reducing sector-specific taxes could bring down the costs of purchasing ICT devices and access, encourage increased acquisition of mobile/ICT services, stimulate the agricultural economy, and generate more tax

¹⁹ This is an important capacity building opportunity. More than 3,000 agricultural and rural stakeholders, 53% of whom are youth, have been trained in 42 African countries (Source: CTA Web2forDev Program www.web2fordev.net). Interestingly, besides CTA's own funded training sessions, a number of organizations have followed the model and have trained agricultural stakeholders, including youth on social media, in a franchise mode with little CTA logistics support, or fully independently

revenue for the government. Another option is to link tax reductions for network operators to increased infrastructure investment and coverage in rural farming communities. However, many ICT regulatory bodies in Africa are weak, and this approach has not so far been very successful (Saibou, 2005).

Telecom Universal Service and Access Funds, which most African governments have put in place and which are supported by taxes collected from telecom operators, could specifically devote a proportion of their resources to directly address the agrifood sector's ICT use and development needs.

Governments and the various organizations supporting the sector could put in place favorable and dedicated financial schemes for young farmers and agripreneurs who are seeking (micro) credit to invest in ICTs that will help them develop their activities and businesses.

Finally, it is important to mention the strong political will that has been demonstrated by the Nigerian government, which distributed free mobile devices to farmers under the e-wallet program. Many agricultural stakeholders expect that this approach will be replicated in other countries.

Develop digital literacy programs for young farmers and agripreneurs – Facilitating access to ICTs must go along with the capacity to put the devices to effective use. Digital literacy programs that train youth to understand and use relevant ICT devices and applications are critical.

Capacity building programs must be tailored to young farmers' level of knowledge and exposure to ICT devices. Also, though it may require significant resources, training programs should be location-specific and materials provided in local languages to serve as community knowledge repositories and encourage later consultations.

Support the sharing of success stories on ICT and youth in agriculture – Youth (and older people as well) can be inspired by and learn from success stories and examples

of best practices. Many people, however, see agriculture in an unflattering light, in part because successes in the sector generally do not capture headlines. Still, sharing best practices, innovations and success stories relating to ICT and youth in agriculture could be decisively inspirational. We recommend the development of an online database of innovative success stories on ICTs and youth in agriculture, covering all segments of the agrifood value chain.

Support ICT for agricultural research, innovation and youth entrepreneurship – This recommendation is in line with at least two of the ten recommendations that came out of the international ICT4Ag Conference organized in 2013 by CTA and its partners (including AGRA). As illustrated in the report, youth ICT innovations (software and hardware) are advancing agricultural value chains, while at the same time providing employment opportunities and attracting more youth to agriculture – in large part by improving its image. Entrepreneurship in this domain, however, is in its early days and needs to be fully supported in order to develop and become sustainable. ICT4Ag (social) entrepreneurship is at the intersection of three different areas that face their own challenges in Africa: business development, ICT service and product development, and agriculture entrepreneurship. Financial support should be readily available (via innovation funds, seed funds, venture capital organizations, and other financial mechanisms) to support the emergence of prototypes, the development of proofs of concept, and the scaling up of entrepreneurial innovations. Multi-stakeholder support in this area is crucial to sustain successful ICT4Ag business models and (social) entrepreneurship in Africa.

Strengthen ICT incorporation into agricultural curricula – Governments and policy makers should encourage or mandate the expansion and reinforcement of ICT training into the agricultural curricula, particularly at the university level. This is essential for nurturing a generation of young agriculturalists prepared to take full advantage of ICT innovations in their professional work immediately following their graduation. This was the first recommendation in a call launched by youth engaged in activities of the CTA ARDYIS project in 2011 (ARDYIS, 2011).

General recommendations

Strengthen awareness of ICT for agriculture – While promoting awareness of ICT for agriculture has improved in general in Africa, as illustrated by the *e-Agriculture 10 years report* published by FAO (FAO, 2015), this work should be strengthened, especially in less well-connected African countries. Such promotional efforts also need to be directed towards all stakeholders involved in all segments of the agrifood value chain (extension officers, agricultural researchers, information

managers, food processors, agrodealers and, very importantly, agricultural decision makers and farmers themselves). Currently, there is little promotion of the use of ICTs in activities such as food processing, soil fertility work, biotechnology, and land cultivation (for example, with 'smart tractors'). Strengthening multi-faceted awareness promotion will prepare decision makers in particular to favor strategies that will eventually facilitate youth engagement with ICT in the sector.

Increase ICT use and equipment in agricultural institutions – Two key constraints faced by young agricultural researchers, extension officers and other young professionals are the lack of capacity to apply modern ICT tools to their work and inadequate access to necessary ICT facilities. An internal enabling environment that provides better access to the necessary ICT infrastructure in their institutions must be ensured. Strong intervention in this area will not only benefit young professionals but also the institutions themselves.

Promote the development and implementation of sound e-agriculture strategies – It is important that African countries rationalize their integration of ICT in the agricultural sector by putting modern strategies in place. This strategic approach should take into account the entire sector (including fisheries, livestock and forestry) to ensure that no key agricultural activity is overlooked, duplications of projects are avoided, economies of resources and of scale are achieved, and that crosscutting issues such as connectivity, ICT costs and capacity building benefit from holistic solutions (CTA, 2013b).

Conclusions

Agriculture holds substantial promise for economic growth and development in Africa. Considering the level of youth unemployment, as well as the prevalence of hunger and malnutrition across the continent, agriculture presents a vital pathway to job creation for the burgeoning youth population, and opportunities to lift many people out of poverty and resolve food security problems.

While African youth have long shown a lack of interest in agriculture, the emerging trend of applying ICT solutions to agriculture, plus the limited availability of livelihood opportunities in other sectors, are attracting an increasing number of youth back to agriculture.

These young people often bring their energy, creativity and tech-savviness to agriculture and are changing its landscape in Africa. This is being done through various initiatives, such as better integrating ICTs in record keeping, promoting agriculture among other youth via social media platforms, creating virtual markets that help

farmers/agripreneurs connect to markets more easily and get better prices, developing ICT applications for livestock management, and engaging in crop and livestock production itself. These youth are gradually generating additional livelihood opportunities from their engagement with the sector. Youth are also helping to advance new ICT-enabled practices, such as precision agriculture.

Young people are, however, constrained by a host of factors, including the relatively high cost of access to and connection of ICTs, inadequate capacity, unreliable connectivity, and limited access to the financing needed to expand their activities. African governments, institutions and development organizations will do well to expand opportunities for youth in agriculture by facilitating access to ICTs and finance, building youth capacity, providing targeted interventions, strengthening youth engagement, encouraging the incorporation of ICT training into agricultural curricula (especially at university level), and supporting all with the necessary infrastructure.

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Chapter 6

Capacity Building and Youth Empowerment in Agriculture

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KEY MESSAGES

ONE

Over 60% of Africa's population is between the ages of 15 and 35, an historic 'youth bulge' greater than in any other region of the world. This presents both challenges and opportunities. Youth unemployment is a major challenge, but agriculture offers opportunities for gainful employment while simultaneously increasing food security and boosting economic growth and development.

TWO

Agricultural growth is hampered by a lack of critical skills in the sector. The current curricula and training materials in use are outdated and not relevant to the skills required by the private sector; nor are they especially effective in encouraging youth entrepreneurship and empowerment.

THREE

Targeted capacity building is required to ensure that the private sector skills gaps are addressed, and that youth empowerment initiatives address intangible but critically important factors, such as leadership abilities, personal development, and other life skills training.

FOUR

Capacity building in agriculture should be holistic, encompassing the environment, organizations, and institutions responsible for training, as well as the capacity and willingness of individuals to undertake and utilize the training provided. Environmental factors, including political frameworks, policies and strategies, need to be aligned to national and regional development agendas, especially the National Agriculture Investment Program (NAIP) of the CAADP Process.

FIVE

The skills required by those employed in the informal economy are as complex and wide-ranging as the activities and forms of employment found within it. Vocational education and training and entrepreneurship have a key role to play in improving conditions for informal training and those working in the informal economy.

SIX

In training young agripreneurs, emphasis should be given to such personal qualities as self-confidence, innovation and creativity, the ability to take initiative, the willingness to take calculated risks, as well as to collaborate with others working in the agriculture sphere. They should learn to save, invest and grow, as these practices help them to select and shape their career paths.

Introduction

In the context of youth employment, agricultural development offers one of the most effective opportunities to engage African youth, create jobs and improve livelihoods. This economic potential is set against the challenge of demographic transition in many developing and emerging economies, especially in Africa, where young people make up approximately one-fifth of the total (global) population (Losch, 2013). The combined burden of a youth bulge and shrinking job market have left millions of young people jobless, under-employed and excluded from economic opportunities. Globally, the proportion of rural youth is decreasing in absolute terms, except in sub-Saharan Africa where their number will continue to swell until 2030 or 2040.¹ Accordingly, SSA faces unique challenges and opportunities in the coming decades to secure decent livelihoods and employment for the growing number of young people in the region, especially in rural areas.

To do this, skills in agricultural and agribusiness development remain fundamental to increasing the productivity, profitability and competitiveness in Africa's economic and rural development agenda. The continent currently holds 60% of the world's uncultivated arable land, but continues to import more than USD 60 billion worth of food each year. This is equivalent to 5% of the SSA Gross Domestic Product, or the combined GDP of Kenya, Uganda and Malawi.²

Rural women, and particularly rural girls, face greater barriers and unique challenges within the agriculture sector. Their access to education and training opportunities is significantly more limited than for their male counterparts. Research has shown that education for girls has high returns in terms of income and livelihood opportunities, including increasing agricultural productivity. Still, the reality on the ground is that the rate of female enrollment in secondary school is only 34% for SSA as a whole.³ A concerted effort is needed to ensure that rural young women receive basic education and participate in skills development and training so that they can contribute to increasing household incomes and food security. Although youth unemployment remains a major issue on the continent, studies conducted by UNDP on the roles and opportunities of the private sector in Africa's agro-food industry⁴ show tremendous employment opportunities, especially in agriculture. According to UNDP, the perspectives of 55 CEOs and Executive Directors in Africa's agro-food Industry reflect frustrations with the labor market, including: the difficulty in attracting

and retaining people with the right skills in high-level operations like commercial farming; the concomitant high cost of training unskilled labor; and the drifting of trained personnel to other industries they see as more prestigious.⁵

To meet the growing demand for qualified employees, CAADP's ten-year review and subsequent forward planning identified Africa's capacity to generate knowledge, foster learning, and enable skill development among its workforce as a game changer in agribusiness, empowering youth, and reshaping Africa's agriculture sector. During the Malabo 2014 Africa Heads of State and Governments Summit, AU Members reaffirmed the role of CAADP in catalyzing agricultural transformation across SSA. Members embraced a commitment to halving poverty by 2025 through inclusive agricultural growth. The Malabo Declaration identified several key principles that aim at reducing poverty among youth and women, including:

- Establishing and/or strengthening inclusive public-private partnerships for at least five priority agricultural commodity value chains, with strong linkages to smallholder agriculture;
- Creating job opportunities for at least 30% of the rural youth population in agricultural value chains; and
- Supporting and facilitating preferential entry and participation for women and youth in gainful and attractive agribusiness opportunities.⁶

Thus, although there is clear demand from employers in the agriculture sector and African Heads of State and Governments have reaffirmed their commitment to position agriculture as a key driver for inclusive and sustainable socio-economic development, several factors continue to hamper efforts for implementation at the country level. Limited capacity and knowledge, as well as an absence of systems for, and a culture of, formal knowledge accumulation and sharing are among the many impediments to ensuring high and sustained agricultural production and productivity. These challenges have significantly and adversely affected the ability of young women and men to participate in agricultural development. For many youth, agriculture continues to be regarded as a last resort career path due to the negative connotations attached to it, such as hard labor, fieldwork, and low monetary returns relative to other sectors.

¹ Structural Play and Employment in Africa; Losch, 2013 (NEPAD Africa Rural Development Conference, Cotonou)

² UNDP, Roles and Opportunity for the Private Sector in Africa's Agro-Food Industry (2012); Authored by Dan Acquaye

³ Girls Grow: A Vital Force In Rural Economies, 2011

⁴ UNDP Roles and Opportunities of the Private Sector in Africa's Agro-food Industry (2012)

⁵ UNDP Roles and Opportunities of the Private Sector in Africa's Agro-Food Industry (2012) p. 33

⁶ African Union Commission. Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods. Doc. Assembly/Au/2(Xxiii)

Even so, opportunities exist to leapfrog Africa's agriculture-based economy due to the rapid pace of global advances in technology. These include:

- Strengthening capacity for knowledge generation, packaging and dissemination;
- Developing innovative ways and incentives to increase youth enrolment in agricultural disciplines in vocational and tertiary education – e.g., through exciting agribusiness training programs; and
- Equipping value chain actors with entrepreneurship skills through targeted capacity building programs.⁷

The key questions arising then include: What are the capacity needs for youth to pursue agriculture or agribusiness as a livelihood? How do they acquire these skills? And what sort of institutions, policies, and support can enable them to do so? Included here are life skills, technical and vocational skills and, increasingly, analytical or 'contextualization' skills. Clearly, there are no simple answers to these questions.

Through active participation, young people are empowered to play a vital role in their own development, as well as in that of their communities, helping them to learn vital life skills, develop knowledge about human rights and citizenship, and to promote positive civic action. To participate effectively, young people must be given the proper tools, including education about, and access to, their civil rights.⁸ From an agricultural perspective, capacity building has been placed at the core of agriculture development in Africa. The learning routes to build these capacities and skills encompass: primary and secondary education; tertiary and higher education; technical and vocational skills development; and formal, informal and non-formal learning. Institutions involved in capacity building in agriculture include public sector institutions (universities, research organizations, and training institutions), private sector entities, informal training providers, development partners, and NGOs.

Success stories are emerging that highlight changing attitudes among young men and women towards undertaking agriculture as a business. However, to accelerate this trend and support capacity building efforts, Africa needs to address some structural, systemic, cultural, and socio-economic factors that affect capacity building efforts in agriculture. Several factors impede youth involvement in agriculture, such as educational background, access to land and financing, low agricultural productivity, seasonality of agricultural incomes, lack of public investment in the sector, lack of interest and information, and the limited use of

innovations and new technologies. School curricula have generally tended to deflect youth from careers in agriculture and, as a result, the negative aspects of the school-to-work transition by youth have been more extensive in the agriculture sector than in any other (Njenga, et al., 2012).

In their work on youth and women empowerment in Kenya, Njenga, et al. (2012) identified the following challenges as critical for managing capacity building efforts and supporting youth in translating learning to the world of work.

Poor image of agriculture – The majority of young people consider agricultural work to be for 'those who have not gone to school'. Moreover, many youth who grew up in villages have first hand experience of the long hours that go into traditional agriculture, without any commensurate return. They may therefore believe their future lies with a different career, one that is financially more rewarding and that can usually be found only in urban areas. Thus there is a need to demonstrate the changing face of agriculture – the rising demand for non-traditional commodities, the growing linkages and access to new and emerging local and international markets, and the increasing technological and management innovations being brought to bear in the sector.

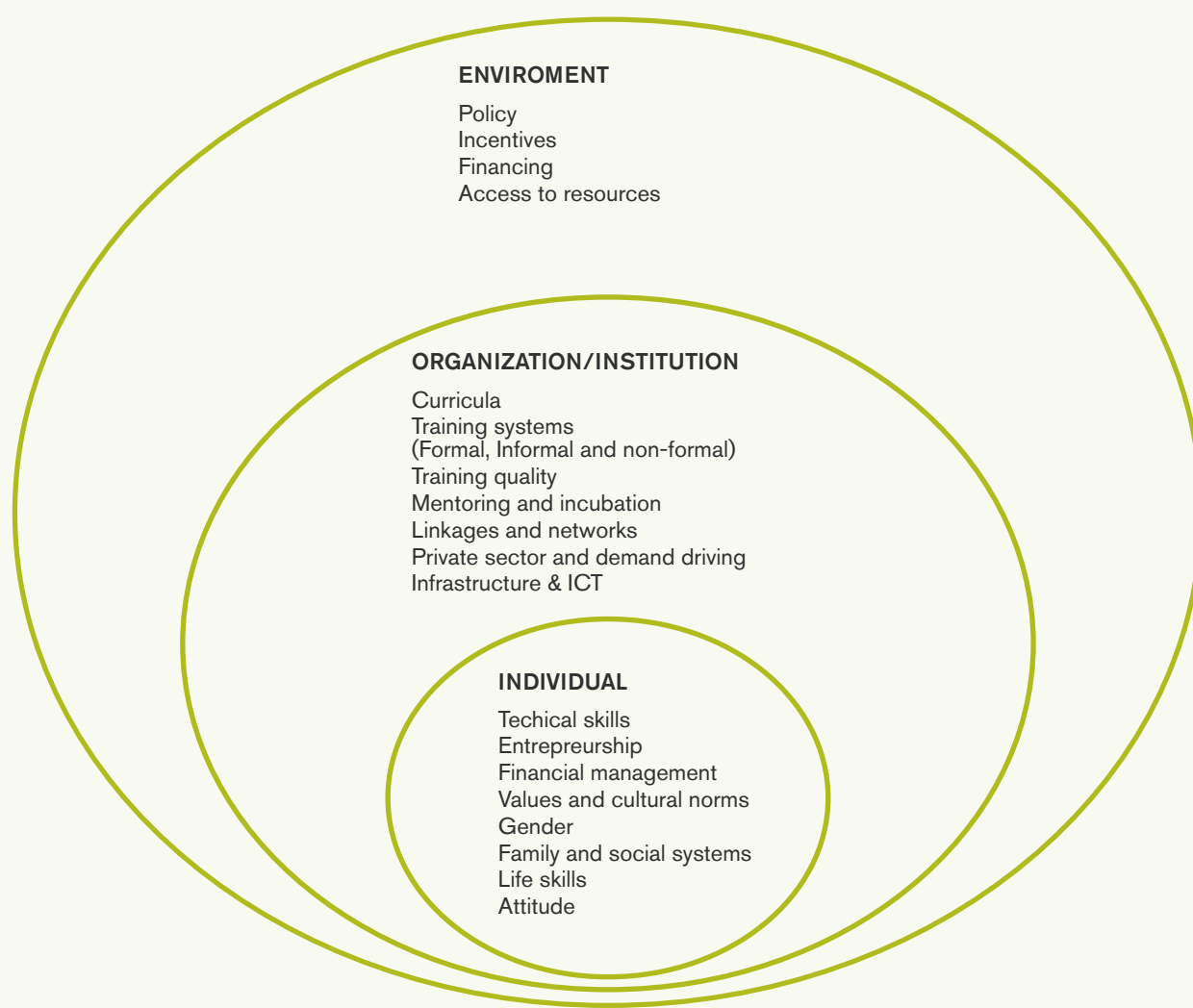
Access to land and productive resources – A major impediment both to youth and to women in agriculture is access to productive land. Traditional systems bestow land ownership to family heads, almost always the senior male of a household, and this invariably limits access for young siblings and women. Land is of course a fundamental agricultural resource, and unless business models are developed that allow alternative ways of accessing land, the growth of youth and women in agriculture will continue to be inhibited.

Capacity building efforts aimed at integrating such models into existing training institutions require structural changes, as well as changes in mind-set: leadership must be prepared to accept, adopt and champion such integration; staff and trainers need to buy in and be part of the change process; policy flexibility is needed to allow significant changes in curricula; space must be created for private partnership investments; financial and non-financial incentives need to be provided; trainers must themselves be exposed to the new models and the knowledge that underpins them; and the general training environment and infrastructure needs to be strengthened. Heads of training institutions, their staff, trainers and policymakers at all levels should be exposed to the 'what and the how' of integrating new key elements into existing training structures.

⁷ African Union Commission. Implementation Strategy and Roadmap to Achieve the 2025 Vision on CAADP (Operationalizing the 2014 Malabo Declaration on Accelerated African Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihood). Africa Union, January 2015.

⁸ Fact Sheet – UN DESA Youth Social Policy and Development Division. Issue brief: Youth Participation <http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-participation.pdf><http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-participation.pdf>

**Figure 6.1 Capacity development framework
– adapted to agriculture by the author**



Scope of Capacity Building for Youth in Agriculture

Capacity is defined as the organizational and technical abilities, relationships and values that enable countries, organizations, groups, and individuals at any level of society to carry out functions and achieve their development objectives over time. Capacity refers not only to skills and knowledge but also to relationships, values and attitudes, among other factors (UNESCO-IICBA, 2006)

Capacity development in agriculture is holistic, encompassing the overall environment, the organizations and institutions responsible for training, and the individual capacity and willingness to undertake and utilize the training (Figure 6.1).

Capacity development in agriculture for youth can be linked directly to access to economic opportunity. Accordingly, the MasterCard Foundation defines

economic opportunities for youth as improving the capacity of young men and women to access jobs or grow their businesses, access finance, and to expand the opportunities available to them. Recently, IFAD undertook a qualitative analysis of training and capacity-building initiatives in order to obtain greater clarity about types of training and capacity building in projects that the organization supports and to identify successful training approaches that empowered poor rural women and men, and most importantly the youth (IFAD, 2013). The analysis found that capacity building is usually equated with training, rather than understood as a more complex set of tools for institutional and organizational development. Also, there was among stakeholders a limited understanding of how developing individual capacity contributes to achieving institutional and organizational change. Making the leap from individual learning to better development outcomes and capacity

impact required both good training design and an appropriate organizational and institutional context in which to apply the learning from training⁹

Africa's agricultural capacity development programs need to encompass leadership issues and citizen transformation, knowledge- and innovation-driven processes, and utilize the continent's own potential and resources for capacity building. These programs must also

be about strengthening the abilities of capacity builders, and make use of integrated planning and implementation approaches. The CAADP capacity development framework is focused on improving effectiveness and efficiency in implementing the CAADP process at the country level. A number of effective models are included in this chapter to illustrate how the integration of best practices can lead to impactful programs and the integration of young women and men into agriculture.

Capacity development at the environmental level

This refers to establishing the conditions necessary for demonstrating capacity at the organizational and individual levels. This includes the formation and implementation of broad policies and strategies conducive to stronger training institutions and individual capacity building.¹⁰ Various environmental dimensions, such as administrative, legal, technological, political, economic, social and cultural, impinge on and/or mediate the effectiveness and sustainability of capacity building efforts.

Responsibility for youth employment policies is often divided among too many government actors, resulting in poor coordination and a proliferation of pilot programs that do not reach scale. For example, a World Bank study of approximately 300 youth employment programs in 84 countries found that there is generally an over-weighting of programs designed to address the 'supply' side of the employment challenge in the form of skills training, while not adequately addressing the demand side of the equation.¹¹

The weaknesses in most development strategies and policies in Africa with respect to creating the right environment for capacity development for youth, as observed in NEPAD studies, include:

- Rural and informal sectors are not adequately integrated into the development agenda in terms of job and employment efforts. Much emphasis is placed on formal and urban job creation strategies through industrialization and Foreign Direct Investment (FDI) policies. Private sector strategies are urban-centered and focused on white-collar jobs, much to the detriment of rural farm and non-farm value chains that offer greater opportunities for rural youth and the formalization of the informal sectors.
- Greater emphasis on higher education, science, and technology without concomitant and equitable strategies and policies to improve mid-level education in technical and vocational institutes for skills development. A positive youth development approach must be long-term, comprehensive, and holistic, creating ladders of opportunity that prepare young people to be prosperous in the agriculture and food value chain, as well as contribute to family, community, and national prosperity.
- Most of Africa's industrialization policies do not have complementary human development and skills development strategies, especially technical skills and other, equally important, skills like 'foundational and socio-emotional skills'. These are required for a workforce to 'push' the development of a critical mass of trained people through relevant vocational training, so as to ensure that countries master new technologies aimed at increasing productivity.
- Access to resources, such as land, credit and financing, access to markets, and incentives to attract youth to agriculture, are non-existent or at best ad-hoc and politically motivated (NEPAD AGENCY, 2015). Sustained policy directions to create better capacity development environments are lacking. Youth tend to not be directly involved in policy formulation and hence their needs often do not figure prominently in policy-making processes. Training without access to resources will still leave youth seriously encumbered in establishing sustainable businesses in agriculture.
- Young people generally are not adequately prepared for active engagement in policy dialogue, and adults are often not prepared to welcome them into policy discussions and decision-making.

Organizational and institutional capacity

Capacity at the level of the organization refers to skills, talents and resources that influence an organization's performance. This includes: human resources (capacities

of individuals in the organization); physical resources (facilities, equipment, materials); intellectual resources (organization strategy, strategic planning, management,

⁹ Hartl, M., (2011) 'Training and Capacity-Building for Rural People – How to Define the Landscape?' In: NORRAG NEWS, Towards a New Global World of Skills Development? TVET's turn to Make its Mark, No.46, September 2011, pp. 58

¹⁰ JICA Task Force on Aid Approaches. Capacity Development Handbook for JICA Staff. JICA, March 2004

¹¹ The World Bank, 2007. A review of interventions to support young workers: Findings of the Youth Employment Inventory

business know-how, production technology, program management, process management (e.g., problem solving skills, decision-making process, and communications); inter-institutional linkages (networks, partnerships); incentive and reward systems; and the organizational culture and leadership of managers.¹²

Agricultural training institutional reforms and capacity building should be geared towards strengthening and aligning local Agriculture Education and Training (AET) capacity to produce the numbers and quality required for a skilled work-force with technical, managerial and entrepreneurial skills to champion Africa's agriculture-led development.

The capacity of Africa's AET systems to deliver the training required to attract youth to agriculture depends on three major factors:¹³

- **Curricula:** African AET institutes need to take a critical look at their curricula at all levels, taking into consideration the dynamic changes in the agriculture sector, which have shifted from family on-farm production for subsistence towards consumer and market needs. The curricula must respond to young people's interest by offering a wider range and more appealing set of courses. Also, career paths could be structured along value chains and around themes such as agricultural marketing, entrepreneurship, post-harvest management and processing, agribusiness, bio-information and biotechnologies, natural resource management, rural finance, value chain promotion, and other relevant and appealing themes.
- **Improving training methods:** Promote the training of trainers by Innovation Centers (ICs) on best-practices for delivering services to different target groups, such as farmers, agribusiness workers, processors, agripreneurs and start-ups. ICs can even develop non-academic programs pitched at a higher level for specific target groups, such as farm managers and supervisors in processing companies. This requires the implementation of modularized training delivery, in addition to full-time delivery.
- **The involvement of the private sector:** The private sector directly offers a very wide capacity for AET through on-the-job training and educational sponsorship for their staff. The private sector is a major contributor to knowledge generation. Moreover, there is a critical need to strengthen linkages between AET institutions and commerce

and industry. They will help AET institutions to generate the necessary numbers and quality of skills in direct response to demand, an important point in ensuring AET graduates do not go unemployed. The private sector is also the incubator of new ideas for young agripreneurs.

“YOUNG PEOPLE MUST WORK HARD IN ORDER TO CLAIM THEIR SPACE; THEY SHOULD MAKE THEMSELVES RELEVANT BY BEING INFORMED AND KNOWLEDGEABLE ABOUT THEIR SUBJECT OF RESEARCH (AGRICULTURE). THEY MUST ALSO SEEK OPPORTUNITIES AND BE PREPARED TO MAKE SACRIFICES IN ORDER TO ACHIEVE THEIR GOALS”

DR LINDIWE MAJELE SIBANDA -CEO FANRPAN

Institutional capacity strengthening programs should be based primarily on the formal and informal connections between interrelated components within the AET system and the Agricultural Innovation System (AIS). Such connections expose individuals to new information and knowledge and provide them with opportunities to test their

own knowledge. Partnerships that are long-term, comprehensive, and transformational should be at the core of institutional strengthening initiatives.

Formal training – According to Coombs and Ahmed (1974), formal education describes the hierarchically structured, chronologically graded education system, running from primary school through university. In addition to general academic studies, it includes a variety of specialized programs and institutions for full-time technical and professional training. In contrast, they state: “non-formal education is any organized educational activity outside the established formal system, whether operating separately or as an important feature of some broader activity, that is intended to serve identifiable learning clienteles and learning objectives”.

Formal AET is needed for the production of skilled manpower to serve the agriculture sector through extension, research, entrepreneurship and commerce. However, non-formal agricultural education is often provided both by public and private organizations. It is particularly needed for training of farmers, farm households, and workers, and for capacity building in a wide range of community based organizations and groups.

Informal and non-formal training – Informal training differs from formal learning to the extent that it takes place outside of the institutional education and training systems. It does not require structures such as defined learning sites, curricula, teachers and trainers. However, in recent times, informal training has developed to include recognized curricula and training methodologies (mostly in modular forms). Informal training often includes that undertaken by civil society or community based organizations in the course of their programming or advocacy work. In the more classical scenarios, informal and non-formal training involve learners who:

¹² UNESCO-IICBA, 2006. International Institute of Capacity Building for Africa- Capacity Building Framework

¹³ Agriculture Education and Skills Improvement Framework-NEPAD, (2015)

- Do not have formal training, as they normally lack the basic qualifications that would make it possible for them to access formal education in the normal school systems;
 - Are generally unable to spend long periods of time away from work and family because of their limited income or precarious family situations;
 - Generally have a lower level of school education than employees working in the formal economy; and
 - Have no access to vocational or formal schools, or to structured forms of continuing what training they may have, which further prevents the acquisition of recognized qualifications.¹⁴
- Identifying and providing relevant information to particular target groups (for example youth and women);
 - Working together with actors, at different levels, to ensure participation by the target group;
 - Tailoring vocational education and training interventions, materials, and pedagogical approaches to suit the needs of target groups;
 - Where appropriate, providing certification to aid in bridging the gap to formal education or training opportunities; and
 - Embedding training in the work of social movements, local organizations and the broader education system to create institutional structures.

The skills requirements for those employed in the informal economy are as complex and wide-ranging as the activities and forms of employment found within it. Yet, vocational education and training and entrepreneurship have a key role to play in improving conditions for informal training and those working in the informal economy. This can be achieved, for example, through setting up public training centers and formalizing informal training systems. Most informal training and capacity building systems are oriented around the following types of activities:

In advancing non-formal and informal training systems, lifelong learning and Recognition of Prior Learning (RPL) in which the skills of a workforce are continually upgraded through a lifelong learning approach should also be promoted. The implementation of effective RPL for assessing the competences of individuals with prior learning and competencies achieved out of the system should be mainstreamed. This is important given the contextual factors that have prevented individuals, and entire communities, from taking advantage of formal education and training opportunities.

Individual capacity

Capacity at the individual level is the most fundamental element and refers to the will and ability of an individual to set objectives and to achieve them using her or his own knowledge and skills. Capacity at the individual level includes knowledge, skills, values, awareness and, most importantly, attitude. It can be developed through various ways, such as formal, non-formal and/or informal education, training, on-the-job-training (OJT), and independent reading.¹⁵ The traditional training of youth into agriculture in building individual capacities and skills is centered on the formal education systems. In the classical approach, students are trained at all levels in educational structures to undertake different tasks in the field of agriculture along specific hierarchical systems with emphasis on certification and job placement.

However, new approaches are emerging (due to the limitations of formal systems) in which emphasis is being placed on informal and non-formal AET and focusing on skills acquisition. At Songhai Centre in Benin and at many ATVET institutions, a growing number of

young graduates with academic degrees from formal institutions are undertaking training to improve their practical skills. Many 'academic graduates' from formal systems are now learning about entrepreneurship, value chains, and ICT applications from the informal and non-formal systems.

Capacity building of individuals is essential to ensure the success of Africa's food security initiatives. Rural youth continue to face barriers to education and training, especially due to lack of funding. A study by AEO¹⁶ shows that Africa's rural youth are the poorest working group of youth – a fact that is compounded by another fact, i.e., that rural youth (especially women) in low-income countries generally have lower educational qualifications.¹⁷

New approaches are emerging at all levels where non-formal and informal training measures are focusing on training and capacity building, targeting specific sectors of the economy (especially agriculture and rural

¹⁴ Patrick Werquin. (2008). Recognition of non-formal and informal learning in OECD countries: Lifelong learning in Europe

¹⁵ JICA Task Force on Aid Approaches. Capacity Development Handbook for JICA Staff. JICA, March 2004

¹⁶ http://www.africaneconomicoutlook.org/en/theme/youth_employment/employment-outlook-for-youth/

¹⁷ http://www.africaneconomicoutlook.org/en/theme/youth_employment/employment-outlook-for-youth/

development). Projections of future rural labor demands indicate that skill diversification is key to involving youth in the transformation of agriculture, from crop production to value addition to the use of labor-saving technologies.¹⁸ The introduction of demand-driven and labor market-driven curricula is the first step in ensuring that individual capacity building is relevant to the changing context. Curricula for vocational training and skills development needs to be well adapted to cultural norms and address the gender biases that exist; rural young men and women have the same capacity building needs. Where females tend to focus more on value addition tasks and less labor-intensive jobs, livelihoods training should take this into account to ensure that all individual capacity needs are met.

Agricultural capacity building needs to be put into context that enables youth to grasp concepts quickly and adapt them to their daily lives. Fewer rural youth complete primary and high school than their urban counterparts, and AET systems thus need to develop simple tools and easy-to-understand training materials. The CAADP-ATVET Project has made significant progress in this regard, producing training materials that are simple to understand regardless of the level of formal education attained. It is also offered in modularized form, which allows trainees to focus only on those areas of particular interest. The agripreneurship module is also simplified to allow an introduction of basic agribusiness concepts (which include budgeting and planning) to ensure that trainees can begin to run their enterprises as businesses.

Youth Empowerment and Capacity Building in Agriculture

While much can be said about Africa's potential, the youth bulge, the opportunities in agriculture and how best to build the sector's capacity to engage Africa's young people, little of this will be realized if young people do not see themselves as leading actors in coming up with innovative solutions. Youth empowerment has long been a key phrase in Africa, without much practical understanding of how we actualize it in prevailing cultures that give power and leadership opportunities to elders in our communities. For the purposes of this paper, youth empowerment is defined as follows: "Young people are empowered when they acknowledge that they have or can create choices in life, are aware of the implications of those choices, make an informed decision freely, take action based on that decision and accept responsibility for the consequences of those actions. Empowering young people means creating and supporting the enabling conditions under which young people can act on their own behalf, and on their own terms, rather than at the direction of others."¹⁹

The rote learning and teaching used across much of SSA further compounds this challenge, instilling a belief that youth are background actors in their communities and should be seen and not heard. Combined with the fact that agriculture is a sector that has historically and culturally been the backbone of many African countries and therefore controlled by elders, empowering youth to engage and lead is an even more complicated proposition. So how can a culture of respecting elders be maintained while recognizing that if youth are not empowered in this critical sector, it will be hard to realize Africa's agricultural potential?

In the US, studies show that early engagement of youth in Out of School Time (OST) activities like Boys and Girls Clubs of America, Girl Scouts, 4-H and others create a positive trajectory for youth. These programs focus on creating positive youth development by combining the strengths of youth with family, school, and community resources across adolescence (Lerner, et al., 2005). No matter the project – agriculture, engineering, or healthy sciences – what emerges are youth who contribute to their community and are prepared to succeed. This idea that youth engagement, development and empowerment begins at a young age is one Africa must adopt across the continent if it is to realize true systematic development in sectors such as agriculture.

This will be realized through, greater collaboration between employers and training providers and more effective promotion of entrepreneurship among young women and men. This also involves the provision of better information on market opportunities, training in business skills, and access to capital (credit and other financial services) and mentoring by qualified persons. The establishment of a social floor for young people by improving their working conditions – promoting their rights in the workplace and recognizing their voice and representation at work – and guaranteeing a minimum income that covers living costs to protect the working poor (in keeping with the ILO Declaration on Fundamental Principles and Rights at Work) would help to create a system of equity for youth.

¹⁸ <http://www.ifad.org/events/gc/30/roundtable/youth/benell.pdf>

¹⁹ Commonwealth Plan of Action for Youth Empowerment, 2007-2015

It is important to note that, despite many reasons to conduct training, training and skills development may sometimes not be the only solution to a problem. There are many other means that impact on someone's ability to do their work. The following, among other factors, could be limiting individual capacity:

- Lack of skills, knowledge, or experience;
- Not having the right equipment or resources;
- Not being encouraged by managers and colleagues to do the right things;

- Lack of standards or expectations that are set and communicated; and
- Bad workplace morale or conditions.

Along the development spectrum, therefore, efforts to empower youth in agriculture should recognize these individual needs and the urgent requirement to create environments conducive to learning. In addition to the need for increased investment in relevant skills training, the new paradigm must emphasize training that is appropriate to the job market and the informal sector.

Critical Needs and Focus Areas for Training and Skills Development

Entrepreneurship and financial literacy

To improve the productivity of youth in agriculture both technical and business skills training must be provided to enable the use of sustainable agricultural practices, improve access to finance, and generate higher incomes. This is an innovative approach for capacity building. Entrepreneurship and innovation are increasingly recognized as important drivers of economic growth, productivity and employment, and are key aspects of economic dynamism. The ultimate objective of entrepreneurship education and training systems should be to facilitate the creation of an entrepreneurial culture, which in turn will help young people in agriculture to identify and pursue new opportunities. Entrepreneurship education is critical for ensuring that entrepreneurship is embedded into the formal educational system and offered through partnerships with the private sector, along with informal training and rural apprentice training programs.

Agripreneurial and entrepreneurial training improves the commercial performance of target groups. This is clear from the CAADP ATVET project conducted in Kenya and in other countries. The project uses a comprehensive set of action-oriented training instruments and experimental learning methods in order to develop and enhance the business management and personal competencies of the learner. Different concepts are applied – Competency-Based Economics (CBE); Formation of Enterprise (FoE); Farm Business Schools (FBS); Farming-as-a-Business (FaaS); Farmers Entrepreneurial Training (BUS).

Under the agripreneurship training, young people are empowered to acquire personal qualities such as self-confidence, innovation and creativity; they are imbued

with the ability to take initiative, and a willingness to take calculated risks and to collaborate with others in the agriculture space. They learn to save, invest and grow. These competencies help them select and shape their career paths as entrepreneurs or employees. Most curricula and learning environments are action-oriented; more than 50% of the program's time consists of practical research in identifying business opportunities, assessing resources for setting up and steering a business, and learning from successful entrepreneurs in their companies and in the classroom.

The African Network for Agriculture, Agroforestry and Natural Resources Education (ANAFE) has seen the need to improve agribusiness education in Africa and has developed a new curriculum on agribusiness for use by educational institutions in Africa. According to Prof. Henry Bwisa, the Head of the Agribusiness Department at the Jomo Kenyatta University of Agriculture and Technology (JKUAT), existing agribusiness curricula borrow heavily from agricultural economics. "Many existing agribusiness courses have lifted up to 70% content from agricultural economics," he has said.²⁰ To address this anomaly, ANAFE's new curriculum is structured to include practical agribusiness instruction that forms about 70% of the courses and also focuses on the need to build the capacity of trainees to align their skills with the demands of the private sector.

A big challenge facing young farmers' success is the fact that most of them are not financially literate, meaning that they are likely to make poor financial decisions that could harm their businesses. Financial literacy, savings,

²⁰ Agriculture Education News, Vol. 20.1 – ANAFE

and access to financial services are critical if youth and SME owners are to access to credit. There is great need for responsible, youth-friendly financial services and products, including access to capital for entrepreneurs.

ICT in agriculture

Whether individual young farmers are able to act on the opportunities provided by the current market situation depends largely on the extent to which ICTs are available to them, whether they can afford their use, and whether they have the skills to use the tools and services. Integrating ICTs into agricultural programming and interventions can increase effectiveness, broaden impact and ensure retention of skills. ICT-enabled services are relevant and useful to improve the capacity and livelihoods of youth by creating networks for information exchange and support. Changing the perspective of farming from a back-breaking, barely remunerative, labor-consuming task to a much more profitable source of income is required. ICT not only improves the status of young persons, but also of the farming sector in general. Youth who used to see farming as a last resort source of income begin to see it as a potentially strong source of rewarding business opportunities, thanks to the availability and application of ICTs.

One practical application of ICT in agriculture is the use of cell phones to access current market information. The ESOKO platform is a prime example. It was developed in Uganda in 2005 as a way to collect and share market prices via SMS. It has since developed into a broad-spectrum platform offering such services as weather forecasting, crop production tips from extension professionals, and targeted advertising by suppliers. Since its establishment, ESOKO has

Financial literacy and saving habits should be instilled at an early age. The impact of financial skills for young people is greatest when woven with other elements of skills-training programs.

contributed more than an 11% increase in revenue in 10 different countries, providing input and output prices to more than 350,000 farmers in 170 markets via some 9.5 million text messages.²¹ The opportunity to develop ICT applications for the agriculture sector is both exciting and potentially rewarding for young people. Many young 'hackers' with practically no knowledge in agriculture have accepted the challenge and are using their ICT skills to increase agricultural productivity. It has become imperative for young people in agriculture to appreciate the importance of, and to leverage, the applications of ICTs to marketing, planning, innovation and logistics management in agricultural value chains.

The Technical Centre for Agricultural and Rural Cooperation (CTA) supports youth capacity building and entrepreneurship in ICT for agriculture. They promote youth employment opportunities through the Agriculture, Rural Development and Youth in the Information Society (ARDYIS) project, which won an international award at the 2015 World Summit on the Information Society (WSIS).²² The 'AgriHack Talent' initiative is supporting ICT innovations and entrepreneurship in agriculture by youth. The initiative encompasses a series of activities, including a 'hack-a-thon' or coding competition, followed by capacity building, entrepreneurship support in ICT and agriculture, and promotion of the ICT products developed (see Chapter 5 for more details).

Value chain methodology and approaches

More and more farmers in Africa are integrated into value chains. In many African countries, achieving national agricultural goals depends on enhancing the skills and knowledge of those working in the sector so that they can participate more effectively as members of agricultural value chains. Young farmers in particular need to understand, for example, what market quality standards mean and the benefits and constraints associated with formal production and delivery contracts. The growing participation of African farmers and agribusinesses in national and international value chains is giving rise to a tremendous demand for advanced training, skills development, and professionalism.

While existing training programs on how value chains work are often innovative and based on needs, there are still some fundamental problems. Apart from few educational institutions that are currently piloting value chain courses at the diploma and university degree levels, many formal agricultural institutions are not offering courses in value chain methodology and analysis. Most value chain training has been or is presently conducted outside public institutions. The GIZ Valuelink model and manual, the SVN Model, and the Pro-poor value chain methodology are among the few value chain training methodologies that are offered through non-formal training systems. The GIZ Market-

²¹ ESOKO Website (ESOKO – Our story) <https://esoko.com/about-us/our-story/>

²² <http://Ardyis.cta.int/en/news/project-news/item.260-ardyis-wsis>

Oriented Agricultural Program (MOAP) in Ghana, the Private Sector Development Program (PSDA) in Kenya, and the overall GIZ CAADP Program supporting NEPAD, have made great efforts to incorporate value chain methodologies in the curricula of selected training institution in Africa. Cape Coast University in Ghana and Jomo Kenyatta University in Kenya have now adopted these methodologies in their curricula, but much more must be done to promote value chain training and methodologies across the continent.

Local private training companies and institutes are emerging to provide technical training on value chains,

often in collaboration with NGOs and development partners. In most countries, there is a sufficiency of value chain experts available (thanks to work done through the GIZ CAADP training program and NEPAD-CAADP, as well as such development partners as USAID and SNV), but many of these professionals themselves need training to cope with rapid changes in African value chains. All in all, the amount of training provided through private initiatives has risen in recent years but usually focuses on short-term courses. Embedding new value chain training in formal technical educational systems remains the best option for sustainable capacity building aimed at agricultural development.

Revolutionizing Agriculture Education and Training in Africa-holistic Approaches

CAADP's Agriculture Education and Skills Improvement Framework (AESIF)

In CAADP's ten-year review and subsequent forward planning (NEPAD, 2013), Africa's capacity to generate knowledge, foster learning, and enable skills development among its workforce is recognized as a game changer in the context of the effort to fundamentally reshape African agriculture. Yet, notwithstanding widespread acceptance of the essential role of AET in igniting an agricultural transformation, there is still no credible and overarching continental-level framework, with a realistic and achievable concomitant strategic plan, to effectively address the core problem of a deficit in human capacity within Africa's agriculture systems. In operationalizing the Malabo implementation strategy and roadmap, an Agricultural Education and Skills

Improvement Framework (AESIF) is needed to excite and harmonize a vision and agenda that will both power, and empower, AET – to include, centrally, both ATVET, as well as TAE – over the next decade (2015-2025). The emergence of AESIF is timely and, under current global and regional demographic, political and economic conditions, its urgency is ever more pronounced.

The objective of AESIF is to improve agricultural education and training for strengthening the human capital needed to achieve the CAADP vision of agriculture-led development in Africa. Building on lessons learned from CAADP's first decade, AESIF envisions:

Figure 6.2 AIESEF Key Priority Areas

POLICY, GOVERNANCE AND MANAGEMENT

- Governance reform and integration between Agricultural Innovation System stakeholders (T&L, research, rural advisory services, agribusiness)

TEACHING AND LEARNING SYSTEMS

- Declining enrolments and programmes that fail to meet sector and market demand
- Need for relevant and realistic curricula
- Harnessing the power of ICT and social media

FINANCING AND RESOURCE MOBILISATION

- Under-funded systems
- Lack of sustainability
- Cultivating partnership

- Playing a central role in the building, and continuous replenishment, of much-needed human capital to drive the agriculture transformation agenda in Africa;
- Setting visionary goals, building partnerships, and improving efficiency in AET
- Providing a common agenda in leveraging multi-consortia private-public partnerships on agricultural education and skills development to drive innovation and wealth creation;
- Offering a set of practical guidelines and tools for the sharing of experiences and learning, as well as the brokerage of new and catalytic public private partnerships; and
- Ensuring coherence between initiatives, alignment between actors, and integration.

Agricultural education and skills improvement is a wide umbrella concept. In the specific context of AESIF it refers specifically to the improvement of post-secondary and upper-secondary education and training. For the purposes of AESIF, these tiers are recognized as:

- Tertiary Agricultural Education (TAE) acquired through degree-, diploma- and certificate-conferring institutions, which also includes post-graduate education (MSc-level and above);
- Agricultural Technical and Vocation Education and Training (ATVET) acquired through formal ATVET institutions where these exist, as well as informal

sector learning, acquired through active practice/doing within the informal sector.

AESIF focuses on three major priorities:

1. Reformed agricultural education systems that enhance support to smallholder farmers in achieving sustainable intensification as part of their transition into modern family farms;
2. Agricultural education systems that strengthen the position of farmers, women and youth in agricultural value chains and promotes access to regional markets; and
3. An agriculture sector that is attractive to youth based on profitability, competitiveness, and the use of modern tools.

These are the same characteristics needed for agriculture to deliver growth, to improve food security, and to preserve a fragile natural environment. Africa needs agricultural education that delivers for the youth, and that develops and implements curricula that encourage entrepreneurship, agribusiness development, and responsiveness to current and emerging issues (gender, climate change, and policy). Three key priority areas have been defined for improving AET and encouraging the emergence of an agricultural human resource/knowledge system that drives smallholder-led agricultural innovation and development. These priority areas are: 1) policy, governance and management; 2) teaching and learning systems; and 3) financing and resource mobilization (Figure 6.2).

CAADP Agriculture Technical and Vocational Education and Training

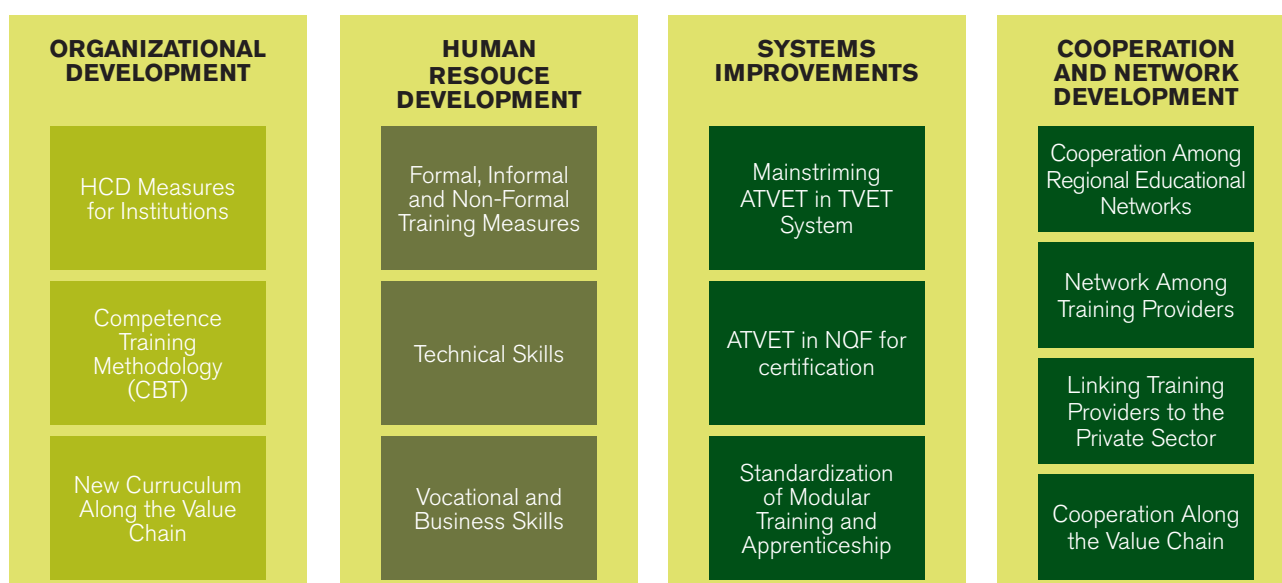
In 2012, NEPAD's Planning and Coordinating Agency (NPCA) launched a new project: "Promotion of Technical Vocational Education and Training for the Agricultural Sector in Africa (CAADP-ATVET)", with the support of the German government through GIZ. The current phase of the Project is expected to go on for six years. The Program is currently operating in six pilot countries (Ghana, Kenya, Benin, Togo, Malawi and Burkina Faso), but is meant to eventually work at the continental level.²³

The aim of the ATVET Project is to develop and implement market-oriented qualification measures, as well as coherent concepts to incorporate technical vocational training into national agricultural education systems. The Project seeks to develop industry relevant qualifications of value chain actors, while embedding the value chain approach to agricultural education within implementing institutions.

To improve ATVET in Africa, the CAADP-ATVET Project follows two related strategies: The first involves the development and support of the implementation of aligned education systems in the agricultural sector (this is the political dimension on continental and national level). The second focuses on the qualification of individuals and institutions in order to develop and implement inclusive and coherent agriculture sector development strategies (this implementation work is mainly at the national level). The Project supports partner countries in developing market-oriented qualification measures and including agriculture-related technical vocational training components in the national education system. In the first implementation period of the project (2012 to 2014), work commenced in two pilot countries, Ghana and Kenya; in 2014 the pilot approach was extended to four additional countries (Malawi, Benin, Togo and Burkina Faso).

²³ Miss Caroline Mutepefa, a Technical Officer in the GIZ CAADP program who supports the CAADP-ATVET Project, helped develop this section

Figure 6.3 CAADP ATVET capacity building model



Despite many efforts to promote ATVET in Africa, the continent still lacks technically and professionally qualified human resources flexible enough to effectively respond to fast changing agricultural markets. Based on studies and interviews conducted during this study, the following core problems were identified as deterrents to ATVET systems in Africa:

The ATVET Project seeks to address the four elements in the capacity building model shown in Figure 3 through targeted interventions in the following prioritized areas:

- **Systems approach:** Unlike most capacity development efforts that concentrate at the micro-level, CAADP-ATVET takes a systems approach in delivering results. This includes working with policymakers to embed agriculture in the countries TVET approaches (including within the NQF), building the capacity of institutions providing training, and designing training models for formal, informal and non-formal training.
- **Curriculum and training provision:** New methodologies for developing agricultural training and curriculum along value chains have been developed in all the pilot countries. There are curricula for pineapple and citrus (Ghana); horticulture, dairy, and aquaculture (Kenya); sesame, rice and cashew (Burkina Faso); rice and meat (chicken, lamb and pork) (Benin); horticulture (pineapple and mango) and aquaculture (Malawi); and rice and aquaculture (Togo).
- **Curriculum on agripreneurship:** Curriculum and training models in agripreneurship have been developed to support technical training along the value chain. Most of the value chain curricula have agripreneurship embedded in their models, but apart from these embedded modules, generic agripreneurship modules have also been developed for training young farmers to treat agriculture as a business.
- **Private sector demand-driven modular curriculum:** Each value chain curriculum was developed in concert with private sector industrial entities and meets country-specific occupational qualification standards along the value chain. Students choose which module meets their occupational interest.
- **Building the capacity of ATVET trainers:** Competence-based education and training (CBET) methodologies have been imparted to all ATVET trainers to support the training of youth in skills acquisition through hands-on training in agricultural education.
- **Training of youth with new curricula and modules:** In all six pilot countries, approximately 500 youth are undertaking formal training in different ATVET institutions and in different modules along the various value chains. Other non-formal modular training is expected to benefit over 2,000 youth across the pilot countries.
- **Knowledge management system:** A knowledge management portal has been established on the NEPAD/CAADP website to make all the curricula and training models developed by the ATVET project, as well as other ATVET contributors, accessible to the rest of the world. These training models are ready to be customized for the different training systems across Africa.

AGRA capacity building initiatives

The AGRA mission is to trigger a uniquely African green revolution that will transform African agriculture into a highly productive, efficient, competitive and sustainable system that assures food security and lifts millions out of poverty.²⁴ To achieve this mission requires a cadre of scientists, technicians, agribusiness personnel, and farmers with various capacities. AGRA capacity building initiatives aim at addressing gaps in capacity needed to increase the productivity and incomes of smallholder farmers through the development of skill sets and capabilities that are required to promote a value chain-driven transformation of smallholder-based agriculture in SSA. The stocktaking for CAADP compacts in African countries highlights the need for human resources at all levels of the agriculture sector that can develop solutions to smallholder agriculture-related problems and ensure effectiveness in the implementation of either production or agribusiness. The objectives of AGRA's capacity building initiatives are:

- To provide PhD fellowships to build the capacity of African scientists and policy analysts working on improving priority African crops and addressing smallholder farmers' challenges;
- To provide MSc fellowships and strengthen curricula in several agricultural disciplines in universities in sub-Saharan Africa; and
- To offer short-term training courses to scientists, technicians and other key stakeholders (including agro-dealers, seed company personnel, field and laboratory technicians and farmers) to improve crop productivity and agriculture-related policies in Africa.

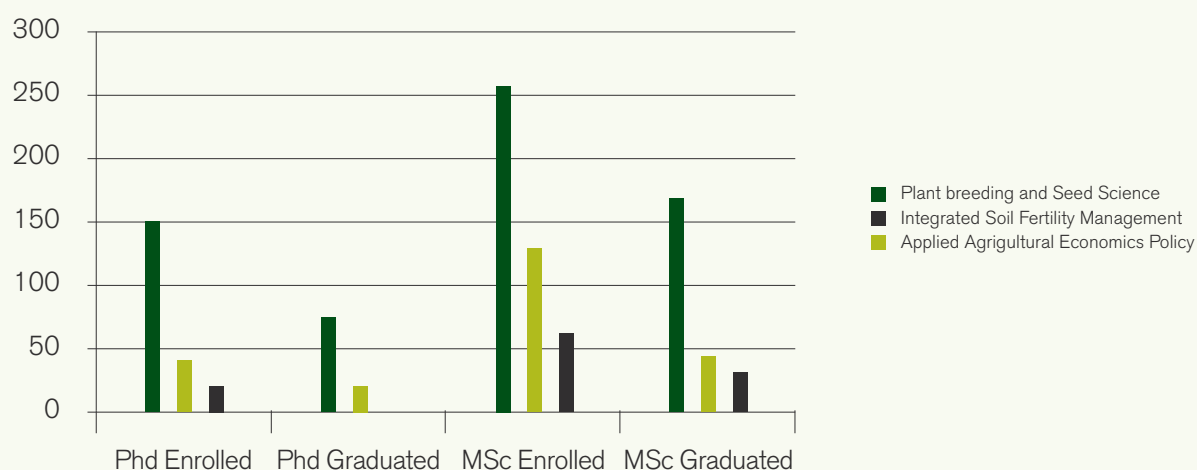
AGRA provides funding to support specific programs in the universities or training institutions that enables them to fund a dedicated number of full scholarships,

infrastructure to make the program more practical (30-40% of total grants), some staff costs and institutional operational costs. This has strengthened not only the capacities of students, but also the efficiency and relevance of the training institutions. The programs that have been funded work with various agricultural sectors such as NARS, CGIAR, seed companies, and ministries of agriculture to provide extra student supervision and places for student attachment as they conduct research.

The capacity building initiatives have significant impacts in farmers' fields, in agribusinesses, and in academic circles. Trained students have produced more than 90 improved varieties of a wide range of crops, including maize, rice, beans, cassava, groundnuts, finger millet, sorghum, and cowpea that have been released by governments and are already commercialized and grown by farmers. Over 200 scientific publications have been produced as well, resulting in significant global knowledge sharing about priority African crops. Businesses and farmers have significantly increased their productivity due to these capacity building activities.

Effective partnerships with international level universities such as Cornell University (USA), Iowa State University (USA), and Wageningen University Research (The Netherlands), ensures that the training programs are capturing current developments and attaining international standards. Students are recruited from 16 SSA countries, and a target of at least 40% of these students being female has been established. This has been easier to achieve in some subject areas and regions than others. The highest female student enrollment (47%) corresponds to AGRA's support for soil health training. AGRA's staff work with delivery universities to assist female students with small children acquire family accommodations and medical

Figure 6.4 AGRA post-graduate training program



²⁴ <http://agra-alliance.org/who-we-are/our-story/>

insurance that covers maternity. Staff also partner with the African Women in Agriculture Research and Development (AWARD) program to enable mentoring of some of their promising female students. The overall gender balance of all post-graduate students sponsored by AGRA indicates that about 37% of them are women.

There are 5 PhD regional training programs: Agricultural economics and policy (1), integrated soil fertility management (2), and plant breeding (2). Additionally, there are MSc programs in 15 SSA universities that provide training in applied agricultural economics, soils, and seeds-related disciplines. Figure 4 shows the accomplishments to date in these programs.

Best Practices and Models of Capacity Building and Youth Empowerment

Promoting decent rural youth employment and entrepreneurship in agriculture and agribusiness

The NEPAD Rural Futures Programme supports initiatives that promote both agricultural and non-farm development that allow rural people to move to new jobs that offer alternative and greater income potential for the poor (especially women, smallholders farmers, and landless workers) than agriculture. It seeks to support small- and medium-size enterprises in rural areas that can facilitate change, generate employment, and add value through post-harvest processing of agricultural products and facilitating transport and marketing. One project of the Rural Futures Programme is called the “Promoting Decent Rural Youth Employment and Entrepreneurship in Agriculture and Agribusiness” project, and is financially supported by the African Solidarity Trust Fund (ASTF). It also receives technical support from FAO, in particular with respect to operationalizing NEPAD’s Rural Futures Operational Action Plan. The project supports the Rural Futures Operational Action Plan in two of its four objectives: 1) Improvement of Economic Capabilities (agricultural income improvement, non-agricultural income improvement, improvement of rural industries, and development of rural infrastructures); and 2) Improvement of Human Capabilities (development of vocational and technical education standards and skills development to create employment opportunities in the rural space).

Specifically, the project in its first phase is supporting four selected countries to:

- Formulate multi-stakeholder-led National Action Plans (NAPs) on Youth Employment and Skills Development in Benin, Cameroon, Malawi and Niger;
- Support the implementation and/or replication of approaches for school-based formal agricultural vocation and technical education programs (ATVET) – targeted at students aged 15-25 years by:

a) Developing national curricula along nationally prioritized value chains for ATVET mainstreaming within schools;

b) Mainstreaming entrepreneurship and business education within ATVET interventions; and

c) Facilitating a minimum of 400 internship opportunities (100 per country) for students in private sector agricultural and agribusiness companies.

- Support the implementation and/or replication of approaches for informal agricultural and agribusiness skills training targeted at out-of-school rural youth, aged 15-35, through:

a) National awareness campaigns/changing messages in collaboration with relevant rural institutions and value chain stakeholders (industry-led awareness programs and other partner programs); and

b) Provision of modular technical, vocational, and business skills for a minimum of 500 rural youth (125 per country), using existing and field-proven approaches (business incubators, JFFLS, the Songhai model and others during the inception phase).

- Supporting and facilitating enterprise development for potential and emergent young entrepreneurs in rural areas, initially targeting 50 SMEs per country for youth aged between 20-35 years, by:

a) Business plan development for selected viable business ideas and linking the youth with private sector entrepreneurs for mentoring and guiding the preparation of business plans;

b) Facilitating business meetings with financial institutions and relevant value chain actors to identify opportunities for funding, business incubation and mentorship; and

c) Facilitating PPP opportunities that can integrate youth-led SMEs into the agricultural value chains and enhance their access to land, markets and finance.

- Supporting and initiating policy dialogue among countries, regional organizations, and development and resource partners on a coordinated approach to

decent youth employment and entrepreneurship in Africa.

It is estimated that the project (i.e., entrepreneurship and enterprise development) will directly benefit 1,580 young people. In addition, up to 100,000 young people per country will indirectly benefit from awareness and outreach activities. It is projected that rural young women and men in Benin, Cameroon, Malawi and Niger will have greater opportunities for entrepreneurship and enterprise development, as well as access to decent farm and non-farm employment due to the project's implementation.

AGRA farmer training – empowering youth in smallholder agriculture

All of AGRA's major activities have elements of farmer/youth training. In this regard, AGRA focuses on building the capacity of farmer organizations (FOs) and service providers (SPs) in order to improve the delivery of demand-driven services to FO members. Technical, managerial, and organizational capabilities are needed by FOs in order to enable smallholder farmer members to aggregate their produce, and to create efficiency through economies of scale and access to critical inputs, such as improved seed and finance, as well as better access to market services. Strengthening these capabilities will lead to increased productivity, better prices and profitability, and ultimately to improved livelihoods of smallholder producers.

AGRA's FO capacity building approach is based on three activities: scoping, linking and learning. During the scoping phase, AGRA staff members assess the training needs of FOs using a Capacity Performance Indicator (CPI) tool that gauges the capacity development challenges and gaps of FOs. This is followed by development of capacity building plans for improving their institutional and managerial capacity, followed by a training of trainers program. The FOs is then linked to service providers through grant making, to enable the development and implementation

of appropriate capacity building plans. Using this process, AGRA has so far enabled FO capacity development that benefits approximately 158,000 smallholder farmers in 12 countries.

The third part of AGRA's approach to strengthening the capacity of FOs is that related to learning, where platforms/forums are created for peer review, knowledge sharing and learning. These activities are documented and widely disseminated and can be kept in a depository for farmer organizations for wider use.

Most of the training organized for farmer organizations and service providers (mainly SMEs) are embedded in projects funded by AGRA and implemented by grantees. However, in some instances AGRA collaborates with specific training programs such as the Agribusiness Management Program, which is implemented by the Association of African Business Schools (AABS). This is a certificate program targeting entrepreneurs and actors operating in, or supporting, agricultural value chains. AGRA's contributions to such collaborations are focused on the development of the curriculum and reviewing the quality of training being provided.

The Songhai training model^{25 26}

Songhai Training Centre is an Organization with the vision to establish an entrepreneurial platform of integrated development and an enabling environment to provide social, economic, technical and organizational solutions to reduce Africa's poverty for more sustainable socio-economic development. It was established in 1985 at Port-Novo in Benin and has now been replicated in Nigeria, Liberia and other African countries. The establishment of Songhai was motivated by the need to change the usual

trend of rudimentary agricultural production that often results in low yields, high production cost, high post-harvest losses and low incomes. The lack of entrepreneurial skills in agricultural education system, food insecurity, climate variability, wastage in natural resource utilization, and continuous increase in youth unemployment underscored the theory behind the Songhai Centre's desire to change the "ways of doing things". The organization is championing the development of the 'Green City' concept (Figure 5),

²⁵ Songhai is a Private Voluntary Organization initiated by Father Godfrey Nzamujo in 1985. The United Nations, NEPAD and other African Countries recognize it as a Regional Centre of Excellence and a model for agri-entrepreneurial training and development. It focuses on Youth, Women and Rural Development

²⁶ The Songhai Model is adapted from a synthesis report commissioned by NEPAD for the Feasibility Study of Modeling Successful Agricultural Vocational Centers for Youth Training. The study was led by Mr. Dan Acquaye of Agri-Impact Consult, Ghana (danacquaye@gmail.com) and supported by Mr. Abraham Sarfo (ATVET Advisor, NEPAD; Abraham.sarfo@nepad.org) and Miss Caroline Mutepefa, Technical Officer (GIZ-CAADP ATVET Project, caroline.mutepefa@giz.de)

Figure 6.5 Agriculture and service centers in the Songhai-Benin model of a green city

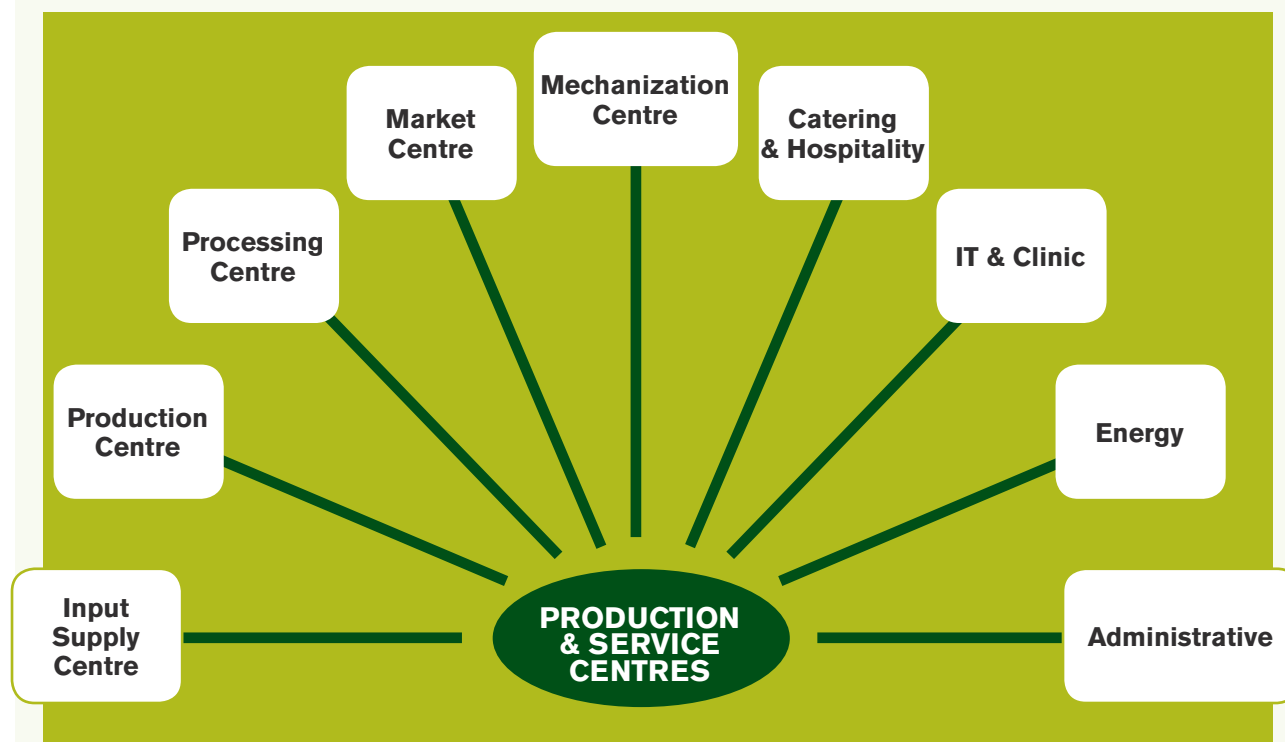
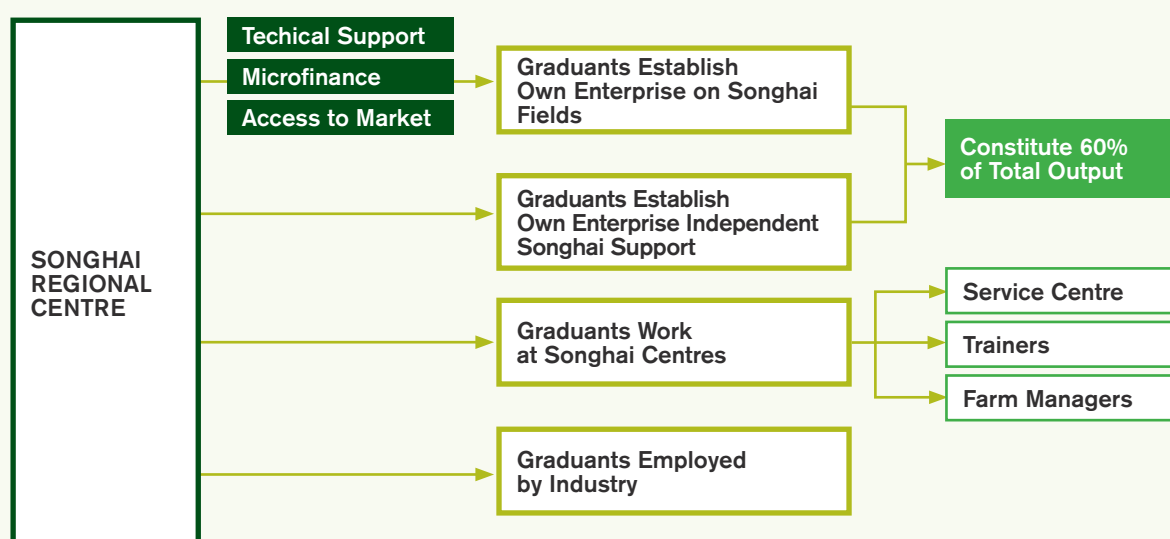


Table 6.1 The Songhai approach

Public-Private-Partnership	Songhai constitutes a platform for testing and selecting materials. Major incubating partners are: Africa Rice, IITA, UC system, EMRO, CORAF, ICRISAT, UNIDO, UNDP, NRCI, Amudike-Nigeria, Bio-Organics, Plumex, Underhill International, CFD etc.
Value Chain	All activities adopt the value chain approach. Every commodity produced is marketed. Secondary and tertiary centers support primary activities. Examples: yoghurt and tomato processing, cashew, rice and palm oil processing. At the meso-level, Songhai provides technical and micro-finance support.
Research Driven	ZERI-Zero Emission Research Institute; Zero Waste Approach; adaptive trials; research conducted to allow contextualization
Use of Authentic Technology	<p>Given the high level of productivity required to kick-start the process, technologies that only guarantee incremental growth will not be enough. Leapfrogging, authentic and sustainable technologies are deployed.</p> <p>Technological development therefore has a major role to play in the African Agro-business and socio-economic development.</p> <ul style="list-style-type: none"> ▪ The development of authentic technologies in farming systems (EM technology) ▪ The acquisition of quality genetic inputs (seeds, animal and fish breeds), ▪ Genetic protection techniques and management. ▪ Soil enrichment and management including water management
Training Methods	Hands on training: Curricula are based on different professions within the entire development plan. Theoretical lectures are not only linked to practical applications and demonstrations but are also embedded in them. Trainings vary in duration and length depending on the qualification pursued.

Figure 6.6 The output of Songhai training



which is characterized by high productivity, minimal waste, and resilient primary (production), secondary (processing), and tertiary activities (services – hotels, conference halls, markets, clinics, etc.).

The most unique attribute accounting for Songhai's success is the use of an integrated system that creates and enhances interrelations between the animal, crops, aquaculture, agro-industry, and machine production and services sectors. Additionally, information technology serves as an ideal educational platform for the Centre and, through risk sharing with its partners, Songhai has become an example of a successful culture, transforming people with its set of values and emphasizing the necessity for radical and conscious mobilization to change the status quo.

Songhai adopts different approaches to its service delivery. These approaches, summarized in Table 1, support its philosophy of building a Green City and creating entrepreneurial opportunities for youth. Key among the Songhai approaches are value chains, partnerships, integrated and enterprise mix, research driven, use of authentic technologies, entrepreneurship, hands-on training, and building a green rural city and empowering youth to access resources for production and marketing along the value chains.

Songhai has a concept of building a new type of socio-economic settlement that considers agriculture as the key pathway to rural development and poverty eradication. It considers that, agriculture does not develop by itself but rather requires a complex institutional support system – markets, inputs, credit, technology and management. It can grow when other services such as education, health, public facilities and commercial outlets are available. Songhai's integrated development model embodies these essential elements of services.

Outputs of Songhai and opportunities for graduates – Graduates of Songhai have four employment outlets that are available for the annual graduates, which number from 300 to 650 per year. About 60% of them establish their own enterprises, either feeding into the Songhai system or independent of it. Those feeding into the system receive micro-finance, as well as technical and market services. Songhai sells the produce from these entrepreneurs/ graduates, deducts their initial investment, and takes 7% of their net profit as interest on Songhai's micro-finance. Other graduates (about 10%) are also employed by Songhai as trainers, or farm managers, or to work at the service centers. Few of the graduates (less than 20%) seek employment with companies. Figure 6 shows the output of Songhai training and how the graduates enter the job market.

4-H Youth Empowerment in Agriculture Models²⁷

The 4-H model

4-H (Head, Heart, Hands and Health) is one of the largest and oldest youth empowerment programs in

the world, reaching 7 million young people annually. 4-H originated in the USA through the Land Grant

²⁷ Contribution by Shingirirai Nyamwanza Global Clover Network (Wholly owned subsidiary of National 4-H Council) Managing Director, Africa

Figure 6.7 The 4-H Model

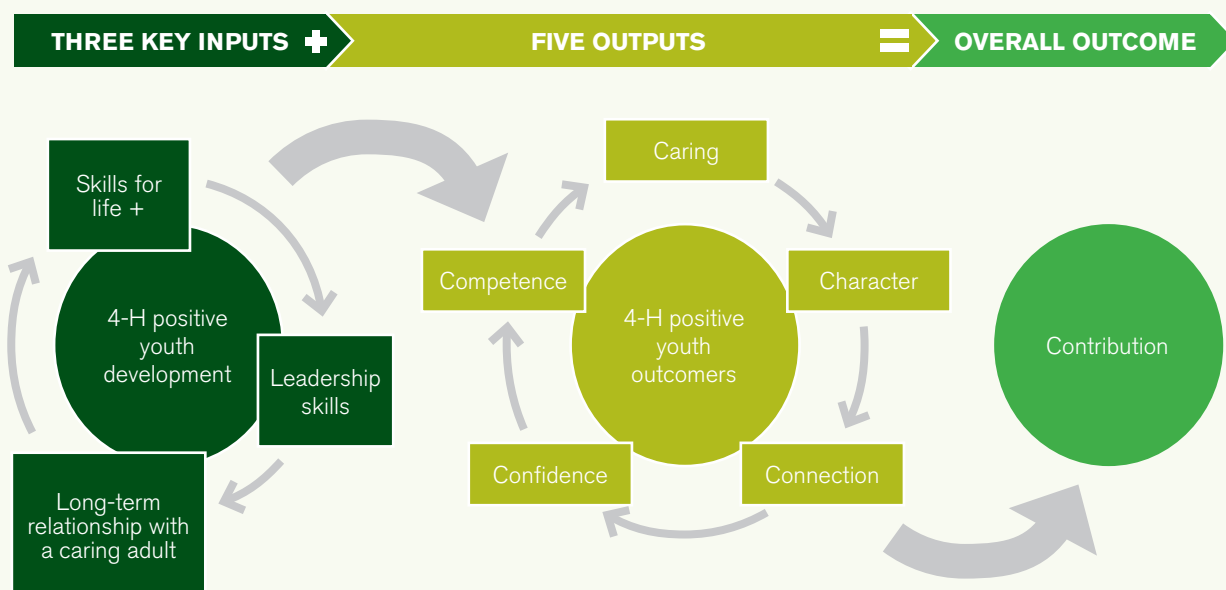
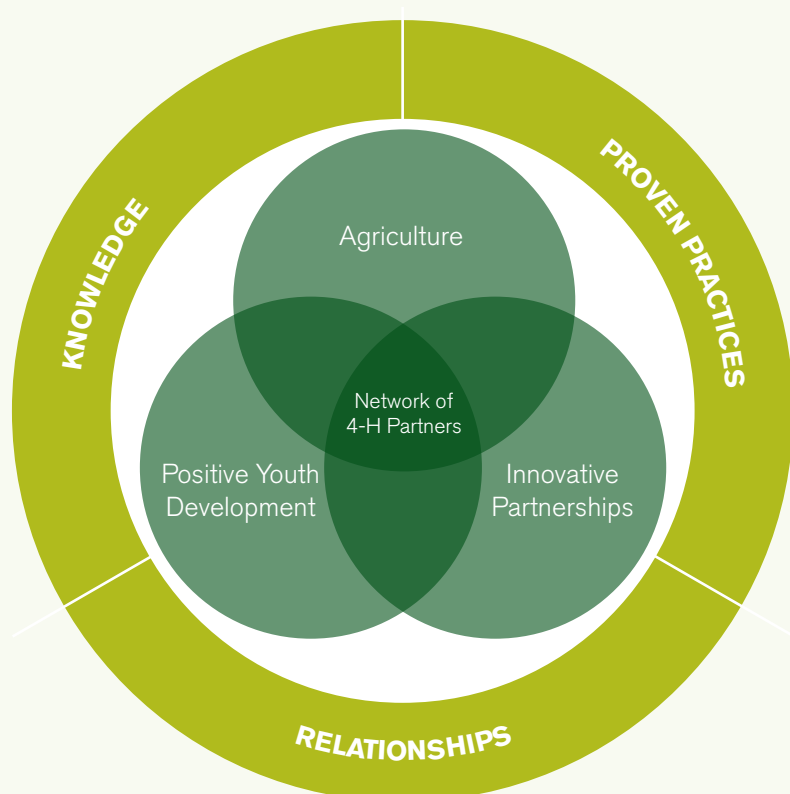


Figure 6.8 4-H three-part conceptual model for empowering African youth

Model to Address Sustainable Livelihoods and Food Security



University system as a means to help rural youth adopt new technologies in agriculture and develop life skills. Over time, it evolved to include a focus on positive youth development and empowerment and was independently adopted by communities and governments around the world, including 13 countries in Africa. The 4-H theory of change is shown in Figure 6.7 (Lerner et al, n.d.)²⁶

All 4-H programs, regardless of delivery mode (club, afterschool or camp) or subject matter (agriculture, healthy living, or citizenship), includes these three inputs:

- Skills for Life – Youth engage in hands-on, practical, and culturally relevant skill building projects and activities;
- Caring Adults – Youth form positive, long-term relationships with caring adult mentors and advisors; and
- Leadership and Service – Youth have many opportunities to practice leadership skills and engage in service to others.

The basic program delivery model is simple: youth join a club or group, supported by one or more adult advisors. They select 'projects' of interest to them and participate in learning experiences over time. Most 4-H clubs hold weekly or monthly meetings and pursue year-round activities. Club members elect officers and engage in learning about leadership and service. Youth also carry out home-based projects and activities to apply their learning and increase

incomes. Parents, educators, and community leaders are engaged as volunteer and paid staff to support 4-H activities and to mentor youth. Table 6.2 highlights unique aspects of that 4-H model of youth empowerment.

As noted earlier, when the 4-H model of Positive Youth Development is applied, the result is young people who contribute through service and leadership in the community. This powerful model of youth empowerment has also been effective in promoting career interests in agricultural and technological fields for both boys and girls.

Successful 4-H models in sub-Saharan Africa –

In 2010, 4-H began a partnership with donors to ensure that resources, commitment, and expertise were in place for country-led 4-H programs and partners in SSA to reach 250,000 young farmers and 1,000,000 household members. As shown in Figure 8, the project was based on a three-part conceptual model that integrated partnerships, agricultural science, and positive youth development science.

The project collaborated with locally led African 4-H programs to strengthen each organization's capacity and capability while they served as learning laboratories and peer mentors for programs across SSA. Simultaneously, the project worked at a regional and international level to engage public and private partners to improve the effectiveness of investments in programs that support young farmers.

From this work, two program models have emerged as

Table 6.2 4-H youth empowerment pedagogical strategies

Early and sustained engagement	Youth begin 4-H participation as early as primary grades (age 6) and continue into young adulthood
Holistic, systems approach	Programs are designed to engage multiple systems – family, community, schools, and employers
Youth as resources	Youth serve as teachers, mentors and coaches for younger youth and peers
Youth voice	Youth are active and respected partners in decision-making
Experiential learning	Programs are hands-on, following a 'Do-Reflect-Apply' process
Gender equity	Programs are structured to insure that girls and boys have equitable access to opportunities to learn, lead, and serve
Life skills development	Programs are designed for youth to learn, practice and apply essential life skills in key areas:
	· Civic engagement – citizenship, leadership, and community service
	· Business and financial – money management, record keeping, and business planning
	· Workforce preparation – career awareness, exploration, and development
	· Lifelong learning – use of technology, use of research-based information

²⁶ Lerner, R.M., Lerner J.V. et al. (n.d.) The 4-H Study of Positive Youth Development – Comprehensive Findings from the 4-H Study of Positive Youth Development. Retrieved from National 4-H Council website: 4-H Positive Youth Development Research | Research | 4-H

effective and promising for scaling: 4-H Enterprise Gardens and 4-H Cooperatives.

4-H Enterprise Gardens and 4-H Ghana's model of success

4-H Ghana is the center of excellence for the 4-H Enterprise Garden model that is being replicated and scaled across SSA, reaching more than 100,000 youth in Ghana, Kenya, Tanzania, Liberia, and Ethiopia. In this approach, youth plan, plant and manage a food-producing, school-based or community-based garden, gaining practical, hands-on experience and providing income and food for their communities. 4-H organizations develop formal MOUs with local agriculture extension agents and local educators that serve as 4-H clubs leaders and advisors. Youth also develop a business plan to market their produce and make all the decisions about how profits are spent, investing in additional projects, and leadership elections. By strengthening their agricultural and entrepreneurial skills, 4-H Enterprise Gardens launch youth as agribusiness leaders in their communities.

In 2012, Ghana 4-H'ers increased income to USD 62,377 from the sale of crops, including vegetables and maize. Adults are also learning from the 4-H model. In 2014, Ghana's 4-H Enterprise Gardens yielded 25 maize cobs per row, compared to 10 cobs per row produced by local farmers. Young 4-H members have successfully trained 400 adult farmers on improved farming technologies, providing a community-led example of transfer of new technologies from youth to adults.

Evaluation of the 4-H Enterprise Garden model shows its impact on attitudes and perceptions of young people towards agriculture, before and after their 4-H experience in Enterprise Gardens:

- 80% of respondents want to pursue agriculture as a career;
- 80% of respondents want to pursue agriculture at the tertiary level; and
- 83% of respondents are interested in staying in school because of 4-H.

4-H Enterprise Gardens also produce tangible results including greater access to nutritious food and improved school attendance.

4-H Cooperatives and 4-H Ethiopia's model of partnership

– In late 2014, 4-H Ethiopia began piloting a 4-H Cooperatives model for young farmers (ages 18-30).

4-H Cooperatives are composed of young people who finished primary and/or secondary school but cannot find gainful employment. They apply to and are formed into cooperatives by the Bureau for Marketing and Cooperatives. The 4-H Cooperatives choose one of three government-driven strategic areas: dairy, fattening, and crops. Throughout the year, these 4-H clubs work closely with Ethiopian government agencies: the Bureau for Women Children and Youth (WCY), the Ministry of Agriculture, the Bureau for Marketing and Cooperatives, the Bureau for Finance and Economic Development, the Local Administrative Government, and Community Elders. All receive training on 4-H Positive Youth Development (PYD), agriculture and business planning.

In addition to the government partnership, parents of the 4-H members sign an agreement offering their support for their youth. Parents must follow up on cooperative activities, provide agricultural instruction to youth, and co-sign for the micro-finance loan.

Each cooperative then gets a license from the Marketing and Licensing Bureau to operate, and then attends three rounds of two-day trainings. Round 1 covers basic information on cooperatives and organizational management. Round 2 covers entrepreneurship and business plan development. Round 3 covers technical agricultural training.

Empowerment in agriculture: one 4-H member's story – The power of these two models – 4-H Enterprise Gardens and 4-H Cooperatives – is illustrated by the story of Dancan Odhiambo. Dancan, a brilliant but quiet boy, had been a member of the 4-K club (the 4-H name in Kenya) for three years when tragedy struck: He lost both parents to HIV/AIDS and had no other family. When 4-K club members decided to take him in, Dancan moved to the school and immersed himself in 4-K club life. Rising through the ranks to become the 4-K club treasurer, he rose to the top of his class. He helped to manage a school nutrition program run by the 4-K club through the 4-H Enterprise Garden Model, which provides a meal every day for 923 students at Nyaminia School. In addition, the 4-K club generates enough revenue to hire two adult supervisors for the dairy project, provide housing facilities for 50 orphans, and pay for the school's maintenance bills.

Now 17 and a leader at school and in the community, Dancan is attending high school and inspiring others to develop their agricultural skills to help their communities. This year, he and other 4-K club members trained more than 300 students in nutrition and effective agricultural practices.

FAO/ILO youth entrepreneurship training models²⁹

Youth employment has become a major concern in many countries around the world. As policymakers consider

²⁹ This section was developed with support and assistance from Peter Wobst – Decent Rural Employment Team Leader, FAO, Rome, who shared FAO-ILO Youth Employment Programs with the Author through many engagements on rural youth employment and capacity building

measures to help young people make the transition into the labor market and obtain decent work, they are hampered by a lack of information on what their options are and what works in different situations. The rising concern over youth unemployment led to enhanced engagement and effort of the international development community. To address such issues, FAO has introduced the Junior Farmer Field and Life School (JFFLS) approach. The approach was piloted in Mozambique in 2004 and since then has been implemented in Burundi, Cameroon, DRC, Ghana, Gaza & West Bank, Kenya, Malawi, Namibia, Nepal, Rwanda, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

The JFFLS approach – This approach entails a unique learning methodology and curriculum, which combine both agricultural and life skills. An innovative aspect of the JFFLS approach is the way youth are encouraged to develop as people. A school timetable includes cultural activities such as singing, dancing, and theatre. This allows the youth to develop confidence while keeping local cultural traditions alive.

Specifically trained extension workers, teachers and social animators use this participatory methodology to pass on agricultural knowledge and life skills to young boys and girls. For one entire school year, a multidisciplinary team of facilitators leads participatory sessions with a group of youth who range in age from 15 to 18. These sessions are given two to three times a week in the field and classroom after regular school hours. The one-year learning program

follows the crop cycle; links are established between agriculture, nutrition, and gender equality and life-skills knowledge so that young participants learn to grow healthy crops while making informed decisions for leading healthy lives. Participatory field activities include crop selection and cultivation, land preparation, pest management, cultivation of medicinal plants, and income generation. Local theatre, art, dance or songs are also integral aspects of each JFFLS day. The schools address a wide range of issues, such as gender sensitivity, child protection, psychosocial support, nutrition, health, hygiene, sanitation, education and business skills. Ad-hoc modules for child labor prevention and land and property rights can also be included in the curriculum of the JFFLS.

This innovative approach directly contributes to MDG 1 (eradicating extreme poverty and hunger), to MDG 3 (promoting gender equality and empowering women), and MDG 8 (develop a global partnership for development, Target 16, cooperation with developing countries to develop and implement strategies for decent and productive work for youth). Indirectly the program contributes to MDGs 2 and 4 (achieving universal education and reducing child mortality).

A further innovation in the approach was tested for the first time in 2008 in Gaza and West Bank, and comprised the grouping of the JFFLS graduates at the end of the cycle into local youth associations and then to form some youth farmers' cooperatives; in 2009 the same mechanism was also introduced in Mozambique.

The next generation in African business: the STRYDE youth entrepreneurship program³⁰

TechnoServe first identified a need for youth entrepreneurship programs in 2004, and launched a study in Kenya whose findings formed the foundation for the current East Africa program. This led to the Strengthening Rural Youth Development through Enterprise (STRYDE) program, implemented by TechnoServe in partnership with The MasterCard Foundation in Kenya, Rwanda and Uganda

The STRYDE program delivers a comprehensive package of services, including skills training, business development and mentoring to young people ages 18 to 30. The intervention helps young people develop livelihood strategies and harness existing opportunities in employment, agriculture and the informal sector. The program is working with rural youth to identify income-generating opportunities in their local communities, provide the knowledge and support to help them build their business (through jobs, enterprises, and agriculture), and work with the local communities to expand the positive impact that rural youth can have on the local economy. This empowers them to take decisions in agricultural development in their communities.

The main aim of STRYDE is to equip rural young women and men in East Africa with the skills and knowledge to capitalize on economic opportunities and increase their incomes. The overall program goal is to sustainably improve livelihoods for rural youth and their households and support rural youth transition to economic independence. The main labor market barriers/failures to be addressed by the Intervention include:

- Inadequate technical skills;
- Inadequate soft/life skills (empowered for leadership, public speaking and having youth voices in civic engagement);
- Lack of labor market information; and
- Lack of labor demand.

Participants in this program take part in a three-month training program to develop life, entrepreneurship and career skills, and they receive an additional nine months of mentorship and counseling from a youth trainer. The

³⁰ This model was sourced from Technoserve and the MasterCard Foundation

young people are exposed to three months of training that includes the transformative 'personal effectiveness' module, which helps them recognize their own talents and strengths. This is followed by personal finance, which combines financial literacy skills such as operating a bank account, and understanding the importance of savings and planning for the future. Other modules open up options for people to understand how to prepare to get a job, build their entrepreneurial skills, and gain exposure to farming as a commercial rather than subsistence activity. STRYDE helps young people to obtain job market information. With support from the communities, the program provides on-the-job training on agricultural techniques, such as greenhouse farming, rearing animals, and growing crops that are drought resistant to increase productivity.

Participants gain practical business exposure through this experiential business exercise. Young women and men also have the opportunity to participate in program-sponsored business plan competitions and local job fairs featuring community businesses. Following an intense 'Think Business' simulation exercise, a nine-month 'aftercare' phase helps the participating youth identify models to start their business, find a job, or return to the family farm to apply their new commercial skills.

Results and up scaling – The first STRYDE program began in August 2011 and has exceeded its target milestone of 15,000 youth trained. About 46% of those trained are female. After participating in this first program, young people increased their incomes by an average of 233%, with 70% now saving regularly – a sevenfold increase from before the training. The STRYDE program's experience and work approach have yielded lessons learned for youth enterprise development in methodological and technical considerations and personal linkages. These include:

- Focusing on capacity building, with a structure combining basic business knowledge with backstopping for young people through diverse strategies to link them with the world of work, this approach develops their undertaking of their life strategies based on local assets and development through economic and social engagement.
- Specific methodological instruments to generate business training for youth, empowering them socially, defining modules and workplace hours, for an instructional strategy including work experience

as workers or independently. The STRYDE program networks with strategic stakeholders in public and private settings, influencing the building of relational capital and networking to establish youth undertakings.

- A backstopping structure including technical advisory assistance by mentors, not only by strengthening productive aspects of undertakings, but also addressing the psychological aspects of personal development, responsibility, confidence and self-esteem with the mentor as a local referent.
- Team building with youth already trained who belong to the program. They help teach skills to conduct economic and social assessments, and generate strategies for personal relations by discussing with other youth in their mother tongue.
- Helping youth associate, generate companies and build their organizations, encouraging the division of roles and functions in companies' production and management.
- Engagement with financial services, building a culture with youth for investment/savings in their undertakings and facilitating access to loans from micro-finance institutions.
- Resource allocation mechanisms made available to young people participating in the STRYDE program to develop their undertakings.

On March 16, 2015, The MasterCard Foundation and TechnoServe announced a five-year USD 25.9 million partnership to generate and expand the project in East Africa to increase incomes and economic opportunities for 48,000 additional rural youth in the region.

The expanded STRYDE 2.0 initiative is building on the success of STRYDE 1.0 and will provide young people in Kenya, Rwanda, Tanzania and Uganda with the skills to start small businesses, secure formal jobs, or explore opportunities in agriculture. The new expanded program is noteworthy not only for its scope, but also for its partnerships with local institutions to ensure sustainability. William Warshauer, President and CEO of TechnoServe, has observed that, "With a strong track record of success, STRYDE 2.0 will help nurture the next generation of African business leaders, while strengthening local institutions to continue this important work."

UniBRAIN model for agribusiness incubation³¹

UniBRAIN is an initiative of the Africa Commission funded by the government of Denmark. The initiative is led by FARA, assisted by six partner

institutions: ANAFE, PanAAC, ABI-ICRISAT, ASARECA, CCARDESA and CORAF/WE CARD. UniBRAIN was established in 2010/11 as a

³¹ Mr. Dan Acquaye is an Agribusiness Consultant who did a review of the UniBrain Project of FARA and is currently supporting the sustainability strategy of the project. He is on the Board of AAIN, a private sector arm of FARA established to upscale and sustain the UniBRAIN model in Africa.

model to commercialize agribusiness innovations and technologies, provide graduates from tertiary education institutions with knowledge and skills to become successful agribusiness entrepreneurs, and share and scale up innovation experiences, practices and lessons. The initiative started with funding from DANIDA in 2010 and is being implemented by establishing six pilot Agribusiness Innovation Incubators³² Consortia (AIIC) in five African countries – Ghana (livestock value chain), Kenya (sorghum value chain), Mali (forestry value chain), Uganda (banana and coffee value chains), and Zambia (fruit value chain). With funding from the government of India, UniBRAIN is also in the process of setting up Food Processing Business Incubation Centers (FPBIC's) in Uganda, Cameroon, Ghana, Mali and Angola. The focus of the UniBRAIN project is to enable young people develop skills and to empower young people to develop their own agribusinesses.

The main objective of UniBRAIN is to create jobs and increase incomes through sustainable agribusiness development. UniBRAIN is achieving this by creating mutually beneficial partnerships between universities, research and the private agribusiness sector to create profitable agribusinesses while improving agribusiness education to produce readily employable graduate entrepreneurs. The UniBRAIN incubator has demonstrated its effectiveness in attracting youth and women into agribusiness. Currently, more than 60% of the beneficiaries of the six existing incubators (SMEs, start-ups and 'Incubatees') are below the age of 34, and 55% of the beneficiaries are women. More significantly, there are over 1,800 youth from tertiary institutions who have applied for enrollment into incubator programs.

Technology commercialization – UniBRAIN is now a proven model for African agribusiness development and youth empowerment in agribusiness. UniBRAIN has commercialized 75 technologies, including:

- Indigenous Micro-Organism (IMO) technology by CCLEAr for pig production, which has reduced feed costs for pig producers in Ghana by 30% and water usage by 50%, while enabling them to produce lean meat for supermarkets.
- A low-cost irrigation system for vegetable production by AgBIT, which is 40-50% cheaper than conventional drip irrigation technology. AgBIT is currently transferring intensive production technologies, including greenhouse production, to small-scale producers that will quadruple their yields from currently cultivated land.

- Commercialization and scaling out of planting materials of a disease-resistant coffee variety developed by its partner, Makerere University. Over 1,400 acres are now covered by this variety and more than 4,000 tons and USD 3.4 million is expected to be generated from commercialization. The CURAD coffee processing initiative also allows farmers to earn 30% more over local export prices.
- WAARI has introduced cereal processing technology for small-scale processors that enables them increase their processing capacity by 300%/day, reducing processing costs by 84% with improved product quality.
- Sorghum-based animal feed technology has been commercialized by SVCDC as a substitute for maize-based feed; it is 25% cheaper and provides an alternative market for farmers who hitherto did not have access to formal markets. The processors anticipate supplying 50 tons in the next three years valued at over USD 1 million.
- Innovative technology for processing banana juice and wine from ripe bananas, which hitherto farmers have virtually considered a waste product.

These technologies were developed and packaged by the incubator consortia members as well as the SRO. The incubators transferred these technologies to agribusiness SMEs who are early adopters and were trickled down to affect 'bottom of the pyramid' operators.

Job creation – UniBRAIN has supported 111 SMEs within the respective incubatee programme, incubated 138 start-up entrepreneurs who are producing, processing and marketing agricultural products to markets. Building on its mandate of job creation, UniBRAIN has created 10,031 jobs within the last two years of operationalization and has provided internship training for 1,500 students, exposing them to innovations, technologies and agribusiness opportunities in Africa as shown in Table 3.

These jobs were created with investments of about USD 600,000 per incubator in the six incubator centers. More than 540 private sector entities have currently been engaged in agribusiness value chains and over 23,000 farmers have also benefited from incubator technologies and mentorship.

³² Consortium for Creating Competitive Livestock Entrepreneurs in Agriculture (CCLEAr-Ghana); AfriBanana Limited Products Limited (ABP Ltd Uganda); Consortium for enhancing University Responsiveness to Agribusiness Development (CURAD-Uganda); Agribusiness Incubation Trust (AgBIT-Zambia); Sorghum Value Chain Development Consortium (SVCDC-Kenya); West Africa Agribusiness Resource Incubation (WAARI-Mali)

Table 6.3 Job creation under the UniBRAIN project

SOME ACHIEVEMENTS SINCE 2012				
JOB CREATION (CASE OF 6 INCUBATORS UNDER FARA UNIBRAIN)				
INCUBATOR	DIRECT JOBS	INDIRECT JOBS	FORMAL JOBS	TOTAL
CURAD (Coffee)	575	1 150	33	1,758
AgBIT (Hort)	555	960	22	1,537
ABP LTD (Banana)	736	1,472	45	2,253
SVCD (Sorghum)	750	1,500	32	2,282
CCLEAR (livestock)	275	550	15	845
WAARI (Forestry)	444	888	24	1,356
TOTALS	3,335	6,520	171	10,031

-600,000 USD PER INCUBATOR INVESTMENT FOR JOB CREATION
- 400 USD AVERAGE INVESTMENT TO CREATE ONE JOB

UNIQUENESS OF THE UNIBRAIN MODEL	
Technology commercialization for productivity	UniBRAIN model has demonstrated its effectiveness to serve as a vehicle for science and technology mobility, sharing benefits of discoveries and enhancing agribusiness productivity. Technologies developed by SRO and other research institutions which hitherto were shelved have been now been commercialized.
Model for providing vocational skills	Research conducted by NEPAD/GIZ shows that most agricultural vocational institutes are collapsing and vocational skills in agricultural value chains limiting therefore creating gap between industry skills needs and available skills. The UniBRAIN model provides hands-on training to Incubatees and interns, building the practical experience and capacities to fit into industry skills needs. The development of UniBRAIN technologies, such as IMO piggery production technology, AfriBanana juice and wine production technology, coffee processing technology, greenhouse production technology, and rice processing technologies, is all hands-on.
Mobilizing the private sector for value chain investments	The UniBRAIN model fills in a critical gap in the agricultural value chain – the 'Missing Middle'. By focusing on SMEs, it provides the opportunity to strengthen both forward and backward linkages within strategic agricultural commodity value chains. Currently more than 540 private sector firms have been mobilized to invest in agribusiness value chains activities.

Source: Acquaye, D. Feasibility Studies on Modeling Successful Agricultural Vocational Centres for Youth Training. 2013.

Conclusions and Recommendations

The need to focus on capacity building and youth empowerment in order for them to participate fully in agriculture is not just important – it is a fundamental necessity if today's youth are to be fully engaged in the agriculture sector. Agribusiness for youth should not be seen as a 'buzz word, like making agriculture sexy', but rather as a serious undertaking that will determine the futures of many young people in Africa. To achieve the full participation of youth in agriculture in the future, capacity building and youth empowerment must be emphasized now. The time to focus on the business aspects of the sector is now. And the time to teach young people to get their hands dirty and obtain the requisite skills to succeed in the competitive global economy is now.

From a continental perspective, coherent and robust agricultural policies, as well as relevant youth empowerment and capacity building programs, need to be put in place. Only in this way will young people be empowered to take decisions relating to agriculture as a legitimate field of study, inclusive of entrepreneurial skills acquisition and business enterprise training that will enable them to start their own businesses and to also compete more effectively in job markets. There is a need for national strategies to ensure that training and skills development initiatives respond to market needs. Formal education curricula should be revised to make sure it responds to present and future needs of the agriculture sector, and moves away from existing productivity training that does not incorporate value chain perspectives. For these national strategies and programs to be successful they should incorporate not only business skills, but also life skills and other individual capacity building elements to create well-rounded future leaders.

The barriers to accessing formal education, especially for rural African youth, need to be addressed, and informal training can bridge that gap. This can only be achieved with hands-on practical training accompanied by simple to read and understand training materials. The CAADP ATVET concepts and approaches discussed earlier offer good examples of how an emphasis on vocational and technical training, coupled with business and life skills and delivered through formal, informal, and non-formal modes could enhance the capacity of young people to engage in agriculture, especially in the rural areas of Africa.

The concept of incubation has been shown to be successful in the UNIBRAIN Project, where

practical hands-on training and mentorship prove more valuable than a formal qualification, especially with respect to the linkages between tertiary education training, research and the private sector. With the development of small-scale technologies, many youth have successfully integrated into the agricultural value chain. At the individual training delivery level, the Songhai Concept in Benin (which has been replicated in other West African countries) offers lessons to the continent on how an innovation center at the middle and lower level of training could be sustainably developed.

It is essential to ensure that continuous engagement with the private sector is established to ensure that where there are skills gaps, or a lack of quality products for processing along specified value chains, young people are trained and equipped to either become employees within established firms or self-employed to supply quality inputs required along the value chain.

In so doing, the approaches taken must be gender-sensitive and take into account the fact that the majority of rural youth are females, and their selected areas of participation along the value chain may differ to their male counterparts.

Youth play a key role in ensuring Africa's food security, and their engagement requires concerted effort at all levels, from national- down to community-level engagement. The change in mindset on how youth perceive agriculture can only be achieved through a positive image of the opportunities that exist if youth engage in agriculture, applying business principles, new innovations and developing individual skills sets.

To accomplish this, and to ensure young people have access to critical capacities for business growth and jobs, consider the following recommendations:

- A holistic approach to capacity building in agriculture should encompass environmental factors, including political frameworks, policies and strategies that align to national and regional development agendas, especially the National Agriculture Investment Program (NAIP) of the CAADP Process.
- Organizations and institutions responsible for training should review their curricula and training systems to better respond to private sector needs and changes in the job market.

- In addition to building the technical skills of young people and fostering their willingness to use those skills, when training young agripreneurs an emphasis should be given to strengthening such personal qualities as self-confidence, innovation and creativity; the ability to take initiative; a willingness to take calculated risks; and a desire to collaborate with others working in the agriculture sphere. They should learn to save, invest and grow, as these practices help them to select and shape their career paths.
- The skills required by those employed in the informal economy are as complex and wide-ranging as the activities and forms of employment found within it. Vocational education and training, as well as entrepreneurship, have a key role to play in improving conditions for informal training and those working in the informal economy.
- Targeted capacity building is required to ensure that the private sector skills gaps are addressed, and that youth empowerment initiatives address intangible but critically important factors, such as leadership abilities, personal development, and other life skills.
- To improve the productivity of youth in agriculture, both technical and business skills training (entrepreneurship and financial literacy) must be provided to enable the use of sustainable agricultural practices, improve access to finance, and generate higher incomes. Entrepreneurship should be embedded into the formal educational system and offered through partnerships with the private sector, along with informal training and rural apprentice training programs.
- The opportunities provided by the current market situation depend largely on the extent to which ICTs are available to young farmers, whether they can afford to use them, and whether they have the skills to do so. Integrating ICTs into agricultural programming and interventions can increase effectiveness, broaden impact and ensure retention of skills. ICT-enabled services are relevant and useful to improve the capacity and livelihoods of youth by creating networks for information exchange and support.
- Africa should focus on and invest in Technical and Vocational Education and Training (TVET). The TVET sector in Africa is fragmented, and technical and vocational training is not currently meeting the needs of the fast growing agriculture sector. There is low capacity in the system, inadequate and outdated training materials and equipment, and a lack of skilled and qualified educators in training institutions. Teachers and trainers lack practical, pedagogical and didactic skills, and lack the competences required to develop curricula. Africa needs to focus on this kind of education and develop systematic linkages between private and public efforts, and between TVET and agricultural universities and research. There is the need also to focus on addressing the perception that vocational training is an inferior option to academic studies.
- Comprehensive efforts will be needed to develop ATVET into a demand-driven system that combines education, training, knowledge development, and skill-enhancing techniques. Integrated TVET systems are needed that bring together public and private players and activities, including development of legislative frameworks that support National Qualification Frameworks (NQFs).
- There is need for further investment in rolling out successful models, such as the 4-H Model, which has continued to evolve with the agricultural development landscape. The holistic approach encompasses not only individuals but also the family and community aspects, allowing the community to benefit through innovative partnerships and improved household nutrition.

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Chapter 7

Establishing a Conducive Policy Environment for Youth Engagement in Agriculture

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KEY MESSAGES

ONE

Youth empowerment in the agriculture context should build on existing efforts, policies and practices. Most sub-Saharan Africa countries already have relevant agricultural development strategies/policies.

TWO

Existing policy incentive structures may need to be adjusted so they work for youth development and engagement in agriculture, not against it.

THREE

Promoting synergies between youth policies and broader development policies and frameworks, particularly in the context of the Post-2015 Development Agenda and means of implementation is crucial

FOUR

African countries need policy instruments aimed at changing perceptions of youth engagement in agriculture, to sensitize and institutionalize the concept, such as through higher education training.

FIVE

Institutionalize youth participation by providing opportunities and enabling environments for young people to participate at all levels of government, as well as at regional and international levels.

SIX

There is a need to promote harmonization between international, regional and national commitments to youth and to leverage these to promote youth development activities.

Background

In recent years, much attention has been given to youth development, with a specific focus on youth unemployment. Several reports (FANRPAN, 2012; AfDB, et al., 2012; Mo Ibrahim Foundation, 2012; UNECA, 2011) have looked at this issue at length. This renewed focus on youth stems from a desperate attempt to deal with a ticking time bomb of youth unemployment, rural development and the need for enhanced agriculture productivity.

The African Development Bank Group (AfDB) and the United Nations Population Division put Africa ahead of the rest of the world in terms of youth population; there is an estimated 364 million Africans between the ages of 15-35, and 200 million people aged 15-25. By 2045, the number of African youth is expected to double (AfDB, 2012). The continent's overwhelmingly young population, most of who are not gainfully engaged, presents both a transformative opportunity and a cause for concern for policymakers.

Youth unemployment is an enormous challenge that African leaders must address. If gainfully engaged in the development process, young people have the potential to contribute immensely to the GDP of a country. According to Gyimah-Brempong and Kimenyi (2013), African youth could provide needed production labor, which would improve the region's total productivity. Furthermore, if youth are gainfully employed, income inequality would be reduced and they could become reliable consumers of goods and services.

However, it is important to note that Africa's youth face a variety of social and economic challenges that prevent them from achieving their full potential, especially in the continent's poorest countries, and the majority of young people remain vulnerable and poor. According to the World Bank (2009), on average 72% of the youth in Africa live on less than USD 2.00/day; they lack the skills and resources to be competitive. The incidence of poverty among young people in Nigeria, Ethiopia, Uganda, Zambia and Burundi is over 80%, with the highest rates of poverty being observed among young men and women living in rural areas (World Bank, 2009). These trends are observed across many African countries. It is thus imperative that

policymakers identify opportunities to facilitate gainful engagement of youth so that they contribute to the economic development of their countries.

Most African countries have identified agriculture as the growth engine of the economy. Interestingly, in spite of the formal recognition of the role of agriculture in employment and wealth creation for young people, the nexus between youth and agriculture has been only partially (and insufficiently) developed and translated in public policies at the national, regional or continental level (FANRPAN, 2012). According to Lintelo (2012), youth are often excluded from the political and policymaking processes¹ that could enable them to escape poverty.

Further, young people are often perceived as passive clients of government services who have little capacity to shape their own destinies. However, according to UNDP (1981) it is the role of policymakers to create opportunities that enable all members of a community to actively engage. This includes building the capacity of stakeholders to actively contribute to and influence the outcomes of policy activities, and to benefit as much as possible from the results.

Therefore, establishing a policy environment conducive to youth engagement in agriculture calls for a paradigm shift among policymakers. The planning process needs to be made more accessible to youth and deprived rural communities. Further, African countries need to demonstrate commitment by strengthening structural and functional capacity to design youth-responsive policies and programs that raise the quality of life for young people, as well as transform rhetoric to action.

Given that the livelihood needs of youth are markedly different, they require very different 'packages' of policy interventions. The same is true for other distinct groups of rural disadvantaged youth, including the disabled, ex-combatants, and orphans. A clear separation also has to be made between school-aged youth and post-school youth. It has been argued that one of the main reasons why youth programming has attracted so little support from governments, NGOs and donor agencies, is that post-school youth are usually subsumed into the adult population as a whole (Bennell, 2007).

¹ Cloete, et.al (2011). "Policy initiation design analysis and formulation, policy implementation, institutional capacity building and governance and policy monitoring and evaluation." p.4

The Impact of the Policy Landscape on Youth

Continental policies

International policy and legal frameworks lay the foundation through which youth participation in policy development processes can take place at regional and continental levels. These frameworks contain provisions that specifically address youth issues related to agriculture, environment and natural resource management in Africa.

According to the 2011 State of African Youth Report, African governments and development partners have for a long time spearheaded policies, strategies and plans of action in the area of youth and development. The 2004 publication by the African Union's New Partnership for Africa's Development (NEPAD) and other partners, entitled *"The Young Face of NEPAD: Children and Young People in the New Partnership for Africa's Development"*, stresses the role that young people can play in the continent's development. The publication also outlines some of the critical strategies required to fast track the development of African children and youth.

In 2006, AU Member states gave direction for the African response to youth issues by adopting the "African Youth Charter", a comprehensive framework that addresses the rights and obligations of young people. This Charter not only provides a policy framework and practical guidelines for national action and international support to improve the situation of youth in Africa, but it also constitutes the first African blueprint for effective national youth policies. The Charter is meant to guide the development of national policies on youth by providing an overarching vision for programs and activities relating to youth in AU Member countries (AU, 2006).

The Charter recognizes that youth are partners, assets and a prerequisite for sustainable development and for the peace and prosperity of Africa with a unique contribution to make to present and future development. The Charter identifies a range of policy areas to be covered, which include: Sustainable Development and Protection of the Environment; Peace and Security; Health; Sustainable Livelihoods and Youth Employment; Poverty Eradication and Socio-economic Integration of Youth; Education and Skills Development; and Leisure, Recreation, Sportive and Cultural Activities (AU, 2006).

Member states are obliged to develop and implement comprehensive, integrated and cross-sectoral youth policies and programs with the active involvement of young people. Such policy and program development processes need to be underpinned by mainstreaming

youth perspectives into broader development goals and priorities, and investing in the meaningful participation and contribution of young people towards Africa's progress and current gains (AU, 2006).

Agriculture is addressed in the Charter under Article 14 (see Box): *"Poverty Eradication and Socio-economic Integration of Youth"*, which directs Member states to take individual or collective measures to train young people to take up agricultural production using contemporary systems and promote the benefits of modern information and communication technology to gain access to existing and new markets. It further directs Member states to facilitate access to credit to promote youth participation in agricultural and other sustainable livelihood projects (AU, 2006). Although the guidelines comprehensively address the critical challenges that inhibit youth from participating in agriculture, engaging youth in the policy process enables policymakers to customize policy choices.

In 2008, African Heads of State and Governments declared 2009-2018 as the decade of youth development and approved a plan of action, which is a road map for the implementation of the African Youth Charter. The "Decade Plan of Action" is responsive to youth empowerment and development in support of the AU's vision. It emphasizes policy development, coordination and management; program finance and implementation; advocating for the wellbeing of youth by having access to education, health facilities and employment; and promoting the cause of disadvantaged youth (AU, 2008).

According to Gyimah-Brempong and Kimenyi (2013), the adoption and entry into force of the African Youth Charter is a significant milestone as African countries are committing to developing and implementing comprehensive, integrated and cross-sectoral youth policies, with the active involvement of young people. The decade of youth presents an opportunity to advance the youth development agenda in all Member states across the AU, to ensure effective and more ambitious investments in youth development programs, and increase support to the development and implementation of national youth policies and programs (AU, 2008).

The launch of the youth decade has been followed by ongoing policy dialogue concerning youth and development at different levels. In 2011, the AU Summit was held under the theme "Accelerating Youth

Empowerment for Sustainable Development". The Summit was preceded by high-level consultations on youth development in which young civil society leaders and youth representatives contributed to the discussions and gave recommendations. These recommendations in turn informed key decisions of the 2011 AU summit, including the call to all AU Member states to advance the youth agenda and adopt policies and mechanisms towards the creation of safe, decent and competitive employment opportunities (FAO, 2015).

African Youth Charter and Agriculture

Endorsed In July 2006 at the AU Heads of States and Governments meeting in Banjul, Gambia, the African Youth Charter is both a political and legal document. The Charter serves as the strategic framework that gives direction for youth empowerment and development at continental, regional and national levels.

The Charter aims to strengthen, reinforce and consolidate efforts to empower young people through meaningful youth participation and equal partnership in driving Africa's development agenda.

Ratification

- 42 Member states have Signed the Charter
- 36 Member states have Ratified the Charter
- 3 Member states are yet to sign and ratify

Article 14: Poverty Eradication and Socio-economic Integration of Youth

State Parties shall:

1. Recognise the right of young people to a standard of living adequate for their holistic development.
2. Recognise the right of young people to be free from hunger and shall take individual or collective measures to:
 - a) Train young people to take up agricultural, mineral, commercial and industrial production using contemporary systems and promote the benefits of modern information and communication technology to gain access to existing and new markets;
 - b) Facilitate access to credit to promote youth participation in agricultural and other sustainable livelihood projects.

As is evident from this discussion, legal instruments exist for supporting youth engagement in agricultural development. However, commitment at the national government level is lacking. One of the challenges lies in the ability of the policymakers to appreciate youth potential in the development process.

The AU recognizes that addressing agricultural transformation must not be divorced from the context of the poor and unemployed youth who form a majority of the population in rural African countries. Young people must play a big role in achieving the transformation envisioned by the AU and reflected in the reasoning behind current and ongoing efforts in agricultural development. The Comprehensive Africa Agriculture Development Programme (CAADP) of the AU, led by NEPAD, requires countries to commit at least 10% of their national budgets to agriculture in order to raise annual agricultural growth to at least 6%. Essentially, CAADP is Africa's policy framework for agricultural transformation, wealth creation, food security and nutrition, and economic growth and prosperity for all (NEPAD, 2003).

Since 2003, 40 countries have signed CAADP compacts, 28 of which have developed formal national agriculture and food security investment plans – and these have become their medium-term expenditure frameworks for agriculture. However, despite the commitment by Member states to implement CAADP in consultation with civil society organizations and other key stakeholders – including youth associations at national and regional levels – only a few countries (for example, Nigeria and Ghana) have integrated youth-specific programs in national agriculture and food security investment plans (AU, 2003). The seventh CAADP Partnership Platform (PP) highlighted the inconsistent participation of non-state actors in CAADP and called for the inclusion of non-state actors, and marginalized groups such as women farmers and youth at national, regional and continental levels (NEPAD, 2011).

On average, public agricultural expenditures have risen by over 7% per year across Africa (AU, 2015) and eight countries have met and/or surpassed the Maputo target of allocating at least 10% of their budgets to agriculture. This is a reflection of African countries' renewed interest in the role of the sector in national development. It is envisaged that once the nexus between youth and agriculture is enhanced and translated into public policies, the sector's contribution to national development can be exponential.

A recent AU initiative to engage youth in the CAADP process is an important step. In 2012, for the first time, African youth organizations were invited to participate in the eighth CAADP PP meeting. The Food, Agriculture, Natural Resources and Policy Analysis (FANRPAN), speaking on behalf of Africa's youth at the meeting,

emphasized the need to integrate youth into the development of African agriculture and to institutionalize meaningful youth involvement in agricultural policymaking and consider the varying needs of young men and women and the different demands they face (FANRPAN, 2012).

Since then the dialogue on youth engagement in CAADP has continued and has culminated in the launch of a specific youth program under the NEPAD Planning

Regional policies

Regional bodies, including the Common Market for East and Southern Africa (COMESA), the Southern Africa Development Community (SADC), the Economic Community of West African States (ECOWAS), and the East African Community (EAC) are also increasingly aiming at steering domestic youth policy agendas. In this regard, they have instituted policy frameworks and action plans to address issues related to youth in agriculture.

In East Africa, the EAC youth policy prescribes strategic priority areas and actions to guide the implementation of programs that address youth challenges. It articulates the need for harmonizing definitions of the youth population, related legislation, and programs carried out across the region. Agriculture, though not explicitly mentioned, is covered under priority area 1 on sustainable livelihoods and youth empowerment, priority area 6 on sustainable development and promotion of the environment, and priority area 12 on poverty eradication and social-economic integration (EAC, 2014).

The EAC Agriculture and Rural Development Policy (EAC-ARDP) also guides the development of strategies, programs and projects aimed at regional food security in the EAC. The policy is aligned to the continental CAADP framework and the principles focusing on CAADP Pillar 3 on Food Security. In terms of youth coverage, the policy calls for increased access to credit for rural communities, including women and youth associations, through the provision of microfinance services and the promotion of women and youth entrepreneurs in the food supply chain. Despite this call, however, there is no evidence of regionally coordinated youth programs being implemented by the regional body (EAC, 2014).

In comparison, West African countries have formulated an overall ECOWAS youth policy whose objectives include mobilizing youth to contribute effectively to economic, social and cultural development and integration of the region (ECOWAS, 2009). In 2012, the regional body went a step further and developed statutes and operational guidelines for an ECOWAS Youth Empowerment and Development Fund (YEDF). Furthermore, the ECOWAS Youth Employment Action Plan (YEAP), which was developed in the same year,

and Coordinating Agency (NPCA). In March 2015, at the 11th CAADP Platform, NEPAD in partnership with FAO launched a 4-year project that aims to create decent employment opportunities for young women and men in rural areas. It will do so through the development of rural enterprises in sustainable agriculture and agribusinesses along strategic value chains (NEPAD, 2015). Such youth-specific regional policy guidelines need to consider building capacity at national levels for implementation and reporting.

defines strategies for increasing youth access to decent jobs in the region. The ECOWAS Agricultural Policy (ECOWAP), which is the instrument for the coordination of CAADP within the West Africa region, posits “a modern and sustainable agriculture, based on the effectiveness and efficiency of family farms and the promotion of agricultural enterprises through the involvement of the private sector”. The challenge is that the ECOWAS youth policy does not explicitly identify agriculture as a driver of its policy objectives, while ECOWAP does not identify avenues by which young people can be attracted to engage in the agricultural sector (ECOWAS, 2009). The risk is that, with agriculture currently seen by youth as unattractive, policymakers may ignore the immense potential the sector holds for increasing youth employment.

On the other hand, in Southern Africa SADC has put in place a Strategy and Business Plan on Youth Empowerment and Participation for Sustainable Development, which covers the period 2014-2019. The key priorities of the strategy include: a) strengthening regional coordination aimed at accelerating youth participation in socio-economic and political matters; b) ensuring that the youth take part in policy and decision making processes of government and of SADC; and c) enhancing wealth creation, livelihoods, employment and entrepreneurship opportunities for youth.

In terms of agriculture, the Regional Agricultural Policy (RAP) – a framework for harmonizing policies, objectives, strategies, and programs related to agriculture in Southern Africa – has youth empowerment in agriculture as a crosscutting issue (SADC, 2014). The policy calls for the involvement and consideration of youth in the formulation of agricultural policies. To this end, SADC stakeholder forums have engaged youth as strategic partners in policy processes. One such forum is the SADC Food and Nutrition Security (FNS) Strategy Stakeholders Forum, held in Malawi in April 2014 under the theme “*Empowering Youth and Women for Food and Nutrition Security*”. Young people were invited to provide inputs into the Conceptual Framework of the SADC Food and Nutrition Security Strategy during this Forum (SADC, 2014).

National youth policies and youth integration in agricultural policies

At the national level, there is full recognition of the dire challenges youth face and the great opportunities they present within the agriculture sector. Most African countries are making efforts to involve young people in political and decision-making processes. They have made significant progress in developing youth policies, as embodied in the African Youth Charter and in agriculture-related policies that take into consideration the potential contributions of youth to the sector (Gyimah-Brempong and Kimenyi, 2013). However, for most countries, the challenge has been the integration and application of youth in agricultural sector policies.

Ghana – The theme of Ghana's National Youth Policy is "Towards an empowered youth, impacting positively on national development". One of the policy's priorities is promoting youth participation in modern agriculture. The policy recognizes the need to develop more strategic interventions and approaches to attract youth to the agriculture sector. Therefore, the policy aims to promote the participation of youth in modern agriculture as a viable career opportunity and to provide the resources needed to accomplish that aim (Government of Ghana, 2010).

The country's youth policy is complemented by an implementation plan designed to put into practice the many programs, activities and interventions required to achieve the goals of the policy. Both the policy and its implementation plan are grounded on national and international youth development frameworks and practices. These include: the World Program of Action for Youth to the Year 2000 and Beyond; the Commonwealth Plan of Action for Youth Empowerment; the African Youth Charter; and the ECOWAS Youth Policy and Action Plan. The systematic approach to youth development, from the regional to national levels, is commendable.

Furthermore, the policy document outlines actions aimed at increasing and sustaining youth involvement in modern agriculture as a commercial venture. Assisting youth in the formation of farmer organizations, facilitating access to credit by farmer youth groups, advocating for the creation of land banks for youth in agribusiness, and facilitating access to markets for farmer organizations are some of the initiatives that are outlined. Ghana's Ministry of Food and Agriculture (MoFA) is a major partner in implementing the national youth policy, which emphasizes youth integration into the agriculture sector. One of the Ministry's key programs is the Youth in Agriculture Program (YIAP), the objective of which is to motivate youth to accept and appreciate farming and food production as a commercial venture.

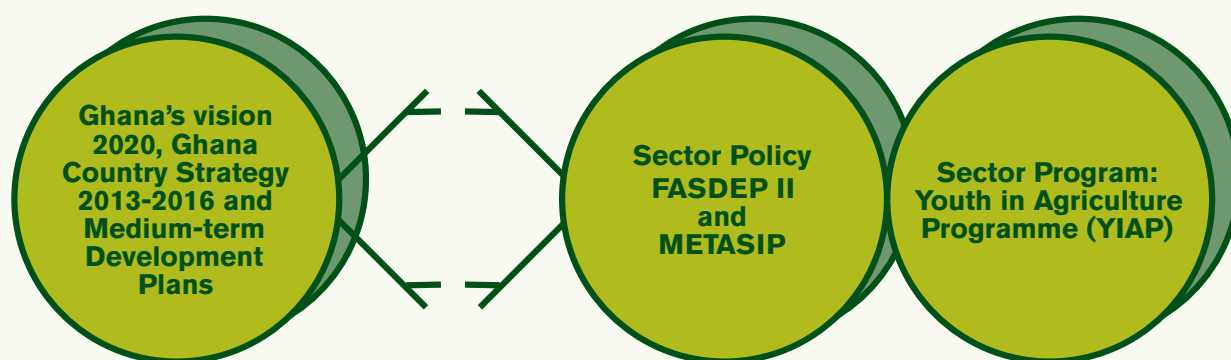
There is evidence that this program is producing excellent results. Since its launch in 1999, YIAP has created employment in the agriculture sector for more than 150,000 youths (47,000 in 2009, 81,000 in 2011, and 45,000 in 2012). The program provides young people with tractors, seed, fertilizer, agrochemicals, and harvester and marketing services on credit that is interest free. Furthermore, participating youth are given training and basic equipment to venture into food processing, value addition, and sales (Mahama, 2012). To ensure that youth are integrated into agriculture sector policy documents, the Ministry's policy and strategy frameworks – such as the Food and Agriculture Sector Development Policy (FASDEP II), the Medium Term Agriculture Sector Investment Plan (METASIP) (2011-2015) – are consistent with ECOWAP/CAADP by explicitly recognizing youth as important stakeholders in agricultural planning processes. These policies call for inclusivity whereby all agricultural value chain operators, including youth, are provided with services. Ghana is a good example of how youth-specific policies and programs can be effectively integrated in national development and sector plans, as shown in Figure 7.1.

Nigeria – The overall goal of Nigeria's National Youth Policy is to provide an appropriate framework that promotes fundamental human rights and protects the health, social, economic, and political wellbeing of all young men and women in order to enhance their participation in the overall development process and improve their quality of life. The policy has agriculture as one of the key priority areas and it aims to promote the involvement and full participation of young men and women in the agriculture sector (Government of Nigeria, 2009). In addition, the policy's specific identification of agricultural opportunities provides policymakers with clear direction for youth engagement.

It is not surprising therefore that the government at all levels, as well as other stakeholders, are called upon to provide the agricultural services and inputs needed to facilitate youth involvement in agriculture (extension services, land, credit and so on). Nigeria's National Youth Policy recognizes that the country's youth need skills to effectively participate in agriculture. It encourages the teaching of agricultural science at all levels of the educational system in the country, and the dissemination of knowledge on agricultural techniques and processes (Government of Nigeria, 2009). It is expected, therefore, that the country's policies on education will respond to the training needs identified in the National Youth Policy.

Like Ghana's policy, Nigeria's National Youth Policy recognizes the broader policy context in which it has been formulated and will operate. The policy context is

Figure 7.1 Youth integration approach in Ghana



Source: Grace 2015

guided largely by other national policy initiatives, and it also reflects international programs and conventions, such as: the National Gender Policy; the National Economic Empowerment Development Strategy (NEEDS 1&2); the Millennium Development Goals (MDGs); the ECOWAS Commission Youth Policy; and the African Youth Charter.

Apart from its youth policy, the Nigerian government also has the Agricultural Transformation Agenda (ATASP-Phase1, 2015), which has special packages for youths living in rural areas with little or no access to job opportunities. Under the ATASP-1, a Memorandum of Understanding was signed between the Ministry and the International Institute for Tropical Agriculture (IITA) to develop outreach plans for building the capacity of youth across agricultural value chains (such as cassava, rice and sorghum). Further, three Youth Training Centers will be established by IITA at Mijimbir, Kubwa and Onne (IITA, 2015).

Another Nigerian program that targets youth is the Youth Employment in Agriculture Program (YEAP), which was launched in December 2014. This program is complemented by the Youth Initiative for Sustainable Agriculture (YISA) and is designed to create a new generation of 750,000 young commercial farmers and agribusiness leaders (dubbed 'Nagropreneurs'). YISA has embarked on workshops aimed at educating Nigerian youths about agriculture, one that is 'pure business' and plays a critical role in national food security. The initiative does not merely encourage youth to take up agriculture as a business, but also creates a

platform for active participation for youth through the Youth Collaborative Community Agriculture Program (Ajani, et.al., 2015). Nigeria understands the need for building the capacity of youth to effectively participate in policy processes and enhance the quality of policy outcomes.

Tanzania – The government of Tanzania, in collaboration with other stakeholders, is committed to providing a policy environment that is conducive to effective youth participation in agriculture. Tanzania's National Youth Development Policy of 2007 recognizes that, despite the fact that many youth are engaged in the agriculture, fishing, mining, and animal husbandry sectors, they face several challenges that are unique to youth. The overall objective of the policy is to empower, facilitate and guide youth and other stakeholders in the implementation of youth development issues. The policy recognizes that youth development activities touch almost all sectors of development. It therefore requires that all relevant government agencies incorporate youth issues into their sectoral policies, program and projects to ensure successful implementation (Government of Tanzania, 2007).

Systematic Integration of Tanzanian youth into agriculture is also reflected in the country's Rural Development Strategy and its Agricultural Sector Development Strategy (ASDS). The ASDS recognizes the central role of youth in providing a strong and active labor force. It therefore proposes to focus on incorporating agriculture subjects in the primary and secondary educational curricula in order to build youth

skills that will improve the quality of the agriculture labor force. In addition, the ASDS aims to facilitate private sector involvement in developing rural-based agro-industries in order to address the issue of rural-urban migration.

The 'Kilimo Kwanza' strategy (interpreted to mean Agriculture First) is Tanzania's principal agriculture stratagem. It proposes the introduction of agricultural loans, provision of land to agricultural graduates, and development of incentives to attract and retain youth in agriculture. However, while this program has received enormous political support, many youth remain unaware of it, as no efforts have been made to sensitize and to involve them directly (FANRPAN, 2011).

In February 2013, Tanzania's National Parliament adopted a resolution to start a new government program called 'The Youth Fund'. This program is meant to provide loans to youth under 35 who are interested in starting agricultural businesses. Under this legislation, close to USD 24 million is to be earmarked annually from the national budget for the project. The Youth Fund is part of the government's plan to invest a growing share of its budget in agriculture. Another initiative meant to encourage broader commitment to agribusiness development is the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) (FAO, 2014).

The Agricultural Marketing Policy (AMP) of Tanzania has an overall objective to facilitate strategic marketing of agricultural products in ways that ensure fair returns to all stakeholders, based on a competitive, efficient and equitable marketing system. AMP guides the operations of the country's agricultural marketing systems; ensures coherence, profitability and sustainability of activities by various market participants; and promotes efficient marketing of agricultural products in the domestic, regional and international markets (The United Republic of Tanzania, 2008).

AMP recognizes that youth are involved in the entire marketing chain, as rural assemblers and regional wholesalers (sellers), central market brokers and regional wholesalers (buyers), and as retailers. It provides for the development of special programs for women and youth empowerment, participation of the youth in cooperative societies, associations and groups and, agricultural marketing related projects/ programs for both. However, there is so far no evidence of well-coordinated youth-specific policy interventions to enhance market access for the youth. In summary, the political goodwill and legislations exists, but unlike Ghana and Nigeria, institutional capacity for policy implementation is lacking.

Kenya – Employment creation is emphasized in Kenya's National Youth Policy; it explicitly recognizes the need

The Youth Enterprise Development Fund (YEDF) was established on December 8, 2006, through Legal Notice No. 167. It was transformed into a State Corporation on May 11, 2007, through Legal Notice No. 63. The Fund focuses on enterprise development as a key strategy for increasing economic opportunities for youth as a way of enabling them to participate in nation building. YEDF focuses on multiple areas: it provides capital to young entrepreneurs; avails business development services; facilitates linkages in supply chains; and creates market opportunities for goods and services produced by youth enterprises.

The Fund collaborates with 32 financial intermediaries (FIs) that fund individual or youth groups and the Constituency Youth Enterprise Scheme (C-YES), which specifically funds groups in the constituencies. The funds disbursed are to be repaid to the lending institutions/constituency and then accessed by other youth enterprises.

An estimated KES 5.96 billion has been disbursed to 315,076 groups and individual enterprises all over the country. Of this amount, KES 614.8 million has been advanced to 13,341 group projects, while KES 66.1 million has been disbursed to 2,645 individual enterprises at the constituency level. Through FIs, the Fund has provided KES 5.3 billion to finance 141,552 group and individual enterprises.

Source: (Muthee, 2010)

to create an environment that will enable youth to pursue self-help initiatives for self-employment. The policy calls for such government interventions as the establishment of agricultural production and cottage industries in rural areas to promote informal sector employment.

The Agricultural Sector Development Strategy 2010-2020 (ASDS) is the overarching national policy framework for the ministries and other stakeholders involved in Kenya's agriculture sector. This policy framework is anchored in the long-term development plan for Kenya, 'Vision 2030', the main thrust of which is to transform Kenya into a middle-income country by 2030. Vision 2030 is committed to involving youth in the agriculture sector by making it more attractive to them. In an effort to live up to this commitment, the Government in 2012 launched a 'Farming is Cool' campaign, which highlighted the possible monetary returns in farming that can accrue to youth. To address working capital challenges, the government has committed over USD 2 million in loans to youth groups to buy irrigation kits, greenhouses, water tanks, seeds, and fertilizers through the Youth Enterprise Development Fund (YEDF) (Ouma, Osano and Mullumba, 2002; Mburu, 2010; Amenya, 2011).

Another initiative that targets youth unemployment is the 'Kazi kwa Vijana' ('work to the Youth') initiative. Apart from the YEDF and the KKV, the Constituency Development Fund (CDF), which is largely decentralized and used for local development projects, provides resources to youth who are, or want to be, meaningfully engaged in development efforts, including in agriculture.

Ethiopia – There are a number of rural and agricultural development policies and strategies that seek to create an enabling environment for young Ethiopians who want to engage in agriculture. The country's National Youth Policy, under its youth and economic development priority, promises to create favorable conditions for rural youth to acquire farming plots and grazing lands in order to increase their productivity. Ethiopia's development policy emphasizes the central role of the agricultural sector and the need to cultivate a new generation of young, literate, and capable farmers who can embrace new technologies and methods in order to transform the sector.

The agriculture sector in Ethiopia is driven by the country's Agriculture Development Led Industrialization (ADLI) strategy, which states that accelerating agricultural growth in Ethiopia has wide-ranging impacts beyond smallholder farmers and rural development. According to the strategy, increased agricultural productivity and commercialization – and in particular the increase in related upstream and downstream economic activities – can also provide employment opportunities for Ethiopia's youth (ATA, 2014). In this context, the government established the National Framework for Agricultural Commercialization Clusters (ACCs) to improve land productivity and value-addition for specific commodities in specific geographical areas, and to augment private sector participation and employment creation for youth.

Federal and regional stakeholders, among them the youth, are currently identifying priority value chains and clusters through a data-driven and evidence-based process, while specific strategies and interventions that will be applied in the ACCs are being developed and agreed upon (ATA, 2014). It is important to note is that, unlike Ghana, Nigeria and Kenya, Ethiopia's National Youth Policy lacks youth-specific programs aligned with the agriculture sector policy document.

Zambia – The government of Zambia has put in place a number of policies and strategies aimed at promoting youth-centered development. These include: the crosscutting Employment and Labor Market Policy; the Micro-, Small- and Medium-Enterprises Development Policy; various agricultural policies; and the National Youth Policy. The latter provides a legal framework for youth participation in the economic, social, and civic life within Zambia. Spearheaded by the Ministry of Sport, Youth, and Child Development (MSYCD), the policy is ambitious and aims to reach young people throughout

Zambia. Unfortunately, the declaration is not backed by resource allocations and institutional capacity building. Implementation has therefore been severely constrained by a lack of funding and human resources at the Ministry level.

Other national policies, such as Zambia's Vision 2030 and the Sixth National Development Plan (SNDP), do little to incorporate youth into the country's wider development strategies (USAID, 2014). For example, the National Agriculture Policy of Zambia – which aims at promoting gender equity in resource allocation and access to agricultural services, with a particular focus on youth who have been marginalized by past policies – is not backed by real programs and budget allocations. The document proposes to refocus policies to integrate the youth in agricultural research, extension services, credit access, and land tenure services (Republic of Zambia, 2004). Just like in the case of Tanzania, the declarations are about as far as the policy paper goes. No program institutions are set up to actualize the policy declarations.

South Africa – There are more than five distinct policies that specifically focus on youth development in South Africa. These include the policy on Youth in Agriculture and Rural Development (YARD, 2008), and the Department of Land Affairs Youth Empowerment Strategy of 2008. The National Youth Development Agency Act of 2008 advocates for an integrated youth development approach across all sectors. The country's National Youth Policy (2009-2014) provides for an integrated youth development trajectory, and the Integrated Youth Development Strategy (IYDS, 2011) is a broad and renewable mandate for ensuring that all sectors of society prioritize youth development in their service delivery models. This includes the agriculture sector and its various value chains.

In terms of youth involvement in agriculture, the key guiding policy in South Africa is the Agriculture Youth Development Initiative, which aims to "facilitate the development of programs that will capture the interest and commitment of South African youth, particularly young Black people, to agriculture and agriculture-related opportunities that exist in the sector". The Initiative further seeks to develop support structures and incentives for youth where possible (FANRPAN 2012). South Africa understands that engaging youth enables policymakers to capture their interests and develop responsive policies that provide an environment conducive to engaging youth.

There is evidence that some of these policies are beginning to deliver on the ground. For example, as part of the Department of Land Affairs Youth Empowerment Strategy of 2008, a youth skills development and employment program called the 'National Rural Youth Service Corps' (Narysec) was established. The Department of Rural Development and Land Reform

(DRDLR) has collaborated with the Agricultural Research Council to train 900 agri-professionals in smallholder livestock and dairy production, and 750 more in vegetable gardening and soil sampling. The Department has invested over ZAR 631 million in programs to train and deploy rural youth. Furthermore, in 2014 the Agriculture, Forestry and Fisheries Minister, H.E. Senzeni Zokwana, announced the government would be working to strengthen the country's agricultural training institutions over the next five years in order to attract more young South Africans into the sector (Government of South Africa, 2014).

Unfortunately, such reform documents as the Agreement on Agriculture Report (2006), which recommends special and differential treatment clauses to encourage the marginalized to participate actively in agriculture, have not ensured that youth groups are also beneficiaries of the differential treatment. The assumption made in the Report is that the youth also represent marginalized blacks. Although this is true, empirical evidence shows that youth are further marginalized because they lack resources and a voice to articulate their needs in platforms where policy issues are discussed. By generalizing about youth in affirmative actions, it is possible to either under-represent or misrepresent them.

According to the "State of Youth Policy 2014", produced by the Youth Policy Press, despite advances and commitments by most countries, a number of challenges affect the efficiency and inclusiveness of National Policies on Youth, including funding, as well as legal and institutional frameworks. First, one can find numerous examples of countries where Youth Ministries that manage the national policies on youth have limited political power and resources. At the same time, sectoral Ministries tend to act independently on issues that affect youth, without mainstreaming youth concerns in their interventions so that they are in line with national policies on youth (Youth Policy Press, 2014).

In some cases, this is further exacerbated by significant institutional gaps between the legislative branch and the

Youth participation in practice

At an operational level, participation is about:

- Information sharing: Young people are informed in order to facilitate collective and individual action;
- Consultation: Young people are consulted and interact with an organisation, which can take account of their feedback;
- Decision-making: Young people have this role, which may be theirs or joint with others, on specific issues of a policy or project; and
- Initiating action: Young people are proactive and able to take the initiative.

Source: Adapted from World Bank, 2007

executive branch. This fragmentation is causally related to the lack of broad macroeconomic policies affecting youth being integrated into national development plans, to gaps in identifying the costs of programs and sources of funding, and the lack of government capacity to undertake comprehensive monitoring and evaluation (Youth Policy Press, 2014).

The new policy and development interest that has coalesced around young people, agricultural production, and work in rural Africa is clearly to be welcomed. However, developing and effectively implementing inclusive policies for youth are not simple tasks. They entail cycles of actions that must be approached holistically, from national planning to the development of sector-specific plans. Such policies require wide consultations, effective and sustainable coordination among Ministries, as well as the integration of national policies on youth into national development plans (Youth Policy Press, 2014).

Institutional Mechanisms to Enhance Youth Participation in Policy Processes

Without a doubt, significant progress has been made towards formulating national youth policies and including youth in the development of agriculture sector policies. However, challenges remain with mainstreaming youth participation in the national policy formulation and allocating adequate funding for the implementation of youth programs (UNFPA, 2010). In

2012, the United Nations Inter-Agency Network on Youth Development, through a survey of the 13,000 respondents representing 186 countries from all regions around the world, found that young people have limited opportunities for effective participation in decision-making processes. In sub-Saharan Africa, a stunning 80% of the respondents pointed to limited

opportunities for participation in decision-making and limited structures for young people's participation in their communities (UN, 2012).

Article 11 of the African Youth Charter commits countries to take measures to guarantee youth participation in parliament and other decision-making bodies, ensure gender equality in participation, and to grant a right to participate actively in the design, implementation and evaluation of development strategies and policies (AU, 2006). To this end, a number of African countries have established institutions and mechanisms to oversee and fund initiatives concerned with the engagement of youth in policy decisions and programs.

According to FANRPAN (2012) and Lintelo (2012), most African countries have institutions and mechanisms for overseeing their engagement with youth and for funding their related initiatives. For example, they may have ministries responsible for youth affairs and sports, National Youth Councils and Youth Enterprise Development Funds. These act as institutions and mechanisms through which young people can be engaged in policy processes and through which such initiatives can be funded. However, most of them have only recently been created and have not yet either realized their potential or led to meaningful impact on the ground. Ministries of Youth are generally very poorly resourced and are usually subsumed (or combined) with other government responsibilities, most commonly culture, sports and education (Burnell, 2007).

Furthermore, youth boards, associations, networks, NGOs and other forms operate across sub-Saharan Africa. Modest efforts by such organizations as the FANRPAN, Young Professionals for Agricultural Development (YPARD), Youth Alliance for Leadership and Development in Africa (YALDA), African Youth Initiative Network (AYINET) and Climate Smart Agriculture Youth Network (CSAYN), comprise efforts to reclaim the space for youth participation in policy processes.

In 2011, FANRPAN, in partnership with CTA and USAID, embarked on a campaign advocating for greater engagement of youth in agriculture policy processes and providing them with a platform to voice their concerns. The campaign entailed commissioning country case studies on current and emerging youth policies and initiatives, with a special focus on agriculture, and convening national youth policy dialogues to validate the case study findings and to consider concrete ways for engaging youth in agricultural policy development and implementation. Highlights from these case studies follow below.

“NORMALLY WHEN WE NEED TO KNOW ABOUT SOMETHING WE GO TO THE EXPERTS, BUT WE TEND TO FORGET THAT, WHEN WE WANT TO KNOW ABOUT YOUTH AND WHAT THEY FEEL AND WHAT THEY WANT, WE SHOULD TALK TO THEM.”
KOFI ANNAN, FORMER UN SECRETARY-GENERAL

In South Africa, the National Youth Development Agency (NYDA) is the government agency responsible for youth. The NYDA is accountable for mainstreaming youth development efforts in all governmental spheres at the policy level, including within the agriculture sector. The country also has a South African Youth Council (SAYC), which was founded in 1997 as an autonomous, non-partisan umbrella association for youth organizations. SAYC represents youth interests in various forums, including the National Economic Development and Labour Council (NEDLAC), the South African National AIDS Council (SANAC), and the National Skills Authority (NSA).

The national youth institutional setup is less clear in other countries, such as Kenya. The 2007-2012 national strategic plan mandated

the Department of Youth Development to advance youth policies and programs, yet in April 2013 the Department was disbanded. The 2014 budget policy statement listed 'Youth Development and Empowerment Services' under the Ministry of Devolution and Planning, which sits under the Office of the President, but it is unclear if this ministry has taken over the duties of the now-defunct Ministry of Youth Affairs.

The National Youth Council of Kenya (NYC-Kenya) was established by the National Youth Council Act (2009) in response to the election violence of 2008. The Act mandates that the NYC-Kenya is to coordinate youth activities and organizations and support the development of national youth policies. According to the Council's official Facebook page, legal challenges initially prevented its establishment, but with those challenges behind them, the first election of Council officers took place in 2012. However, it also notes that there is no operational budget. Still, NYC-Kenya is listed as a member of the Commonwealth Youth Council.

In Ghana, the National Youth Authority (NYA) is an agency within the Ministry of Youth and Sports and is responsible for coordinating and facilitating youth development activities in the country. Established in 1974, the NYA's mandate is to "ensure the empowerment of the Ghanaian youth". The agency's 2014 annual work plan lists key activities and projects that are to be undertaken, such as building a new database of youth groups, training youth workers on prevention of substance abuse, and organizing a Presidential Youth Dialogue.

According to the 2014 estimates for the budget of the Ministry of Youth and Sports, "Youth Services" will be allocated GHS 10.2 million (USD 3.7 million). Apart from the NYC, it is unclear what youth representation structures exist at the national level. According to a 2012 profile on youth and civic participation, youth and

student groups were organized under the Federation of Youth Associations in Ghana (FEDYAG). However, the group has no online presence, and there is no indication that it is still in operation. Ghana is a member of the Commonwealth Youth Council, however, its membership is not through a youth representation structure, but rather the National Youth Authority (NYA), a government agency within the Ministry of Youth and Sports.

The Federal Ministry of Youth Development in Nigeria is responsible for youth affairs; its vision is “to empower Nigerian youth to become self-reliant and socially responsible.” It was established in 2007 and has departments focusing on enterprise development, vocational skills and training, youth voice, employment, and education. The ministry is responsible for the national youth policy, youth development programs, funding youth activities, youth participation, and managing both the National Youth Services Corps and the Citizenship and Leadership Training Centre. According to the 2014 budget, the Federal Ministry of Youth Development was allocated USD 503.5 million).

The National Youth Council of Nigeria (NYCN) is an umbrella organization for youth in Nigeria. However, its official Facebook page has not been updated since 2011, and the NYCN is not listed as a member of the Commonwealth Youth Council. According to an article on 31 May 2013, allegations of ministerial interference were made at the last election of officers, with an article on 7 September 2013 noting the dispute was split along political party lines. An article on 8 January 2014 notes that a Federal High Court then “nullified the election of the officers.”

In Zambia, it is unclear whether there is a ministry responsible for youth development. However, in 1994 the National Youth Development Council (NYDC) Act created the NYDC to: advise the Minister on youth development programs; coordinate youth activities; assist and encourage youth development organizations and programs; evaluate and implement youth programs; initiate, operate and manage youth development projects; and register and monitor youth organizations in Zambia.

The Ministry of Youth, Sports and Culture (MYSC) in Ethiopia was established in 2001. Its vision is “the creation of youth with rounded personality, transforming Ethiopia from backwardness and poverty into prosperity and democratic society.” The MYSC’s mission is to

create youth that are mentally and physically developed, know and respect the cultural values of their people, and are proud of their country. It aims to encourage youth to be creative, industrious, internationally competent, and empowered to participate in the development and democratization of Ethiopia.

According to the Federal Government Budget Proclamation, the budget for the Ministry of Youth, Sports and Culture in 2006 was ETB 26.2 million (USD 1.4 million). However, it is unknown what proportion of this spending was allocated to youth affairs. Further spending was allocated to Women and Youth Issues Mainstreaming [ETB 2.4 million (USD 124,000)], Women and Youth Issues Awareness and Mobilization [(ETB 4.1 million (USD 214,000))] and the Ethiopian Youth Sports Academy [ETB 21.5 million (USD 1.1 million)]. According to the World Bank, Ethiopia spent 25.37% of its government expenditure and 4.69% of its GDP on providing education in 2010.

National Youth Councils are increasingly successful in acting as platforms for young people to participate in decision-making processes, and young people themselves have been instrumental in their establishment. Several AU Member states have developed national youth policies, in some cases with the active participation of young people.

Efforts to create a supportive environment for the participation, engagement and volunteering of young people, including through youth-led organizations, need to be multiplied in order for youth to contribute effectively to improving their livelihoods. These efforts should aim to build youth capacities and increase their employability. To multiply and sustain such efforts on behalf of youth empowerment, sustainable programs that focus on long-term institutionalization of meaningful youth participation are required.

There is a general realization that youth development issues cut across different sectors, and thus require a coordinated approach (UNESCO, 2004). A central ministry (or department) of youth development responsible for policy formulation and for coordinating and monitoring its implementation should be created in all African countries. This youth ministry or department should direct other ministries as to how to incorporate youth issues into their sectoral policies, programs and projects.

Conclusions and Recommendations

There is evidence of good policies aimed at facilitating the establishment of a policy environment conducive to youth engagement in agriculture. Well-designed

integrated and inclusive national planning and agriculture sector policies that are designed through a participatory approach are critical in ensuring that

the voices of youth are consolidated, harmonized, and coordinated in agricultural sectoral policies and programs. This can catalyze the engagement of youth in the development agenda in Africa. Best practices in policy from countries like Ghana, Nigeria and South Africa should be shared and scaled out to other African countries.

Furthermore, given that youth development issues cut across different sectors, concerted efforts should be made for interdepartmental (integrated) planning, in partnership with NGOs, development partners and the private sector. This will ensure that the youth have support from all sectors to effectively participate in agriculture, either as farmers and agripreneurs, or in other professional capacities. In addition, there is need to build the capacity of the youth to participate effectively in the design, implementation, monitoring, and evaluation of national development plans, policies and poverty reduction strategies. This includes strengthening the institutions where youth can give voice to their issues.

There is need to meaningfully institutionalize youth involvement in agricultural policymaking, and consider

the varying needs of young men and women and the different demands they face. Youth should be given a chance to take an active part in decision-making at local, national and global levels. If young people's voices are not heard and the impact of agriculture policy on their lives is not discussed in decision-making forums, even well intentioned actions on the part of 'the grown-ups' will fail to achieve the intended impacts.

Involving young people in examining existing policies, and evaluating potential policy alternatives, is a crucial step towards agricultural policy responsiveness. Young people also need training and opportunities to build skills to contribute effectively in decision-making processes. They must be allowed to develop their own interests on specific topics and offered guidance in how best to communicate their challenges, ideas, and experiences.

It is recommended that favorable sector policies be developed to encourage smart and innovative farming activities for the youth population. Below are some specific recommendations for engaging youth in agriculture policy decision-making:

Supply side

- Integration of youth in all policy documents across the board;
- Improve coordination of youth programs across all sectors through institutional mechanism, such as a youth council or youth authority;
- Build the capacity of institutions to coordinate and oversee the integration of youth in sector policies;
- Allocate adequate resources to oversight institutions;
- Enhance national legal frameworks and align them to international and regional treaties; and
- Put monitoring mechanisms in place and hold policymakers accountable to the youth.

Demand side

- *Building capacity of youth* – There is need for training and skill-building opportunities for young people that can prepare them for active participation in decision-making processes;
- *Engage youth actively* – Youth must be recognized as major stakeholders. The platforms from which their voices can be heard on issues that directly concern them need to be identified and strengthened;
- *Link youth to planning and policy efforts* – This can be accomplished by involving youth in the examination of existing policies, as well as determining and evaluating potential policy alternatives;
- *Allow youth to identify their own interests* – Within the greater framework of agriculture policy making, youth may have expertise or interests in specific topics; and
- *Facilitate youth communication, advocacy and networking* – There is need to guide youth in terms of how to communicate their challenges, ideas, and experiences.

For Africa to achieve food security, young people must be regarded as strategic actors who need and deserve special attention, support and follow-up. With their energy, passion and talents, they can help to solve many of the serious problems that Africa faces today. But first, young people must be given the tools they need to drive Africa's green revolution, while also safeguarding the continent's natural resources and environment. Youth need to be part of decisions and policy-making processes for agriculture in Africa because they are the generation that will have to ensure that the continent's growing population is fed.

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Chapter 8

Youth in Agriculture

Productivity and

Economic Growth:

Key Findings and

Recommendations

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Agriculture holds the key to economic transformation, growth, and poverty reduction in sub-Saharan Africa. The overwhelming role of agriculture in generating future prosperity in Africa cannot be overemphasized. As has been noted, the agriculture sector alone accounts for the employment and livelihoods of over 65% of the working population in SSA and contributes on average about 30% of the GDP of most countries of the region. Agriculture offers the majority of SSA youth the opportunity to be fully employed, generate income, make meaningful contributions to the social and economic development and growth of their countries, and be self-sufficient in providing a livelihood for themselves and their family.

For African agriculture to become substantially more productive, youth must be involved in the sector and bring with them their energy, creativity and entrepreneurial potential. When SSA agriculture becomes – and is perceived to be – a profitable, competitive, and productive business, it will attract the entrepreneurial spirit, dynamism, and the resourcefulness of the continent's youth.

African agriculture is growing, and becoming more productive and market oriented. As it does, youth can and must be more fully engaged in the sector. The traditional, low productivity forms of agriculture that have characterized the sector for many years are being transformed across SSA. Young 'agripreneurs' who can and will approach agriculture as a business will speed this essential transformation. It is the youth who will take advantage of current agricultural research and the new technologies being developed and tailored to African agroecologies – improved seeds and breeds, soil and water conservation practices, and mechanization, coupled with increased access to financial products and services, crop insurance, restructured land tenure systems, an improving policy environment, and public and private sector investments in catalyzing an agricultural transformation.

Increased agricultural productivity and competitiveness is stimulating economic growth, employment, and poverty alleviation across Africa, and is critical for the social and economic transformation of the continent. To carry this trend forward, youth must be involved. Africa's youth must be mobilized into an active and productive force that will provide the competitive edge needed to participate in global food markets; they are the 'X-factor' in the growth and employment equation needed to produce Africa's 21st century economic makeover.

The chapters in this Report have described in detail, and provided relevant examples and illustrations of, some of the challenges and the opportunities associated with continent's remarkable youth demographic. This 'youth dividend' must be linked to increasing agricultural productivity, which in turn is linked to economic growth, employment, rising incomes and poverty reduction – the path that needs to be followed to achieve Africa's agricultural renaissance and economic transformation.

Data showing the current status of youth in agriculture, along with evidence demonstrating current trends regarding youth engagement in agriculture, are presented in the first chapter of this Report. Chapters 2 and 3 examine factors affecting the potential contributions of youth to increasing agricultural productivity – both positive and negative – along with opportunities for youth in the realm of agricultural entrepreneurship and agribusiness; the respective roles of the public and private sectors in generating employment for youth in the agriculture sector is also discussed.

Chapter 4 presents practical and evidence-based financial inclusion models to strengthen African youth participation in agricultural value chains, and Chapter 5 takes a close look at the proliferation of information and communications technologies (ICTs) and the positive impacts of that rapid change on agriculture, how it can help reduce youth unemployment, accelerate agricultural transformation, and expedite the achievement of food security for sustainable development in Africa.

The current status of capacity building and skills development is examined in Chapter 6, with a specific focus on youth empowerment and job creation in the agriculture sector and the necessary skills development to support youth entrepreneurship as a solution to unemployment and food insecurity.

Finally, Chapter 7 focuses on what is needed in the way of policy reforms to motivate and incentivize youth in agriculture, i.e., to create a policy environment that is conducive to attracting and retaining youth in agriculture. A review of existing continental and national youth policies and agriculture sector policies that are aimed at attracting youth to agriculture has been done, with the objective of informing future dialogue on youth development and engagement in agriculture at all levels.

Key Findings and Recommendations

The authors of the various chapters in this Report have made general and specific recommendations needed to mobilize, incentivize and encourage youth participation

in agriculture in SSA. In reviewing and reflecting on the chapters, the following key findings and associated recommendations stand out:

- That the future of the continent is in the hands of the youth. They are one of Africa's greatest assets and an inevitable force for improving the productivity and growth of all sectors of the African economy.
- That Africa's youth are heterogeneous and are becoming well educated, equipped, and empowered to make meaningful and productive contributions to the continent's economic and social wellbeing, including its agricultural transformation.
- That unlike in the rest of the world, especially in developed countries, the population of sub-Saharan Africa is 'youthening' (not ageing) and the continent's demographic profile clearly shows a large and growing 'youth bulge'. This 'youth dividend' or 'demographic bonus' must be mobilized and invested in political, social and economic growth and transformation. There are about 226 million youth aged 15-24 living in Africa, accounting for 19% of the global youth population. By 2030, it is projected that the number of youth in Africa will have increased by 42%.
- That agriculture has been proven to be a vital sector where the youth dividend can be invested to increase productivity, incomes, and economic growth. Africa must capitalize on the continent's burgeoning youth population to increase agriculture productivity.
- That agriculture offers many opportunities to youth for improved livelihoods and employment (beyond farming), but for the agriculture sector to be attractive to them, it has to be profitable, competitive and dynamic.
- That agribusiness models which enhance employment creation, social equity, and inclusion, and that consider the sustainability of the agri-food system, are more likely to stimulate transformative work for young people while driving sustainable agriculture in Africa.
- That training, financing, and well-developed business infrastructure (including markets, incubation mechanisms, business networks, and policies) is required for successful youth entrepreneurship.
- That links between young entrepreneurs in agriculture ('agripreneurs') and formal financial institutions need to be strengthened by improving the financial literacy of youth, as well as the capabilities of institutions to assess opportunities in the agriculture sector.
- That young agripreneurs, having fewer assets, will benefit from forms of finance that do not require fixed collateral, such as contract farming, leasing, warehouse receipt financing, or factoring. Governments and international development organizations should encourage such forms of finance through blending and guarantee schemes.
- That scarcity of venture capital firms (including the mentoring services that they provide) hampers young African entrepreneurs, including in agriculture, in developing and scaling up their businesses. Development organizations should continue to scale up their support for challenge funds and impact investing to fill this critical gap in the market.
- That facilitating cheaper and more reliable access to ICT devices and connectivity is needed to accelerate ICT adoption among youth in agriculture, especially young farmers and agripreneurs. Efforts in this field must go hand in hand with increased capacity building in ICT use, tailored towards agribusiness development.
- That ICT entrepreneurship and innovation development in the agriculture sector is a recent development that offers new employment opportunities to African youth. It needs to be further promoted in all African countries and needs multi-stakeholder support to strengthen its profitability and effectiveness.
- That African agricultural educational institutions should include or strengthen courses on ICT innovations in their curricula. This is essential to nurture a generation of young agriculturalists fully prepared to take advantage of ICT innovations in their professional career after graduation.
- That there is a need to strengthen ICT use in agriculture by public and private institutions through awareness creation and capacity building. This involves improving equipment in ways that enhance work environments and make them more conducive to innovations by youth in agricultural professions.
- That agricultural growth is hampered by a lack of critical skills in the sector. The current curricula and training materials in use are outdated and not relevant to the skills required by the private sector; nor are they especially effective in encouraging youth entrepreneurship and empowerment.
- That targeted capacity building is required to ensure that the private sector skills gaps are addressed, and that youth empowerment initiatives address intangible but critically important factors, such as leadership abilities, personal development, and other life skills training.
- That capacity building in agriculture should be holistic, encompassing the environment, organizations, and institutions responsible for training, as well as the

capacity and willingness of individuals to undertake and utilize the training provided. Environmental factors, including political frameworks, policies and strategies, need to be aligned to national and regional development agendas, especially the National Agriculture Investment Program (NAIP) of the CAADP Process.

- That the skills required by those employed in the informal economy are as complex and wide-ranging as the activities and forms of employment found within it. Vocational education and training and entrepreneurship have a key role to play in improving conditions for informal training and those working in the informal economy.
- That youth empowerment in the agricultural context should build on existing efforts, policies and practices. Most sub-Saharan Africa countries already have relevant agricultural development strategies/policies.
- That existing policy incentive structures may need to be adjusted so that they work for youth

development and engagement in agriculture, not against it.

- That promoting synergies between youth policies and broader development policies and frameworks is crucial, particularly in the context of the Post-2015 Development Agenda and means of implementation.
- That African countries need policy instruments aimed at changing perceptions of youth engagement in agriculture, to sensitize and institutionalize the concept, such as through higher education training.
- That institutionalize youth participation by providing opportunities and enabling environments for young people to participate at all levels of government, as well as at regional and international levels.
- That there is a need to promote harmonization between international, regional and national commitments to youth and to leverage these to promote youth development activities.

Conclusion

Agriculture is vital to Africa's social and economic transformation. It employs the largest share of the working population, and it contributes significantly to the GDP of most African countries. For the agriculture sector to continue playing this role, youth in SSA must be encouraged and prepared to take up agricultural initiatives and to be engaged in all aspect of the agricultural value chain – from production through marketing. Policies, programs, and intervention strategies that will incentivize and attract youth into agriculture as a business must be formulated, developed, and implemented to achieve higher agricultural productivity. Agriculture creates jobs and generates incomes for youth, leading to poverty reduction, increased consumption, and economic growth.

The nature of agricultural systems in SSA poses challenges to youth who want to engage in agriculture as a business. As summarized above and throughout this Report, youth who want to pursue careers in agribusiness face many constraints and must overcome a host of obstacles. Yet engaging SSA youth in agriculture is a laudable vision and one of the best

development strategies to enable most African countries to contribute productively to the global economy in the 21st century.

Youth roles in agriculture and the various opportunities available to them to make meaningful contributions have been discussed here in detail. Concrete and specific recommendations have been put forth by the authors of this Report – actions that are needed to promote and achieve active participation of youth in agricultural research and development, and in a range of agribusiness activities all along the agricultural value chain. Youth in sub-Saharan Africa can change the face of agriculture in the region, but this requires a collective effort by public and private institutions and businesses, and the mobilization of key factors of production – land, capital, human resources, and entrepreneurial skills – to support youth as agents of change. An agricultural renaissance can be achieved on the continent and Africa's youth are essential to bringing it about, transforming agriculture into a prosperous, income-generating and job-creating sector that will improve the livelihoods of millions of people on the continent.

Section II.

Agricultural Data for Selected Sub-Saharan Countries

Technical Notes

The following conventions are used in the Tables:

0 or 0.0 = nil or negligible .. or () data not available or missing

Sources of data as follows:

Population, total (millions)

Source: Health, Nutrition and Population Statistics, World Bank

Rural Population (% of total population)

Source: World Development Indicators, World Bank

Total Economically Active Population

Source: FAOSTAT

Female Share of Economically Active Population

Source: AGRA's computations using data from FAOSTAT

Internet Users (per 100 people)

Source: World Development Indicators, World Bank

Cell Phone Subscriptions (per 100 People)

Source: AGRA's computation using data from World Bank's World Development Indicators

Youth (15-34) % in total population

Source: AGRA's calculations using data from Health, Nutrition and Population Statistics

Employment to Population Ratio, [ages 15-24, total (%)]

Source: World Development Indicators, World Bank (Modelled ILO estimate)

Financial Inclusion

Source: Global Findex (Global Financial Inclusion Database), World Bank

GDP per capita (current USD)

Source: World Development Indicators, World Bank

Cereal Production (metric tons)

Source: World Development Indicators, World Bank

Cereal yield (kg per hectare)

Source: World Development Indicators, World Bank

Crop Production Index (2004-2006 = 100)

Source: World Development Indicators, World Bank

Fertilizer Consumption (kg per hectare of arable land)

Source: World Development Indicators, World Bank

Researchers, total (FTEs per million population)

Source: ASTI (Agricultural Science and Technology Indicators)*

Researchers, total (FTEs)

Source: ASTI (Agricultural Science and Technology Indicators)
<http://www.asti.cgiar.org/>

Agriculture Expenditure (% Share of Total Expenditure)

Source: Regional Strategic Analysis and Knowledge Support System (ReSAKSS)

POPULATION, TOTAL (IN MILLIONS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	13.9	14.3	14.8	15.4	15.9	16.5	17.1	17.7	18.3	18.9	19.5	20.1	20.8	21.4	22.1
Benin	6.9	7.1	7.4	7.6	7.9	8.1	8.4	8.7	8.9	9.2	9.5	9.7	10.0	10.3	10.6
Botswana	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0
Burkina Faso	11.6	11.9	12.3	12.6	13.0	13.4	13.8	14.2	14.6	15.0	15.5	16.0	16.4	16.9	17.4
Burundi	6.6	6.8	7.0	7.2	7.5	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.8	10.1	10.4
Cabo Verde	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Cameroon	15.9	16.3	16.7	17.2	17.6	18.1	18.6	19.1	19.6	20.1	20.6	21.1	21.7	22.2	22.8
Central African Republic	3.6	3.7	3.7	3.8	3.8	3.9	4.0	4.1	4.1	4.2	4.3	4.4	4.5	4.6	4.7
Chad	8.3	8.6	8.9	9.3	9.6	10.0	10.3	10.6	11.0	11.3	11.7	12.0	12.4	12.8	13.2
Comoros	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
Congo. Dem. Rep.	46.9	48.1	49.5	50.9	52.4	54.0	55.5	57.1	58.8	60.4	62.1	63.9	65.7	67.5	69.3
Congo. Rep.	3.1	3.2	3.2	3.3	3.4	3.5	3.6	3.7	3.8	4.0	4.1	4.2	4.3	4.4	4.5
Cote d'Ivoire	16.1	16.4	16.6	16.9	17.1	17.3	17.6	17.9	18.2	18.6	18.9	19.3	19.8	20.3	20.8
Djibouti	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Equatorial Guinea	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
Eritrea	3.9	4.1	4.2	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.7	5.9	6.1	6.3	6.5
Ethiopia	66.0	67.9	69.9	71.9	74.0	76.1	78.2	80.4	82.6	84.8	87.1	89.3	91.7	94.1	96.5
Gabon	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7
Gambia. The	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.9
Ghana	18.8	19.2	19.7	20.3	20.8	21.3	21.9	22.5	23.1	23.6	24.2	24.8	25.3	25.9	26.4
Guinea	8.7	8.9	9.0	9.2	9.3	9.5	9.8	10.0	10.3	10.5	10.8	11.1	11.4	11.7	12.0
Guinea-Bissau	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7
Kenya	31.2	32.1	33.0	33.9	34.8	35.7	36.7	37.7	38.7	39.8	40.9	42.0	43.1	44.3	45.5
Lesotho	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1
Liberia	2.8	3.0	3.0	3.1	3.1	3.2	3.3	3.5	3.6	3.8	3.9	4.0	4.1	4.2	4.4
Madagascar	15.7	16.2	16.7	17.2	17.7	18.2	18.8	19.3	19.9	20.5	21.0	21.6	22.2	22.9	23.5

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Malawi	11.3	11.6	11.9	12.2	12.5	12.9	13.3	13.7	14.1	14.5	15.0	15.4	15.9	16.3	16.8
Mali	10.2	10.5	10.8	11.2	11.5	11.9	12.3	12.7	13.1	13.5	13.9	14.4	14.8	15.3	15.7
Mauritania	2.7	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	3.9
Mauritius	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Mozambique	18.2	18.7	19.3	19.8	20.4	21.0	21.5	22.1	22.7	23.3	23.9	24.5	25.2	25.8	26.4
Namibia	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.3
Niger	10.9	11.4	11.8	12.2	12.7	13.1	13.6	14.2	14.7	15.3	15.8	16.5	17.1	17.8	18.5
Nigeria	12.8	12.6	12.9	13.2	13.6	13.9	14.3	14.7	15.1	15.5	15.9	16.4	16.8	17.3	17.8
Rwanda	8.4	8.7	8.9	9.1	9.2	9.4	9.6	9.9	10.2	10.5	10.8	11.1	11.4	11.7	12.1
Sao Tome and Principe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Senegal	9.8	10.1	10.3	10.6	10.9	11.2	11.5	11.9	12.2	12.5	12.9	13.3	13.7	14.1	14.5
Seychelles	0.081	0.081	0.084	0.083	0.083	0.083	0.085	0.085	0.087	0.087	0.090	0.087	0.088	0.090	0.092
Sierra Leone	4.1	4.3	4.4	4.7	4.9	5.1	5.2	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.2
Somalia	7.3	7.6	7.8	8.0	8.2	8.4	8.6	8.9	9.1	9.3	9.6	9.9	10.2	10.5	10.8
South Africa	44.0	44.9	45.5	46.1	46.7	47.3	47.9	48.6	49.3	50.0	50.7	51.5	52.3	53.1	54.0
South Sudan	6.6	6.9	7.1	7.4	7.7	8.0	8.3	8.7	9.1	9.5	9.9	10.3	10.8	11.3	11.7
Sub-Saharan Africa (all income levels)	66.42	68.20	69.99	71.83	73.73	75.69	77.72	79.80	81.95	84.17	86.45	88.80	91.22	93.70	96.23
Sudan	27.7	28.4	29.1	29.9	30.7	31.5	32.4	33.2	34.0	34.8	35.6	36.4	37.2	37.9	38.7
Swaziland	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2
Tanzania	34.0	34.9	35.8	36.7	37.7	38.8	39.9	41.1	42.3	43.6	44.9	46.3	47.7	49.2	50.7
Togo	4.8	4.9	5.1	5.2	5.4	5.5	5.6	5.8	5.9	6.1	6.3	6.4	6.6	6.8	6.9
Tunisia	9.5	9.6	9.7	9.8	9.9	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	11.0
Uganda	24.2	25.0	25.9	26.8	27.7	28.7	29.7	30.7	31.7	32.8	33.9	35.1	36.3	37.5	38.8
Zambia	10.1	10.3	10.6	10.8	11.1	11.4	11.7	12.1	12.4	12.8	13.2	13.6	14.0	14.5	15.0
Zimbabwe	12.5	12.5	12.6	12.6	12.6	12.7	12.7	12.7	12.7	12.8	13.0	13.3	13.7	14.1	14.6

Source: World Bank's Health, Nutrition and Population Statistics

RURAL POPULATION (% OF TOTAL POPULATION)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	68	67	66	65	65	64	63	62	61	61	60	59	58	58	57
Benin	62	61	61	61	60	60	60	59	59	59	58	58	57	57	56
Botswana	47	46	46	45	45	45	45	44	44	44	44	44	43	43	43
Burundi	92	92	91	91	91	91	90	90	90	90	89	89	89	89	88
Cabo Verde	47	46	45	44	43	42	41	41	40	39	38	37	37	36	35
Burkina Faso	82	81	81	80	79	78	78	77	76	75	74	73	73	72	71
Central African Republic	62	62	62	62	62	62	62	62	62	61	61	61	61	61	60
Cameroon	54	54	53	53	52	51	51	50	50	49	48	48	47	47	46
Chad	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
Comoros	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
Congo. Rep.	41	41	40	40	39	39	39	38	38	37	37	36	36	35	35
Congo. Dem. Rep.	65	64	64	63	63	63	62	62	61	61	60	60	59	59	58
Cote d'Ivoire	56	56	55	54	54	53	53	52	51	50	49	49	48	47	47
Djibouti	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Equatorial Guinea	61	61	61	61	61	61	61	61	61	61	61	61	61	60	60
Eritrea	82	82	82	82	81	81	81	80	80	80	79	79	79	78	78
Ethiopia	85	85	85	85	84	84	84	84	83	83	83	82	82	81	81
Gabon	20	19	18	18	17	17	16	16	15	15	14	14	14	13	13
Gambia. The	52	51	50	49	49	48	47	46	45	44	44	43	42	42	41
Guinea	69	69	68	68	68	67	67	66	66	66	65	65	64	64	63
Guinea-Bissau	63	63	62	61	60	59	58	57	57	56	55	54	53	52	51
Kenya	80	80	79	79	79	78	78	78	77	77	76	76	76	75	75
Lesotho	80	80	79	79	78	78	77	77	76	76	75	75	74	74	73
Liberia	56	55	55	55	54	54	54	53	53	53	52	52	51	51	51

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Madagascar	73	73	72	72	72	71	71	70	69	69	68	67	67	66	66
Malawi	85	85	85	85	85	85	85	85	85	85	84	84	84	84	84
Mali	72	71	70	69	69	68	67	66	66	65	64	63	62	62	61
Mauritius	57	58	58	58	58	58	59	59	59	59	59	60	60	60	60
Mozambique	71	71	71	70	70	70	70	70	69	69	69	69	69	68	68
Namibia	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54
Nigeria	65	64	63	63	62	61	60	59	58	57	57	56	55	54	53
Niger	84	84	84	84	83	83	83	83	83	83	82	82	82	82	82
Rwanda	85	84	83	82	82	81	80	79	78	77	76	75	74	73	72
Sao Tome and Principe	47	46	45	44	43	42	41	40	40	39	38	37	37	36	35
Senegal	60	60	59	59	59	59	59	58	58	58	58	58	57	57	57
Sierra Leone	64	64	64	64	63	63	63	63	62	62	62	61	61	61	60
Seychelles	50	50	50	49	49	49	49	48	48	48	48	47	47	47	46
Somalia	67	66	66	66	65	65	64	64	64	63	63	62	62	61	61
South Africa	43	43	42	42	41	40	40	39	39	38	38	37	37	36	36
South Sudan	83	83	83	83	83	83	83	83	82	82	82	82	82	82	81
Sub-Saharan Africa (all income levels)	69	69	68	68	68	67	67	66	66	65	65	64	64	63	63
Sudan	68	67	67	67	67	67	67	67	67	67	67	67	67	67	66
Swaziland	77	77	78	78	78	78	78	78	78	78	79	79	79	79	79
Tanzania	78	77	77	76	76	75	75	74	73	73	72	71	71	70	69
Togo	67	67	66	66	65	65	64	64	63	63	62	62	62	61	61
Uganda	88	88	88	88	87	87	87	86	86	86	86	85	85	85	84
Zambia	65	65	65	64	64	63	63	63	62	62	61	61	60	60	60
Zimbabwe	66	66	65	66	66	66	66	66	66	67	67	67	67	67	67

Source: World Development Indicators

TOTAL ECONOMICALLY ACTIVE POPULATION

	UNIT	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	1,000	6,043	6,251	6,479	6,718	6,970	7,230	7,496	7,799	8,094	8,394	8,697	9,000	9,305	9,613	9,930
Benin	1,000	2,740	2,838	2,944	3,055	3,169	3,284	3,401	3,523	3,644	3,766	3,890	4,014	4,140	4,268	4,399
Botswana	1,000	638	623	633	646	657	668	681	698	712	725	738	751	763	775	787
Burkina Faso	1,000	5,099	5,266	5,442	5,627	5,817	6,013	6,211	6,422	6,634	6,853	7,082	7,319	7,565	7,820	8,083
Burundi	1,000	3,173	3,268	3,388	3,529	3,679	3,836	3,994	4,162	4,319	4,472	4,617	4,752	4,878	5,000	5,123
Cabo Verde	1,000	153	157	161	166	170	173	176	180	182	184	187	190	193	197	200
Cameroon	1,000	5,903	6,087	6,260	6,439	6,624	6,818	7,021	7,170	7,395	7,631	7,875	8,128	8,392	8,665	8,949
Central African Republic	1,000	1,610	1,638	1,664	1,689	1,717	1,748	1,782	1,824	1,867	1,912	1,959	2,009	2,060	2,113	2,168
Chad	1,000	3,240	3,373	3,513	3,687	3,855	4,002	4,136	4,265	4,410	4,557	4,710	4,869	5,033	5,204	5,381
Comoros	1,000	219	225	232	239	247	254	262	270	279	288	297	307	317	327	337
Congo	1,000	1,249	1,283	1,316	1,348	1,384	1,423	1,467	1,513	1,563	1,615	1,668	1,722	1,777	1,834	1,892
Côte d'Ivoire	1,000	5,886	5,997	6,095	6,185	6,281	6,386	6,503	6,641	6,791	6,959	7,143	7,346	7,567	7,802	8,047
Democratic Republic of the Congo	1,000	17,809	18,252	18,750	19,299	19,889	20,481	21,068	21,584	22,170	22,768	23,381	24,010	24,655	25,321	26,016
Djibouti	1,000	294	300	306	311	317	324	330	338	345	353	361	370	379	388	397
Equatorial Guinea	1,000	204	210	217	224	231	238	245	249	257	264	272	281	289	298	307
Eritrea	1,000	1,523	1,600	1,684	1,773	1,861	1,945	2,024	2,087	2,155	2,224	2,298	2,377	2,462	2,550	2,641
Ethiopia	1,000	29,440	30,632	31,875	33,167	34,503	35,879	37,015	38,542	39,995	41,476	42,985	44,521	46,083	47,669	49,277
Gabon	1,000	543	559	576	593	610	629	648	669	690	712	735	758	782	807	831
Gambia	1,000	552	570	588	608	629	650	672	696	721	746	774	803	833	865	899
Ghana	1,000	8,233	8,462	8,699	8,946	9,202	9,472	9,747	10,094	10,417	10,748	11,083	11,417	11,753	12,090	12,433
Guinea	1,000	4,148	4,223	4,300	4,382	4,471	4,571	4,683	4,806	4,942	5,084	5,231	5,382	5,537	5,697	5,862
Guinea-Bissau	1,000	486	496	505	515	525	535	546	555	566	578	591	605	620	636	652
Kenya	1,000	14,274	14,710	15,163	15,625	16,093	16,567	17,041	17,472	17,930	18,405	18,906	19,436	19,993	20,577	21,187
Lesotho	1,000	788	796	803	810	816	824	830	834	842	852	863	876	890	905	920

	UNIT	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Liberia	1,000	1,072	1,112	1,138	1,158	1,180	1,212	1,254	1,302	1,356	1,410	1,459	1,504	1,546	1,585	1,626
Madagascar	1,000	7,180	7,412	7,666	7,910	8,426	8,895	9,177	9,360	9,734	10,123	10,526	10,944	11,374	11,817	12,269
Malawi	1,000	4,731	4,847	4,958	5,070	5,191	5,329	5,476	5,666	5,855	6,054	6,260	6,473	6,694	6,924	7,163
Mali	1,000	2,680	2,752	2,840	2,936	3,040	3,144	3,252	3,367	3,478	3,591	3,710	3,833	3,962	4,098	4,242
Mauritania	1,000	1,108	1,147	1,187	1,229	1,272	1,315	1,358	1,404	1,449	1,496	1,544	1,593	1,643	1,694	1,746
Mauritius	1,000	528	535	564	564	532	540	544	555	556	558	559	560	561	563	564
Mozambique	1,000	8,611	8,815	9,049	9,280	9,509	9,741	9,975	10,230	10,487	10,755	11,036	11,332	11,641	11,968	12,314
Namibia	1,000	612	626	636	646	654	665	677	698	717	736	757	779	803	828	854
Niger	1,000	3,634	3,771	3,907	4,047	4,190	4,343	4,505	4,672	4,850	5,038	5,237	5,448	5,670	5,904	6,151
Nigeria	1,000	37,211	38,214	39,247	40,314	41,436	42,634	43,887	45,224	46,649	48,164	49,774	51,487	53,305	55,229	57,253
Rwanda	1,000	3,701	3,887	4,010	4,100	4,182	4,284	4,414	4,535	4,679	4,829	4,978	5,125	5,274	5,423	5,575
Sao Tome and Principe	1,000	43	44	46	47	49	50	52	54	56	59	61	63	66	68	71
Senegal	1,000	4,127	4,247	4,372	4,506	4,645	4,790	4,938	5,106	5,278	5,460	5,656	5,854	6,083	6,314	6,554
Seychelles	1,000	36	36	37	38	39	40	40	41	42	42	43	43	44	44	45
Sierra Leone	1,000	1,602	1,654	1,716	1,794	1,871	1,939	1,995	2,044	2,085	2,125	2,166	2,209	2,253	2,298	2,343
Somalia	1,000	2,917	3,006	3,093	3,179	3,264	3,351	3,440	3,535	3,629	3,731	3,843	3,966	4,100	4,244	4,395
South Africa	1,000	15,941	16,265	16,585	16,900	17,162	17,406	17,642	18,052	18,320	18,570	18,801	19,013	19,210	19,398	19,583
South Sudan	1,000												3,318	3,499	3,684	3,868
Sudan	1,000												11,658	12,021	12,394	12,785
Swaziland	1,000	418	424	427	430	434	439	445	453	462	472	481	491	501	511	522
Togo	1,000	1,876	1,929	1,986	2,044	2,105	2,168	2,232	2,298	2,368	2,442	2,520	2,601	2,686	2,774	2,866
Tunisia	1,000	3,206	3,275	3,348	3,418	3,486	3,557	3,639	3,714	3,797	3,880	3,962	4,041	4,117	4,190	4,260
Uganda	1,000	10,534	10,878	11,249	11,645	12,060	12,492	12,940	13,433	13,929	14,445	14,981	15,538	16,115	16,715	17,335
United Republic of Tanzania	1,000	16,826	17,215	17,653	18,111	18,594	19,110	19,663	20,286	20,921	21,595	22,306	23,055	23,843	24,675	25,555
Zambia	1,000	3,844	3,939	4,033	4,131	4,237	4,349	4,472	4,623	4,778	4,947	5,130	5,327	5,537	5,762	5,998
Zimbabwe	1,000	5,195	5,251	5,295	5,328	5,354	5,384	5,418	5,459	5,526	5,624	5,759	5,937	6,154	6,399	6,654

Source: FAOSTAT

FEMALE SHARE OF ECONOMICALLY ACTIVE POPULATION

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	45.8	45.8	45.9	45.9	46.0	46.2	46.6	46.5	46.7	46.9	47.1	47.3	47.4	47.6	47.7
Benin	41.4	41.4	41.4	41.3	41.2	41.1	41.1	41.3	41.4	41.4	41.6	41.7	41.8	42.0	42.1
Botswana	42.6	42.4	43.4	43.3	43.7	44.0	44.1	43.7	43.7	43.6	43.6	43.5	43.4	43.4	43.2
Burkina Faso	47.8	47.7	47.7	47.6	47.6	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
Burundi	51.8	51.7	51.7	51.5	51.5	51.4	51.3	51.2	51.1	51.1	51.0	51.0	50.9	50.9	50.8
Cabo Verde	38.6	38.2	38.5	38.6	38.8	39.3	39.2	40.0	40.7	40.8	41.2	41.1	41.5	41.6	42.0
Cameroon	40.9	41.1	41.1	41.1	41.1	41.1	41.2	41.3	41.5	41.6	41.7	41.9	42.0	42.1	42.3
Central African Republic	45.8	45.7	45.6	45.4	45.3	45.3	45.3	45.1	45.0	45.0	44.9	44.8	44.8	44.7	44.6
Chad	45.5	45.8	46.1	47.3	48.4	48.6	48.5	48.4	48.5	48.6	48.7	48.8	48.8	48.9	48.9
Comoros	42.9	43.1	43.1	43.1	42.9	43.3	43.1	43.3	43.4	43.4	43.4	43.6	43.5	43.7	43.9
Congo	41.1	41.1	41.0	40.7	40.7	40.8	40.9	40.6	40.6	40.6	40.5	40.5	40.5	40.5	40.4
Côte d'Ivoire	29.9	29.9	29.8	29.8	29.9	30.0	30.1	30.1	30.2	30.2	30.3	30.4	30.4	30.5	30.5
Democratic Republic of the Congo	38.9	38.7	38.6	38.5	38.7	38.8	38.8	38.5	38.4	38.4	38.4	38.3	38.3	38.3	38.3
Djibouti	42.9	42.7	42.8	42.8	42.9	42.9	43.0	42.9	42.9	43.1	43.2	43.2	43.3	43.3	43.6
Equatorial Guinea	32.4	32.4	32.3	32.1	32.0	32.4	32.2	30.9	31.1	31.1	31.3	31.0	31.1	31.2	31.3
Eritrea	40.8	41.0	40.9	40.9	40.8	40.8	40.7	40.5	40.4	40.3	40.3	40.3	40.3	40.2	40.2
Ethiopia	45.1	45.4	45.8	46.1	46.5	46.8	47.0	47.1	47.3	47.5	47.6	47.8	47.9	48.0	48.1
Gabon	44.4	44.4	44.3	44.4	44.4	44.2	44.1	43.9	43.9	43.8	43.7	43.7	43.7	43.6	43.7
Gambia	45.7	45.8	45.7	45.7	45.8	45.8	46.0	46.3	46.5	46.6	46.8	46.9	47.2	47.4	47.5
Ghana	48.5	48.7	48.9	49.3	49.6	49.9	50.2	50.0	50.1	50.2	50.2	50.2	50.2	50.2	50.1
Guinea	47.7	47.6	47.6	47.5	47.5	47.5	47.4	47.5	47.5	47.5	47.5	47.6	47.6	47.6	47.7
Guinea-Bissau	39.5	39.3	38.8	38.6	38.7	38.7	38.6	38.2	38.2	38.1	38.1	38.0	38.1	37.9	38.0
Kenya	46.5	46.5	46.4	46.4	46.4	46.4	46.4	46.4	46.5	46.5	46.5	46.6	46.6	46.7	46.7
Lesotho	50.6	50.9	50.9	51.0	51.1	51.0	51.1	50.6	50.6	50.6	50.5	50.3	50.3	50.3	50.2
Liberia	39.4	39.5	39.5	39.6	39.5	39.5	39.6	39.6	39.6	39.6	39.8	39.8	39.9	40.0	40.1

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Madagascar	48.4	48.5	48.2	48.3	48.7	49.0	49.1	48.7	48.8	49.0	49.1	49.2	49.3	49.4	49.4
Malawi	50.2	49.9	49.8	49.9	50.0	49.9	50.0	49.7	49.6	49.6	49.5	49.4	49.4	49.3	49.2
Mali	35.2	36.2	36.3	36.3	36.2	36.3	36.4	36.9	37.1	37.3	37.4	37.5	37.6	37.7	37.6
Mauritania	42.8	43.0	42.4	42.7	42.8	43.2	43.5	43.2	43.3	43.4	43.6	43.8	43.9	44.0	44.2
Mauritius	34.3	34.6	34.6	34.6	34.6	35.7	36.0	36.2	36.5	36.7	37.0	37.3	37.6	37.8	37.9
Mozambique	55.9	56.1	56.0	56.0	56.0	56.1	56.1	56.0	55.9	55.9	55.8	55.7	55.6	55.5	55.5
Namibia	44.8	45.0	45.4	45.5	46.3	46.8	47.3	47.1	47.3	47.6	47.6	47.6	47.7	47.6	47.5
Niger	31.3	31.4	31.3	31.4	31.2	31.2	31.3	31.2	31.1	31.1	31.1	31.1	31.0	31.0	31.0
Nigeria	33.4	33.4	33.7	34.2	34.5	34.6	34.8	35.2	35.5	35.9	36.3	36.7	37.1	37.5	37.9
Rwanda	52.6	52.7	52.8	52.8	52.9	52.9	52.9	52.8	52.8	52.8	52.8	52.7	52.7	52.6	52.6
Sao Tome and Principe	37.2	36.4	37.0	36.2	36.7	38.0	38.5	38.9	39.3	39.0	41.0	41.3	40.9	41.2	42.3
Senegal	41.8	42.0	42.0	42.2	42.4	42.6	42.7	43.1	43.3	43.6	43.8	44.0	44.2	44.4	44.6
Seychelles	47.2	47.2	48.6	47.4	48.7	47.5	47.5	46.3	47.6	47.6	46.5	46.5	45.5	47.7	46.7
Sierra Leone	48.1	48.7	49.7	49.9	50.1	50.2	50.4	50.1	50.2	50.2	50.3	50.3	50.3	50.3	50.4
Somalia	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.8	38.9	39.0	39.1	39.2	39.3	39.3	39.4
South Africa	44.0	44.2	44.4	44.6	45.0	45.4	45.7	45.8	46.0	46.2	46.3	46.4	46.5	46.6	46.7
South Sudan												31.8	32.0	32.2	32.3
Sudan	28.9	28.9	29.0	29.3	29.4	29.9	30.5	30.7	30.9	31.2	31.4	31.6	31.8	32.0	32.2
Swaziland	49.5	49.3	49.6	49.8	49.5	49.7	49.7	49.7	49.6	49.6	49.5	49.5	49.3	49.1	48.9
Togo	39.0	38.8	38.8	38.8	38.8	38.8	38.7	38.6	38.5	38.5	38.4	38.4	38.3	38.3	38.3
Tunisia	25.2	25.5	25.9	26.2	26.6	27.0	27.4	27.1	27.4	27.6	27.9	28.1	28.3	28.5	28.6
Uganda	47.8	47.8	47.8	47.7	47.7	47.7	47.7	47.7	47.7	47.7	47.8	47.8	47.8	47.8	47.9
United Republic of Tanzania	49.7	49.7	49.7	49.7	49.8	49.8	49.8	49.6	49.6	49.6	49.6	49.6	49.6	49.5	49.5
Zambia	42.9	42.9	42.9	43.0	43.3	43.4	43.6	43.1	43.1	43.2	43.3	43.4	43.5	43.5	43.6
Zimbabwe	45.6	45.4	45.1	44.7	44.5	44.4	44.2	43.8	43.6	43.5	43.4	43.2	43.1	42.9	42.8

Source: AGRA's computations using data from FAOSTAT

INTERNET USERS (PER 100 PEOPLE)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	0.1	0.1	0.3	0.4	0.5	1.1	1.9	3.2	4.6	6.0	10.0	14.8	16.9	19.1
Benin	0.2	0.4	0.7	1.0	1.2	1.3	1.5	1.8	1.9	2.2	3.1	4.1	4.5	4.9
Botswana	2.9	3.4	3.4	3.3	3.3	3.3	4.3	5.3	6.3	6.2	6.0	8.0	11.5	15.0
Burkina Faso	0.1	0.2	0.2	0.4	0.4	0.5	0.6	0.8	0.9	1.1	2.4	3.0	3.7	4.4
Burundi	0.1	0.1	0.1	0.2	0.3	0.5	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3
Cabo Verde	1.8	2.7	3.5	4.3	5.3	6.1	6.8	8.3	14.0	21.0	30.0	32.0	34.7	37.5
Cameroon	0.3	0.3	0.4	0.6	1.0	1.4	2.0	2.9	3.4	3.8	4.3	5.0	5.7	6.4
Central African Republic	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	1.0	1.8	2.0	2.2	3.0	3.5
Chad	0.0	0.0	0.2	0.3	0.4	0.4	0.6	0.8	1.2	1.5	1.7	1.9	2.1	2.3
Comoros	0.3	0.4	0.6	0.8	1.3	2.0	2.2	2.5	3.0	3.5	5.1	5.5	6.0	6.5
Congo. Dem. Rep.	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.6	0.7	1.2	1.7	2.2
Congo. Rep.	0.0	0.0	0.2	0.5	1.1	1.5	2.0	2.8	4.3	4.5	5.0	5.6	6.1	6.6
Cote d'Ivoire	0.2	0.4	0.5	0.8	0.8	1.0	1.5	1.8	1.9	2.0	2.1	2.2	2.4	2.6
Djibouti	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.6	2.3	4.0	6.5	7.0	8.3	9.5
Equatorial Guinea	0.1	0.2	0.3	0.5	0.8	1.1	1.3	1.6	1.8	2.1	6.0	11.5	13.9	16.4
Eritrea	0.1	0.2	0.2	..	..	..	..	0.4	0.5	0.5	0.6	0.7	0.8	0.9
Ethiopia	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.8	1.1	1.5	1.9
Gabon	1.2	1.3	1.9	2.7	3.0	4.9	5.5	5.8	6.2	6.7	7.2	8.0	8.6	9.2
Gambia. The	0.9	1.3	1.8	2.4	3.3	3.8	5.2	6.2	6.9	7.6	9.2	10.9	12.4	14.0
Ghana	0.2	0.2	0.8	1.2	1.7	1.8	2.7	3.9	4.3	5.4	7.8	14.1	12.3	12.3
Guinea	0.1	0.2	0.4	0.5	0.5	0.5	0.6	0.8	0.9	0.9	1.0	1.3	1.5	1.6
Guinea-Bissau	0.2	0.3	1.0	1.4	1.8	1.9	2.1	2.2	2.4	2.3	2.5	2.7	2.9	3.1
Kenya	0.3	0.6	1.2	2.9	3.0	3.1	7.5	8.0	8.7	10.0	14.0	28.0	32.1	39.0
Lesotho	0.2	0.3	1.1	1.5	2.2	2.6	3.0	3.4	3.6	3.7	3.9	4.2	4.6	5.0
Liberia	0.0	0.0	0.0	0.0	0.0	..	..	0.6	0.5	0.5	2.3	3.0	3.8	4.6

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Madagascar	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.7	1.7	1.6	1.7	1.9	2.1	2.2
Malawi	0.1	0.2	0.2	0.3	0.3	0.4	0.4	1.0	0.7	1.1	2.3	3.3	4.4	5.4
Mali	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.6	1.8	1.9	2.0	2.2	2.3
Mauritania	0.2	0.3	0.4	0.4	0.5	0.7	1.0	1.4	1.9	2.3	4.0	4.5	5.4	6.2
Mauritius	7.3	8.8	10.3	12.2	13.7	15.2	16.7	20.2	21.8	22.5	28.3	35.0	35.4	39.0
Mozambique	0.1	0.2	0.3	0.4	0.7	0.9	0.8	0.9	1.6	2.7	4.2	4.3	4.8	5.4
Namibia	1.6	2.4	2.6	3.4	3.8	4.0	4.4	4.8	5.3	6.5	11.6	12.0	12.9	13.9
Niger	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.7	0.8	0.8	1.3	1.4	1.7
Nigeria	0.1	0.1	0.3	0.6	1.3	3.5	5.5	6.8	15.9	20.0	24.0	28.4	32.8	38.0
Rwanda	0.1	0.2	0.3	0.4	0.4	0.6	..	2.1	4.5	7.7	8.0	7.0	8.0	8.7
Sao Tome and Principe	4.6	6.3	7.6	10.2	13.3	13.8	14.2	14.6	15.5	16.4	18.8	20.2	21.6	23.0
Senegal	0.4	1.0	1.0	2.1	4.4	4.8	5.6	7.7	10.6	14.5	16.0	17.5	19.2	20.9
Seychelles	7.4	11.0	14.3	14.6	24.3	25.4	35.0	38.4	40.4	..	41.0	43.2	47.1	50.4
Sierra Leone	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.6	0.9	1.3	1.7
Somalia	0.0	0.1	0.1	0.4	1.1	1.1	1.1	1.1	1.1	1.2	..	1.3	1.4	1.5
South Africa	5.3	6.3	6.7	7.0	8.4	7.5	7.6	8.1	8.4	10.0	24.0	34.0	41.0	48.9
South Sudan	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sub-Saharan Africa (all income levels)	0.5	0.6	0.9	1.2	1.6	2.1	3.1	3.8	5.9	7.2	10.2	12.7	14.7	16.9
Sudan	0.0	0.1	0.4	0.5	0.8	1.3	..	8.7	..	..	16.7	17.3	21.0	22.7
Swaziland	0.9	1.3	1.8	2.4	3.2	3.7	3.7	4.1	6.9	8.9	11.0	18.1	20.8	24.7
Tanzania	0.1	0.2	0.2	0.7	0.9	1.1	1.3	1.6	1.9	2.4	2.9	3.5	4.0	4.4
Togo	0.8	0.9	1.0	1.2	1.5	1.8	2.0	2.2	2.4	2.6	3.0	3.5	4.0	4.5
Tunisia	2.8	4.3	5.3	6.5	8.5	9.7	13.0	17.1	27.5	34.1	36.8	39.1	41.4	43.8
Uganda	0.2	0.2	0.4	0.5	0.7	1.7	2.5	3.7	7.9	9.8	12.5	13.0	14.7	16.2
Zambia	0.2	0.2	0.5	1.0	2.0	2.9	4.2	4.9	5.6	6.3	10.0	11.5	13.5	15.4
Zimbabwe	0.4	0.8	4.0	6.4	6.6	8.0	9.8	10.9	11.4	11.4	11.5	15.7	17.1	18.5

Source: World Development Indicators

CELLPHONES SUBSCRIPTION/100

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	0.2	0.5	0.9	2.3	4.6	9.7	17.8	28.0	37.0	42.8	48.1	59.8	61.4	61.9
Benin	0.8	1.7	3.0	3.1	5.8	7.3	12.5	23.6	40.4	54.5	74.4	79.4	83.7	93.3
Botswana	12.7	18.6	18.4	24.3	28.2	30.1	43.4	60.1	76.8	96.0	120.0	146.0	153.8	160.6
Burkina Faso	0.2	0.6	0.9	1.9	3.0	4.7	7.4	13.1	20.6	25.3	36.7	48.0	60.6	66.4
Burundi	0.2	0.5	0.7	0.9	1.3	2.0	2.5	3.2	5.6	10.3	18.2	20.1	22.8	25.0
Cabo Verde	4.5	7.0	9.4	11.4	13.9	17.1	22.6	31.5	57.3	59.8	76.3	80.8	86.0	100.1
Cameroon	0.6	2.6	4.2	6.3	8.7	12.4	16.8	23.8	31.4	39.8	41.9	49.6	60.4	70.4
Central African Republic	0.1	0.3	0.3	1.0	1.5	2.5	2.7	8.3	13.6	20.2	22.5	22.4	25.3	29.5
Chad	0.1	0.3	0.4	0.7	1.3	2.1	4.5	8.6	14.5	20.1	24.5	30.3	35.4	35.6
Comoros	-	-	-	0.4	1.4	2.6	6.0	9.8	14.1	18.4	24.2	30.9	39.5	47.3
Congo. Dem. Rep.	0.0	0.3	1.1	2.4	3.8	5.1	7.9	11.5	16.9	15.6	19.0	24.5	30.6	41.8
Congo. Rep.	2.2	4.7	6.8	9.8	11.1	15.8	25.2	34.3	46.6	73.8	90.4	91.9	98.8	104.8
Cote d'Ivoire	2.9	4.4	6.2	7.6	9.8	13.5	23.0	41.6	57.2	70.9	82.2	89.4	91.2	95.4
Djibouti	0.0	0.4	2.0	3.0	4.5	5.7	5.7	8.7	13.9	15.7	19.9	22.8	24.7	28.0
Equatorial Guinea	1.0	2.8	5.8	7.3	10.6	16.1	19.3	23.5	27.4	29.5	57.4	66.9	68.1	67.5
Eritrea	-	-	-	-	0.4	0.8	1.2	1.6	2.0	2.5	3.2	4.1	5.0	5.6
Ethiopia	0.0	0.0	0.1	0.1	0.2	0.5	1.1	1.5	2.4	4.8	7.9	15.8	22.4	27.3
Gabon	9.8	11.9	21.7	22.8	36.3	53.4	63.6	80.8	87.7	95.4	103.5	148.7	179.5	214.8
Gambia. The	0.5	4.3	7.7	11.1	12.6	17.2	27.3	52.3	73.9	80.6	88.0	80.8	85.2	100.0
Ghana	0.7	1.3	2.0	3.9	8.1	13.4	23.7	33.8	50.1	63.8	71.9	85.3	101.0	108.2
Guinea	0.5	0.6	1.0	1.2	1.7	2.0		19.9	26.7	32.9	36.8	43.5	48.8	63.3
Guinea-Bissau	-	-	-	0.1	2.8	7.0	10.8	20.0	33.0	36.1	42.7	45.1	63.1	74.1
Kenya	0.4	1.9	3.6	4.7	7.3	12.9	20.0	30.1	42.0	48.6	61.0	66.8	71.2	71.8
Lesotho	1.2	3.0	7.3	6.6	10.3	13.0	18.4	24.7	30.1	33.2	49.2	60.7	75.3	86.3
Liberia	0.1	0.1	0.2	1.5	3.0	4.9	8.3	16.0	23.3	28.4	39.7	49.5	56.8	59.4
Madagascar	0.4	0.9	1.0	1.6	1.9	2.8	5.6	11.4	24.3	30.7	36.6	40.0	39.4	36.9

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malawi	0.4	0.5	0.7	1.1	1.8	3.3	4.7	7.7	10.7	17.1	20.8	25.6	29.2	32.3
Mali	0.1	0.2	0.4	2.2	3.5	6.4	12.3	19.9	26.2	32.9	53.2	75.1	98.4	129.1
Mauritania	0.6	4.0	8.6	11.8	17.1	23.7	32.7	42.5	61.1	62.1	76.9	89.5	106.0	102.5
Mauritius	15.2	22.8	28.8	38.1	44.9	53.5	62.6	74.9	83.1	87.1	95.2	103.3	118.3	121.8
Mozambique	0.3	0.8	1.3	2.2	3.5	7.2	10.8	13.9	19.4	25.6	30.1	32.0	34.9	48.0
Namibia	4.3	5.5	7.7	11.3	14.3	22.1	29.7	38.5	49.8	76.1	89.5	99.0	95.0	118.4
Niger	0.0	0.0	0.5	0.7	1.4	2.5	3.5	6.3	12.9	17.0	23.1	28.7	31.4	39.3
Nigeria	0.0	0.2	1.2	2.4	6.7	13.3	22.6	27.4	41.7	48.0	54.7	58.0	66.8	73.3
Rwanda	0.5	0.7	0.9	1.4	1.5	2.4	3.3	6.4	12.9	23.1	32.7	39.9	49.7	56.8
Sao Tome and Principe	-	-	1.4	3.3	5.1	7.7	11.6	18.4	30.0	46.7	57.6	62.8	65.0	64.9
Senegal	2.5	3.0	5.3	7.3	10.2	15.4	25.8	30.5	44.0	54.8	64.4	70.2	83.6	92.9
Seychelles	32.0	45.2	53.4	59.5	65.9	70.9	83.1	90.9	107.5	126.8	131.0	144.8	154.6	152.2
Sierra Leone	0.3	0.6	1.5	2.4				14.3	18.2	20.6	34.8	36.4	37.0	65.7
Somalia	1.1	1.1	1.3	2.5	6.1	5.9	6.3	6.7	6.9	6.8	6.7	18.2	22.6	49.4
South Africa	19.0	24.0	30.1	36.6	44.6	71.7	82.6	86.9	91.2	92.8	99.2	124.1	130.7	144.6
South Sudan											15.1	17.3	21.2	25.3
Sub-Saharan Africa (all income levels)	1.7	2.5	3.6	5.0	7.4	11.9	17.4	23.2	31.9	37.6	44.9	53.1	59.7	65.9
Sudan	0.1	0.4	0.7	1.8	3.4	5.8	14.5	24.7	35.2	44.0	50.7	68.8	74.4	72.9
Swaziland	3.1	5.1	6.3	7.8	13.2	18.1	22.4	33.5	46.1	56.6	60.8	63.2	65.4	71.5
Tanzania	0.3	0.8	1.7	3.5	5.1	7.6	14.0	20.1	30.7	40.0	46.7	55.4	57.0	55.7
Togo	1.0	1.9	3.2	4.6	6.2	7.8	12.5	20.4	25.9	35.6	41.3	41.6	49.9	62.5
Tunisia	1.2	4.0	5.9	19.5	37.6	56.6	72.5	76.7	83.3	93.8	105.4	116.1	119.2	116.8
Uganda	0.5	1.1	1.5	2.9	4.2	4.6	6.8	13.7	26.9	28.6	37.7	47.5	45.0	44.1
Zambia	1.0	1.2	1.3	2.2	4.2	8.3	14.1	21.8	28.4	34.4	41.2	59.9	74.8	71.5
Zimbabwe	2.1	2.5	2.7	2.9	3.4	5.1	6.7	9.6	12.9	31.0	58.9	68.9	91.9	96.3

Source: AGRA's computation using data from World Bank's World Development Indicators

YOUTH (15-34) % (IN TOTAL POPULATION)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	32.1	32.1	32.1	32.2	32.2	32.2	32.2	32.2	32.2	32.3	32.3	32.4	32.5	32.6	32.7
Benin	32.7	32.8	32.9	33.0	33.1	33.3	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.1	34.1
Botswana	37.9	38.4	38.8	39.3	39.7	40.1	40.4	40.7	41.0	41.2	41.4	41.5	41.6	41.7	41.6
Burkina Faso	33.4	33.5	33.6	33.6	33.6	33.7	33.7	33.8	33.8	33.9	33.9	34.0	34.0	34.1	34.1
Burundi	30.9	31.6	32.4	33.2	34.0	34.6	35.2	35.6	35.8	36.0	36.0	35.9	35.7	35.4	35.0
Cabo Verde	34.0	34.4	34.9	35.5	36.0	36.6	37.2	37.8	38.3	38.8	39.2	39.4	39.6	39.6	39.5
Cameroon	33.0	33.3	33.5	33.8	34.0	34.2	34.4	34.6	34.8	34.9	35.0	35.1	35.2	35.3	35.3
Comoros	35.5	35.5	35.5	35.4	35.3	35.1	34.9	34.6	34.3	34.1	33.9	33.7	33.6	33.5	33.5
Congo, Dem. Rep.	31.8	31.9	31.9	32.0	32.1	32.2	32.3	32.5	32.6	32.8	33.0	33.1	33.3	33.4	33.5
Congo, Rep.	35.0	34.9	34.9	34.8	34.6	34.5	34.4	34.3	34.2	34.1	33.9	33.7	33.5	33.2	33.0
Cote d'Ivoire	33.9	33.9	33.9	33.8	33.7	33.7	33.7	33.7	33.7	33.8	33.8	33.9	34.1	34.2	34.3
Djibouti	34.8	35.2	35.6	36.1	36.7	37.2	37.6	38.0	38.3	38.5	38.5	38.3	38.0	37.5	37.1
Equatorial Guinea	29.5	29.4	29.5	29.6	29.9	30.1	30.4	30.7	31.0	31.3	31.7	32.1	32.5	32.8	33.2
Eritrea	33.4	34.2	35.0	35.8	36.4	36.9	37.1	37.3	37.3	37.2	37.0	36.8	36.5	36.2	35.8
Ethiopia	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.9	33.0	33.3	33.6	34.0	34.5	34.9	35.4
Gabon	32.5	32.7	33.0	33.2	33.4	33.7	33.8	34.0	34.2	34.3	34.4	34.4	34.4	34.4	34.4
Gambia, The	34.6	34.6	34.5	34.4	34.2	34.1	34.1	34.1	34.1	34.1	34.1	34.0	34.0	33.9	33.8
Ghana	35.0	35.1	35.1	35.2	35.2	35.3	35.4	35.5	35.6	35.6	35.6	35.6	35.5	35.5	35.4
Guinea	31.7	31.9	32.1	32.3	32.5	32.7	32.8	33.0	33.2	33.4	33.6	33.7	33.9	34.0	34.1
Guinea-Bissau	32.9	33.3	33.9	34.4	34.8	35.0	34.9	34.8	34.5	34.3	34.1	34.1	34.2	34.3	34.4
Kenya	35.9	36.2	36.4	36.6	36.8	36.8	36.8	36.7	36.6	36.4	36.2	36.0	35.8	35.7	35.5
Lesotho	35.1	35.3	35.6	35.9	36.3	36.8	37.4	38.1	38.8	39.5	40.1	40.6	41.0	41.3	41.5
Liberia	33.8	33.9	33.9	33.9	33.9	33.8	33.8	33.6	33.5	33.5	33.4	33.4	33.4	33.5	33.5

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Madagascar	329	328	329	329	330	331	332	333	334	335	336	338	339	340	342
Malawi	326	327	328	329	331	332	334	336	338	340	341	342	343	344	344
Mali	333	335	336	337	337	337	336	335	334	333	331	329	327	325	323
Mauritania	422	345	346	347	347	347	347	347	347	347	346	345	344	343	343
Mauritius	343	337	333	328	325	322	321	320	319	318	317	314	311	308	305
Mozambique	337	336	335	334	333	332	331	330	330	329	329	329	329	330	330
Namibia	362	361	361	361	360	361	362	363	364	366	368	370	372	374	376
Niger	293	292	291	291	290	290	289	289	289	289	289	290	291	291	292
Nigeria	337	338	338	339	339	339	338	337	336	335	334	333	331	330	329
Rwanda	336	339	345	352	358	361	361	358	355	352	352	354	358	362	366
Sao Tome and Principe	354	359	363	366	368	369	371	371	372	371	369	367	363	360	356
Senegal	340	342	345	347	349	350	351	351	351	351	350	349	348	347	346
Seychelles	348	348	351	355	357	358	356	351	346	339	333	328	322	317	312
Sierra Leone	349	351	352	352	352	352	352	351	350	350	349	349	349	349	349
Somalia	310	309	309	309	309	309	310	310	311	312	314	316	318	321	323
South Africa	361	363	365	367	369	371	372	373	373	373	372	371	370	368	366
South Sudan	325	325	326	327	328	329	331	333	334	336	338	340	342	344	345
Sudan	342	342	342	342	341	341	341	341	342	342	342	343	343	344	344
Swaziland	340	345	349	354	359	365	371	378	385	391	396	401	404	407	408
Tanzania	339	340	341	341	342	342	342	342	341	341	340	339	337	336	335
Togo	344	347	350	352	354	355	356	357	357	357	356	355	354	353	351
Uganda	323	324	324	325	326	327	328	329	330	331	332	332	333	334	335
Zambia	353	352	352	351	349	348	347	345	344	342	341	340	339	338	337
Zimbabwe	370	374	377	381	384	387	390	392	394	397	399	402	405	407	409

Source: AGRA's calculations using data from Health, Nutrition and Population Statistics

EMPLOYMENT TO POPULATION RATIO, AGES 15-24, TOTAL (%) (MODELED ILO ESTIMATE)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	48.2	48.2	48.2	48	48	47.8	47.5	47.2	46.9	46.9	47.1	47.1	47.1	47.2
Benin	59.5	58.6	57.6	57.1	57	56.8	56.4	56.3	56.2	56.1	55.9	55.8	55.8	55.8
Botswana	35.6	36.5	46.5	35.8	36.7	37.6	42	40.9	37.5	39.6	39.9	39.7	39.8	39
Burkina Faso	74.4	75.2	74.3	74.4	74.3	74.3	74.7	73.3	73.2	73.1	73	72.8	72.6	72.6
Burundi	62.7	62.4	61.9	61.3	60.7	60.2	59.7	59.1	58.6	58.2	57.9	57.9	57.7	57.7
Cabo Verde	54.2	54	53.9	54	53.9	53.8	53.8	53.7	53.5	53.3	53.3	53.4	53.5	53.5
Cameroon	42.4	41.1	42.9	42.8	43.8	43.8	44.3	44.2	43.8	43.6	44.4	44.4	44.4	44.2
Central African Republic	56.7	56.6	56.6	56.4	56.6	56.5	56.5	56.4	56.2	56.1	55.9	55.8	55.7	54.5
Chad	50.5	50.8	50.7	50.8	51.1	50.6	50.4	50.4	50.4	50.4	50.6	50.3	50.3	50.3
Comoros	35.4	35.5	35.6	35.7	35.8	35.9	35.8	35.8	35.7	35.6	35.4	35.3	35.1	34.8
Congo, Dem. Rep.	39.1	39.2	39.3	39.3	39.3	39.2	39.1	39	38.9	38.7	38.7	38.7	38.6	38.8
Congo, Rep.	40.1	40	40.1	40	40	40.1	40.1	40	40.1	40.2	40.2	40	39.9	39.8
Cote d'Ivoire	48.4	48.4	48.4	48.5	48.6	48.6	48.6	48.5	48.4	48.3	48.2	48.1	48	48.1
Djibouti	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Equatorial Guinea	69.1	69.9	68.7	68.4	68.8	68	67.7	68	68	67.5	67.7	67.9	67.8	66.4
Eritrea	69.6	70	69.5	69.1	69	68.9	68.8	68.9	68.6	69.1	69.1	69.2	69.1	68.9
Ethiopia	70	70.4	71.3	72.1	72.8	73.4	73	72.6	72.1	71.5	71	70.9	70.8	70.5
Gabon	18.2	17.8	17.3	16.9	16.5	16.1	16.2	16.2	16.2	16.2	16.7	16.7	16.5	16.7
Gambia, The	58.5	58.5	58.2	58.5	58.4	58.1	58.1	58	57.8	57.7	57.4	57	57.1	57
Ghana	45.1	43.4	41.4	39.6	37.3	38.9	36.6	36.4	35	35.3	35.6	35.7	35.5	35.1
Guinea	52.4	52.6	52.5	52.3	52.5	52.7	52.7	52.7	52.7	53.1	53.3	53.6	53.7	53.7
Guinea-Bissau	47.4	47.5	47.9	48.4	48.7	48.9	49	49.1	49.1	49.1	49.2	49.3	49.2	49.1
Kenya	36.9	36.1	35.2	34.4	33.7	33	33.1	33.2	33.1	33.1	33.1	33	32.9	32.8
Lesotho	34.7	33.4	34.6	29.8	30.1	28.6	29.7	31.6	29.9	29.4	30.1	29	30.3	29.9

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Liberia	33.3	33.3	33.3	33.3	33.3	33.4	33.4	33.5	33.6	33.5	33.4	33.4	33.5	33.5
Madagascar	73.2	71.3	70.3	69.2	70.6	72	71.5	72.3	73.2	73.7	74.9	74.6	74.7	74.7
Malawi	50.8	52.9	55.3	57.5	59.7	61.7	57.5	53.2	51.5	51.7	51.7	51.7	51.7	51.8
Mali	36.3	36.3	36.3	36.2	36.1	38.8	41.5	43.9	46.6	49.1	52	51.9	51.8	51.6
Mauritania	21.1	21.3	21.4	21.5	21.5	21.8	21.7	22.2	22.4	22.6	22.8	22.8	22.8	22.9
Mauritius	39.8	40.5	38.8	37	33.7	32.4	33.9	33.3	33.7	32.1	31.9	32.7	32.3	32.8
Mozambique	61.2	60.7	59.7	58.6	58.4	58.1	57.9	57.5	57.2	56.9	56.7	56.5	56.4	56.2
Namibia	17.3	18.3	21.3	19.9	20.3	22.1	21.2	24.2	15.8	18.1	19.7	19.9	20.5	21
Niger	49.9	50.2	50.8	51.3	51.8	52.4	52.5	52.6	52.8	52.9	53.1	53.1	53.2	53.3
Nigeria	30.7	30.9	31	31.4	31.6	31.8	31.9	32	32.1	32.1	32.2	32.3	32.4	32.4
Rwanda	75.4	74.3	73.8	73.3	72.9	72.7	72.7	72.8	72.9	73	73.1	72.8	72.4	72
Senegal	57.8	57.7	57.5	57.6	57.5	57.4	57.4	57.3	57.2	57.2	56.9	56.7	56.6	56.6
Sierra Leone	38.4	38.7	38.8	38.9	41.8	42	42.1	42.2	42.2	42.2	42.1	42	41.9	42
Somalia	41.9	41.7	41.5	41.3	41.2	41	40.8	40.6	40.4	40.3	40.1	40.1	40.1	40.1
South Africa	17.1	15.5	15	13.4	13.9	15.4	16.4	16.2	17.1	14.9	13.2	13	12.5	12.2
Sub-Saharan Africa (all income levels)	46.4	46.5	46.7	46.7	47.1	47.4	47.1	47.3	47.1	47	47	47	47.1	47.2
Sudan	27.2	27.3	27.2	27.2	27.2	27.1	27	27	26.9	26.8	26.8	26.8	26.9	26.6
Swaziland	26.1	26	25.9	25.9	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.7	25.9	25.7
Tanzania	74.7	74.8	76.8	76.9	77.6	78.1	75.4	78.8	77.7	77.3	76.4	75.5	75.4	75.3
Togo	58.6	58.6	58.7	59	58.9	59	59.1	59.1	59.1	59.1	59.1	59	58.9	58.9
Tunisia	24.4	24.3	23.6	23.7	23.6	23	23.7	23.3	22.8	21.9	21.9	17.9	21.2	21.7
Uganda	62.2	62.7	61.5	60.7	60.2	59.1	57.1	57.5	56.5	55.7	55.5	55.3	55.1	55.3
Zambia	53.6	51.2	51.7	51.5	52.4	52	51.1	50.9	51.2	50.4	49.7	49.5	50.3	50.4
Zimbabwe	51.4	60	65.4	70.4	75	73.9	72.7	72.4	71.1	69.7	72	73	72.6	72.2

Source: World Bank's World Development Indicators

FERTILIZER CONSUMPTION (KILOGRAMS PER HECTARE OF ARABLE LAND)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Angola	2	2	5	2	4	3	8	5	8	8	10
Benin	16	1	0	0	0	0	0	7	9	5	19
Botswana	..	..	..	..	..	..	..	49	83	29	54
Burundi	1	-	1	4	3	2	2	2	4	6	6
Burkina Faso	-	10	13	15	13	10	10	9	9	11	11
Cameroon	10	8	11	8	9	9	7	7	9	11	10
Congo, Rep.	..	..	3	0	0	0	1	5	1	7	9
Congo, Dem. Rep.	..	0	0	0	0	1	1	1	1	2	1
Cote d'Ivoire	31	29	27	18	23	24	18	15	32	20	25
Eritrea	6	2	0	2	..	3	..	3	0	1	1
Ethiopia	17	6	10	11	11	16	17	18	22	21	24
Gabon	6	4	5	8	8	9	11	12	3	10	17
Gambia, The	..	9	8	10	11	9	4	6	7	10	6
Guinea	1	1	1	1	1	1	1	1	1	4	3
Kenya	27	33	28	34	33	36	33	32	30	45	44
Madagascar	2	2	2	5	2	3	4	2	2	3	2
Malawi	30	31	34	30	37	42	35	31	35	30	40
Mali	..	..	52	16	18	31	22	6	20	22	26
Mauritius	318	299	308	352	258	282	229	228	163	243	224
Mozambique	6	1	2	1	5	3	12	4	8	7	6
Namibia	4	1	3	2	3	2	..	2	4	7	6
Nigeria	5	6	5	7	10	4	6	5	6	4	5
Niger	1	0	0	0	1	0	0	0	0	0	1
Rwanda	..	2	2	3	3	8	9	1	0	0	4
Senegal	12	11	13	10	2	2	2	6	8	8	8
Seychelles	..	24	11	34	11	30	34	52	29	45	116
South Africa	61	55	60	47	62	61	56	60	54	60	62
Sub-Saharan Africa (all income levels)	..	11	13	11	13	13	12	13	14	14	15
Sudan	3	3	5	3	3	4	4	8	11	9	11
Tanzania	4	4	5	6	5	5	5	8	7	8	4
Togo	5	7	3	10	5	6	..	6	9	10	5
Uganda	1	2	1	1	1	1	3	2	2	2	2
Zambia	26	26	30	28	26	32	39	26	29	46	18
Zimbabwe	36	40	23	22	32	27	22	29	34	29	29

Source: World development indicators

FINANCIAL INCLUSION

	ACCOUNT AT A FINANCIAL INSTITUTION (% AGE 15+) [T5]		ACCOUNT AT A FINANCIAL INSTITUTION, FEMALE (% AGE 15+) [W1]		BORROWED FROM A FINANCIAL INSTITUTION (% AGE 15+) [W1]		BORROWED FROM A FINANCIAL INSTITUTION, FEMALE (% AGE 15+) [T5]	
	2011	2014	2011	2014	2011	2014	2011	2014
Angola	39.2	29.3	38.9	7.9	7.3	7.3	2.3	2.3
Benin	10.5	16	9.8	4.2	5.2	5.2	8.9	8.9
Botswana	30.3	49.2	28.4	5.6	4.9	4.9	10.9	10.9
Burkina Faso	13.4	13.4	10.8	3.1	2.9	2.9	3.5	3.5
Burundi	7.2	6.9	5.9	1.7	0.5	0.5	0.9	0.9
Cameroon	14.8	11.4	10.9	4.5	3.4	3.4	1.7	1.7
Central African Republic	3.3	..	3.4	0.9	0.9	0.9	..	..
Chad	9	7.7	6.8	6.2	6	6	1.4	1.4
Comoros	21.7	..	17.9	7.2	5.8	5.8	..	..
Congo, Dem. Rep.	3.7	10.9	2.8	1.5	1.5	1.5	2.3	2.3
Congo, Rep.	10	16.7	7.6	3.2	1.8	1.8	4.9	4.9
Cote d'Ivoire	..	15.1	8.8	4.5	..	..	2.4	2.4
Djibouti	12.3	..	17.2	2.3	3.8	3.8	..	..
Ethiopia	..	21.8	27.1	5.8	..	..	7.6	7.6
Gabon	18.9	30.2	2.9	2.4	1.3	1.3	3.9	3.9
Ghana	29.4	34.6	39.2	9.7	5.8	5.8	8.9	8.9
Guinea	3.7	6.2	16.9	3	1.5	1.5	1.8	1.8
Kenya	42.3	55.2	14.7	6.5	6.8	6.8	12.6	12.6
Lesotho	18.5	..	4.6	2.3	2.7	2.7	..	..
Liberia	18.8	..	16.9	9.2	5.7	5.7	..	..
Madagascar	5.5	5.7	6.9	3.7	1.6	1.6	1.8	1.8
Malawi	16.5	16.1	12.1	7.9	11.7	11.7	7.3	7.3
Mali	8.2	13.3	74.7	14.3	1.9	1.9	1.8	1.8
Mauritania	17.5	20.4	1.5	1.3	7.3	7.3	7.1	7.1
Mauritius	80.1	82.2	26	2.1	9	9	13.2	13.2
Namibia	..	58.1	28.2	8.4	..	..	5.8	5.8
Niger	1.5	3.5	5.5	3.5	1.6	1.6	0.7	0.7
Nigeria	29.7	44.2	12.8	6.1	2	2	4.1	4.1
Rwanda	32.8	38.1	51	8.9	8	8	5.4	5.4
Senegal	5.8	11.9	4.4	1.8	2.5	2.5	3.1	3.1
Sierra Leone	15.3	14.1	27.4	11.5	6.5	6.5	3	3
Somalia	..	7.9	13.8	6.6	..	..	1.4	1.4
South Africa	53.6	68.8	9.2	3.8	6.5	6.5	11.4	11.4
Sudan	6.9	15.3	15.1	8.9	1.8	1.8	3.4	3.4
Swaziland	28.6	..	23.3	6.1	10	10	..	..
Tanzania	17.3	19	37.1	4.9	6.9	6.9	6.4	6.4
Togo	10.2	17.6	0	0	4.3	4.3	4.5	4.5
Uganda	20.5	27.8	0	0	8.6	8.6	13.9	13.9
Zambia	21.4	31.3	0	0	7.8	7.8	4.1	4.1
Zimbabwe	39.7	17.2	0	0	4.2	4.2	3.8	3.8

Source: World Bank's Global Findex (Global Financial Inclusion Database)

GDP PER CAPITA (CURRENT US\$)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	656	621	840	920	1,229	1,707	2,441	3,413	4,596	3,989	4,219	5,159	5,540	5,783	5,936
Benin	339	348	379	464	511	533	557	633	739	713	690	745	751	805	825
Botswana	3,297	3,078	3,007	4,099	4,830	5,294	5,321	5,712	5,660	5,261	6,493	7,894	7,382	7,411	7,757
Burundi	130	128	117	108	122	144	158	163	187	195	220	247	251	267	295
Cabo Verde	1,219	1,249	1,352	1,743	1,952	2,031	2,299	3,130	3,692	3,524	3,413	3,801	3,543	3,684	3,715
Burkina Faso	227	235	261	332	371	407	423	476	571	554	578	670	678	716	720
Central African Republic	251	252	263	298	326	341	365	413	474	465	457	495	479	335	379
Cameroon	583	589	648	791	893	915	965	1,070	1,190	1,163	1,145	1,257	1,220	1,329	1,426
Chad	167	198	222	294	457	664	717	808	938	814	909	1,006	994	1,010	1,054
Comoros	382	406	444	557	629	633	659	731	806	787	777	837	796	842	861
Congo. Rep.	1,030	872	920	1,039	1,348	1,718	2,120	2,233	3,059	2,401	2,920	3,414	3,154	3,167	3,101
Congo. Dem. Rep.	407	154	176	175	196	221	257	286	327	302	330	373	418	445	475
Cote d'Ivoire	664	682	740	905	966	982	1,008	1,133	1,327	1,305	1,311	1,309	1,363	1,540	1,646
Djibouti	763	780	794	824	870	912	976	1,062	1,233	1,459	1,353	1,464	1,575	1,668	1,784
Equatorial Guinea	2,019	2,733	3,277	4,370	7,527	13,613	13,004	15,937	23,458	13,797	16,611	21,943	22,390	20,581	18,389
Eritrea	179	183	170	195	238	226	241	253	256	334	369	440	504	544	590
Ethiopia	125	121	112	120	137	163	195	245	328	382	344	357	472	505	568
Gabon	4,135	3,998	4,132	4,938	5,758	6,857	7,187	8,594	10,459	7,999	9,302	11,186	10,833	10,292	10,067
Gambia. The	637	543	443	361	416	434	442	522	612	553	566	521	509	482	423
Guinea	342	319	326	374	391	307	299	411	438	435	435	454	495	531	550
Guinea-Bissau	291	301	312	350	382	413	407	469	570	532	534	679	576	555	586
Kenya	406	404	398	440	462	524	703	847	926	930	978	998	1,167	1,238	1,338
Lesotho	416	377	348	510	646	711	736	817	827	860	1,089	1,243	1,162	1,035	995
Liberia	183	172	175	131	147	166	178	210	231	302	327	377	414	453	461

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Madagascar	246	279	263	317	246	276	293	379	472	417	414	456	445	463	449
Malawi	154	148	223	198	209	213	234	266	302	345	360	364	267	237	253
Mali	236	249	307	389	421	444	497	561	665	661	674	739	696	726	766
Mauritius	3,861	3,792	3,958	4,623	5,230	5,116	5,455	6,286	7,749	7,082	7,772	8,985	9,111	9,477	10,006
Mozambique	236	217	217	235	279	313	329	411	485	459	422	537	593	598	619
Namibia	2,059	1,836	1,716	2,489	3,298	3,582	3,887	4,201	4,009	4,141	5,174	5,597	5,763	5,615	5,720
Nigeria	378	350	457	510	646	804	1,015	1,131	1,376	1,091	2,311	2,508	2,730	2,966	3,185
Niger	164	171	184	223	240	258	267	302	367	353	360	388	405	431	441
Rwanda	207	191	187	202	226	274	322	380	469	504	526	575	630	639	652
Sao Tome and Principe	550	540	586	687	734	797	851	883	1,090	1,134	1,128	1,355	1,400	1,610	1,692
Senegal	475	482	513	643	732	773	808	948	1,094	1,018	999	1,083	1,023	1,047	1,071
Sierra Leone	154	251	276	291	290	318	357	399	453	435	448	500	634	809	788
Seychelles	7,579	7,663	8,334	8,523	10,174	11,087	12,014	12,156	11,123	9,707	10,805	12,189	12,845	15,696	15,359
South Africa	3,099	2,706	2,535	3,799	4,892	5,444	5,660	6,154	5,812	5,912	7,390	8,081	7,592	6,886	6,478
South Sudan	..	..	..	..	..	..	..	..	1,705	1,285	1,582	1,717	957	1,045	1,113
Sub-Saharan Africa (all income levels)	545	493	514	641	776	889	1,010	1,146	1,273	1,183	1,542	1,687	1,722	1,760	1,796
Sudan	356	373	407	472	557	669	879	1,094	1,263	1,198	1,440	1,618	1,685	1,751	1,904
Swaziland	1,433	1,255	1,131	1,704	2,211	2,339	2,636	2,691	2,617	2,679	2,957	3,141	3,055	2,825	2,682
Tanzania	308	306	311	326	350	449	480	538	666	674	712	746	836	927	998
Togo	266	267	288	318	359	382	387	432	528	515	503	580	589	636	646
Uganda	255	233	238	236	286	314	335	400	448	517	553	531	653	657	677
Zambia	356	395	395	450	557	726	1,083	1,161	1,438	1,195	1,533	1,741	1,772	1,845	1,802
Zimbabwe	535	538	502	452	457	453	428	415	345	633	723	820	909	953	936

Source: World Development Indicators

CEREAL PRODUCTION (METRIC TONS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	519,635	601,120	733,819	736,604	742,403	914,886	723,305	780,963	754,711	1,056,844	1,181,944	1,412,826	509,705	1,675,342
Benin	993,383	942,790	926,470	1,042,770	1,109,465	1,151,853	933,443	1,020,319	1,367,099	1,347,514	1,333,436	1,544,233	1,533,872	1,691,862
Botswana	24,776	23,080	34,674	35,930	26,668	36,841	43,532	31,312	36,782	54,430	50,345	79,093	52,800	43,800
Burundi	254,735	283,645	292,395	282,588	290,589	296,951	296,904	302,211	298,181	310,616	324,034	339,316	257,348	254,753
Cabo Verde	24,341	19,549	5,067	12,154	10,000	3,648	4,116	3,068	11,584	7,383	7,047	5,569	6,001	5,785
Burkina Faso	2,286,227	3,109,092	3,119,050	3,564,281	2,901,973	3,649,533	3,680,674	3,108,811	4,358,518	3,626,638	4,560,546	3,666,404	4,898,544	4,869,722
Central African Republic	165,600	182,600	193,300	201,800	209,900	237,057	227,000	236,570	235,527	250,667	249,000	259,000	260,600	266,300
Cameroon	1,274,818	1,356,037	1,498,731	1,586,885	1,684,385	1,938,107	2,231,725	2,367,288	2,473,993	2,906,195	3,011,835	2,988,076	3,132,594	3,088,980
Chad	930,038	1,321,294	1,212,390	1,618,139	1,212,904	1,853,396	1,913,311	1,972,036	2,018,649	2,087,844	2,149,500	1,553,289	3,162,000	2,561,000
Comoros	21,403	22,769	22,815	24,587	25,832	22,087	25,122	21,850	24,581	27,543	30,483	33,300	34,200	36,800
Congo. Rep.	9,953	18,266	18,546	23,150	23,755	22,297	21,700	21,398	22,950	23,900	24,950	27,050	29,000	31,650
Congo. Dem. Rep.	1,572,045	1,546,061	1,520,470	1,521,340	1,522,295	1,523,240	1,524,145	1,525,030	1,525,860	1,526,862	1,528,274	1,529,418	1,790,450	1,793,750
Cote d'Ivoire	1,285,904	1,307,824	1,330,096	1,334,280	1,378,128	1,424,903	1,441,779	1,224,570	1,408,447	1,428,840	1,961,771	1,607,414	2,332,512	2,712,481
Eritrea	124,549	219,052	54,530	105,944	108,798	335,563	377,202	461,996	105,788	226,899	243,594	258,135	275,000	265,000
Ethiopia	8,019,830	9,585,753	9,000,335	9,532,780	10,140,082	12,749,986	12,672,350	12,235,743	13,259,750	15,534,229	17,761,202	18,809,963	19,651,152	22,706,881
Gabon	26,900	26,121	24,927	32,197	32,220	35,994	33,208	34,100	36,084	41,424	42,989	45,186	45,700	46,700
Gambia. The	176,100	200,433	139,175	204,775	223,852	205,572	215,263	150,540	235,157	310,964	363,528	183,189	224,260	227,653
Guinea	1,800,810	1,720,945	1,845,827	1,983,588	2,136,216	2,290,039	2,445,151	2,601,213	2,740,273	2,631,419	2,742,962	2,947,000	3,240,000	3,409,000
Guinea-Bissau	177,884	161,681	151,444	143,411	171,375	212,538	225,259	183,863	216,998	227,517	256,583	218,170	248,280	264,189
Kenya	2,591,351	3,370,458	3,045,518	3,351,497	3,199,022	3,585,080	3,937,106	3,614,399	2,866,388	2,898,900	4,347,437	4,058,681	4,482,694	4,307,469
Lesotho	149,625	254,714	149,816	116,440	109,217	111,688	118,736	72,685	74,020	75,442	173,193	103,965	30,180	107,025
Liberia	183,400	145,000	110,000	100,000	110,000	154,800	164,000	231,800	295,150	293,000	296,090	298,000	291,000	238,000
Madagascar	2,660,170	2,853,015	2,786,892	3,129,927	3,392,726	3,798,104	3,904,674	4,024,722	4,355,509	4,978,212	5,162,918	4,740,084	5,009,947	3,997,926

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malawi	2,631,034	1,865,675	1,710,577	2,143,179	1,717,993	1,302,379	2,786,281	3,440,138	2,845,840	3,807,971	3,610,283	3,924,971	3,832,659	3,892,310
Mali	2,309,976	2,583,937	2,531,977	3,402,381	2,845,036	3,398,787	3,693,413	3,885,587	4,814,957	6,334,619	6,409,651	5,777,891	6,674,591	5,736,252
Mauritius	623	389	295	177	369	475	452	1,021	460	112	328	636	1,244	1,280
Mozambique	1,587,548	1,507,208	1,361,336	1,512,504	1,327,853	1,143,200	1,751,507	1,889,656	2,216,414	2,239,000	2,802,582	2,931,941	1,630,990	2,238,500
Namibia	120,979	106,919	99,949	97,380	127,535	129,138	182,684	116,183	112,580	111,738	136,500	117,000	165,800	87,000
Nigeria	21,370,000	20,090,000	21,373,000	22,736,000	24,321,000	26,031,000	28,864,000	27,171,000	30,209,000	21,267,630	24,656,270	20,702,585	21,435,636	26,970,000
Niger	2,127,609	3,161,879	3,243,543	3,568,096	2,730,417	3,669,196	4,046,853	3,857,103	4,803,820	3,451,306	5,203,234	3,762,353	5,319,260	4,347,100
Rwanda	239,705	285,527	308,447	297,669	318,944	413,314	370,523	356,192	465,819	621,861	745,579	857,282	880,725	998,200
Sao Tome and Principe	2230	2500	2550	2600	2650	2957	2700	3000	2800	2000	1600	1085	917	776
Senegal	1,026,985	1,023,420	786,276	1,452,857	1,054,623	1,434,084	989,204	773,307	1,744,081	1,871,995	1,769,196	1,101,010	1,664,960	1,318,702
Sierra Leone	222,472	334,600	466,479	496,093	618,853	824,691	1,158,933	656,252	759,668	985,555	1,155,517	1,214,895	1,261,354	1,376,481
Somalia	392,408	429,062	441,871	402,751	366,470	361,182	266,815	196,970	192,634	229,641	356,007	118,913	385,345	383,243
South Africa	14,527,340	10,702,651	13,044,712	11,816,396	12,024,567	14,178,936	9,443,591	9,506,948	15,338,396	14,576,685	14,699,306	12,918,562	14,266,240	14,872,900
Sub-Saharan Africa (all income levels)	87,302,155	88,998,452	90,843,566	97,391,823	97,076,413	108,909,032	111,418,506	109,376,667	123,849,722	118,918,023	133,628,540	126,262,809	132,202,416	143,383,547
Sudan	3,259,000	5,339,000	3,714,000	6,372,748	3,516,000	6,193,000	5,806,000	6,691,000	5,269,000	5,552,195	3,562,350	5,598,000	2,660,000	5,947,000
Swaziland	113,794	83,279	68,248	69,896	68,699	75,210	67,730	26,907	60,838	57,905	68,925	86,026	77,150	83,825
Tanzania	3,626,771	4,540,698	6,372,648	4,114,083	6,706,622	5,394,302	5,745,560	6,402,080	7,651,930	5,807,305	8,643,198	7,955,143	8,119,819	8,867,188
Togo	740,520	814,714	801,479	807,299	799,023	833,289	885,517	877,647	935,210	1,061,456	1,045,866	1,057,893	1,230,490	1,210,365
Uganda	2,112,000	2,309,000	2,368,000	2,508,000	2,274,000	2,526,000	2,557,029	2,632,381	3,128,909	3,204,248	3,270,364	3,536,000	3,546,000	3,509,000
Zambia	1,208,056	950,260	754,966	1,366,060	1,380,713	1,067,154	1,603,978	1,537,325	1,396,247	2,199,691	3,100,624	3,373,681	3,203,354	2,900,044
Zimbabwe	2,519,351	1,845,767	908,945	1,329,204	2,168,785	1,256,756	1,948,186	1,273,152	691,669	882,956	1,405,124	1,698,627	1,160,450	998,450

Source: World Development Indicators

CEREAL YIELD (KG PER HECTARE)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	564	585	627	646	491	583	446	464	653	571	629	662	552	815
Benin	1,102	1,069	945	1,149	1,147	1,136	1,125	1,014	1,248	1,271	1,201	1,518	1,336	1,433
Botswana	131	554	359	1,213	274	443	372	639	361	359	374	420	325	300
Burundi	1,224	1,283	1,309	1,262	1,328	1,344	1,277	1,345	1,281	1,296	1,299	1,309	1,102	1,176
Cabo Verde	795	637	148	379	385	243	141	110	337	231	220	178	196	182
Burkina Faso	859	968	943	996	941	1,127	1,204	936	1,040	1,002	1,063	995	1,203	1,157
Central African Republic	969	1,011	1,048	1,019	991	962	860	951	947	948	1,447	1,522	1,684	1,716
Cameroon	1,764	1,709	1,683	1,620	1,563	1,727	1,810	1,676	1,678	1,765	1,669	1,681	1,597	1,652
Chad	528	635	671	790	671	762	750	763	812	830	843	772	856	1,007
Comoros	1,197	1,279	1,169	1,197	1,255	1,285	1,322	1,380	1,291	1,403	1,418	1,411	1,390	1,443
Congo, Rep	767	777	777	814	822	752	778	766	771	791	780	814	848	889
Congo, Dem Rep	787	787	772	772	772	772	772	772	772	772	772	744	770	767
Cote d'Ivoire	1,682	1,720	1,751	1,827	1,854	1,836	1,918	1,569	1,735	1,711	2,270	1,882	2,766	3,125
Djibouti	1,833	1,714	1,667	1,667	1,833	1,500	1,667	1,857	1,500	1,222	1,444	2,000	2,000	2,000
Eritrea	377	637	158	261	275	758	798	938	252	500	536	578	608	602
Ethiopia	1,116	1,198	1,354	1,123	1,163	1,361	1,563	1,439	1,450	1,682	1,833	1,962	2,047	2,217
Gabon	1,630	1,538	1,442	1,588	1,604	1,600	1,584	1,666	1,603	1,658	1,687	1,698	1,685	1,691
Gambia, The	1,296	1,283	960	1,198	1,171	1,040	1,026	800	977	1,049	1,127	869	910	958
Guinea	1,492	1,483	1,487	1,485	1,491	1,496	1,502	1,514	1,464	1,468	1,459	1,532	1,513	1,512
Guinea-Bissau	1,097	1,005	1,067	1,099	1,275	1,534	1,675	1,346	1,487	1,627	1,618	1,367	1,481	1,330
Kenya	1,375	1,640	1,488	1,594	1,806	1,646	1,647	1,773	1,418	1,243	1,710	1,515	1,657	1,727
Lesotho	718	995	737	611	597	690	522	436	390	421	909	664	239	810

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Liberia	1,278	1,115	917	833	917	1,290	1,282	1,449	1,553	1,183	1,179	1,183	1,184	1,035
Madagascar	1,890	2,020	1,967	2,202	2,354	2,516	2,565	2,619	2,810	2,717	2,698	2,674	2,700	2,522
Malawi	1,675	1,175	1,046	1,209	1,021	778	1,445	2,467	1,599	2,124	1,907	2,094	2,087	2,069
Mali	1,006	986	792	979	864	1,090	1,125	1,101	1,398	1,675	1,716	996	1,527	1,567
Mauritius	8,900	7,204	7,763	6,556	6,474	7,540	7,793	9,454	7,541	8,000	6,833	3,902	3,390	3,224
Mozambique	868	880	697	818	774	529	782	885	763	884	1,028	1,041	608	818
Namibia	374	387	413	328	418	466	609	481	496	365	435	389	551	315
Nigeria	1,171	1,234	1,255	1,309	1,373	1,422	1,507	1,400	1,598	1,531	1,528	1,338	1,401	1,537
Niger	290	401	412	442	347	437	451	426	488	380	490	378	519	424
Rwanda	848	914	1,027	944	959	1,184	1,138	1,014	1,278	1,748	1,930	2,106	2,169	2,172
Sao Tome and Principe	2,230	2,174	2,107	2,131	2,146	2,385	2,455	2,308	2,154	1,538	1,333	834	706	575
Senegal	879	887	651	1,090	973	1,200	879	722	1,172	1,134	1,196	966	1,310	1,180
Sierra Leone	1,078	998	996	1,012	1,011	1,118	1,348	1,290	1,350	1,658	1,771	1,702	1,553	1,802
Somalia	733	813	769	687	580	560	506	606	465	416	575	457	1,190	964
South Africa	2,755	2,424	2,772	2,537	2,783	3,314	3,159	2,793	4,062	4,413	4,143	4,024	3,689	3,725
Sub-Saharan Africa (all income levels)	1,130	1,129	1,135	1,112	1,175	1,166	1,239	1,214	1,299	1,311	1,401	1,303	1,412	1,433
Sudan	505	626	487	644	657	504	645	729	567	587	452	564	472	589
Swaziland	1,628	1,411	986	1,013	1,237	1,307	1,414	556	989	1,077	1,226	1,243	1,083	1,153
Tanzania	1,442	2,047	1,903	860	1,371	1,102	1,327	1,427	1,334	1,110	1,648	1,390	1,315	1,418
Togo	1,058	1,150	1,131	1,155	1,095	1,133	1,131	1,122	1,144	1,243	1,187	1,226	1,233	1,258
Uganda	1,539	1,641	1,639	1,678	1,468	1,574	1,523	1,526	2,056	2,038	1,978	2,078	2,029	2,143
Zambia	1,682	1,402	1,419	1,702	1,814	1,899	1,816	2,253	2,180	2,066	2,534	2,731	2,689	2,532
Zimbabwe	1,404	1,160	547	803	1,075	588	851	653	309	424	743	794	806	724

Source: World Development Indicators

CROP PRODUCTION INDEX (2004-2006 = 100)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Angola	53	63	74	81	93	101	105	120	133	179	189	210	166	236
Benin	89	89	98	102	107	102	91	96	114	112	116	128	134	149
Botswana	92	98	103	105	109	99	91	75	83	80	90	105	99	96
Burundi	86	94	106	95	107	91	101	93	101	99	107	100	92	129
Cabo Verde	105	106	98	106	104	97	99	99	105	100	98	101	105	100
Burkina Faso	60	84	88	98	87	105	108	77	119	99	121	102	128	142
Central African Republic	100	104	101	95	99	100	102	107	110	115	112	117	119	122
Cameroon	77	78	80	83	86	104	111	117	121	131	145	148	156	161
Chad	72	92	89	94	93	106	101	91	99	100	101	89	124	116
Comoros	95	97	96	99	103	95	102	102	99	107	113	109	112	113
Congo, Rep.	86	88	89	91	96	100	104	107	112	115	113	114	123	127
Congo, Dem. Rep.	102	100	98	99	100	100	100	101	102	103	105	109	115	116
Cote d'Ivoire	101	94	95	94	96	100	104	99	106	99	107	110	120	124
Djibouti	103	105	109	104	90	107	103	108	102	119	132	130	138	137
Equatorial Guinea	93	94	91	95	96	100	103	112	109	114	111	113	116	117
Eritrea	69	90	55	69	69	115	116	128	58	87	89	92	96	94
Ethiopia	75	81	79	82	89	106	105	108	113	126	137	146	158	157
Gabon	98	95	97	97	98	100	102	105	110	113	118	119	122	123
Gambia, The	101	111	64	85	109	92	98	64	101	123	141	84	108	97
Guinea	85	84	89	93	98	101	101	105	109	108	111	115	121	121
Guinea-Bissau	87	89	90	89	97	99	104	103	119	123	122	128	139	143
Kenya	77	87	87	88	87	105	109	109	109	112	126	115	126	127
Lesotho	113	146	108	95	101	98	101	91	91	83	126	107	85	113
Liberia	100	98	98	96	101	105	94	109	104	93	96	99	99	96
Madagascar	83	86	84	87	92	103	105	108	110	121	126	126	132	117

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malawi	99	107	82	95	99	84	118	134	135	158	156	164	171	182
Mali	69	91	84	108	96	104	100	103	114	134	138	132	148	139
Mauritius	102	116	97	104	106	99	96	86	91	95	90	88	84	82
Mozambique	77	85	90	97	100	93	107	111	110	122	158	168	158	164
Namibia	77	79	79	84	97	95	109	103	102	100	109	109	116	107
Nigeria	79	79	83	88	95	100	105	96	103	88	103	94	105	109
Niger	64	82	95	103	82	103	115	122	161	119	180	153	173	160
Rwanda	84	81	101	94	93	101	106	105	115	139	147	160	171	175
Sao Tome and Principe	97	102	104	103	97	100	102	103	102	104	102	100	101	111
Senegal	111	103	61	95	95	114	92	80	135	148	163	103	131	125
Sierra Leone	42	49	58	84	93	92	115	98	104	129	148	154	160	170
Seychelles	110	112	109	106	107	95	98	95	91	87	84	90	96	99
Somalia	87	93	99	96	100	103	97	92	91	102	115	97	122	124
South Africa	103	94	103	99	101	106	94	93	113	109	108	108	112	115
Sub-Saharan Africa (all income levels)	83	85	88	92	96	100	104	101	109	107	117	117	124	128
Sudan	73	86	84	98	94	101	105	103	100	106	93	110	98	123
Swaziland	89	88	95	93	98	103	98	96	99	100	102	104	110	111
Tanzania	66	72	95	80	97	97	107	110	109	111	131	142	151	157
Togo	91	100	101	102	105	95	100	102	110	119	121	135	132	117
Uganda	93	99	102	103	102	100	98	101	105	106	109	111	107	108
Zambia	72	70	70	87	94	99	108	109	106	136	154	168	173	158
Zimbabwe	157	141	107	107	115	88	96	94	88	82	100	106	107	108

Source: World Development Indicators

RESEARCHERS, TOTAL (FTES PER MILLION POPULATION)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Benin	18.6	18.5	17.1	16.1	14.9	14.3	14.8	14.6	14.6	16.9	16.8	17.1
Botswana	38.5	41	43.5	46	46.8	49.1	50.1	57.7	50.1	52.5	54.5	61
Burkina Faso	17	16.5	16.7	16.9	17	17.3	17.4	16.4	15.9	14.1	13.6	12.8
Burundi	11.1	11.2	11.4	9.2	9.6	10	11	12.1	12.6	13	14.3	15.4
Cabo Verde										46.7	46.4	41.9
Central African Rep.										27.4	26.4	29.9
Chad										8.5	9.7	10.7
Congo, Dem. Rep.										5.1	5.6	6.1
Congo, Rep.	39.9	35.1	33.6	31.9	30.7	29.8	29.6	27.2	27.2	25.3	26.2	25.1
Cote d'Ivoire	8.6	7.4	6.9	6.7	6.5	6.4	6.4	6.4	6.5	6.6	6.8	6.5
Eritrea	20.3	18.5	19.4	16.1	15.8	19.5	22.4	23.4	21.6	22.5	21.1	21.6
Ethiopia	11.3	13.2	14.8	15.9	16	16.4	16.7	18.2	17.7	17.7	19.8	22.1
Gabon	29.8	28.6	28.2	31	32.2	34.3	36	33.6	37.6	39.3	34.9	27.8
Gambia, The	40.4	43.6	40.5	40.6	39.2	36.8	34.5	32.6	30.7	31.3	34.8	37.1
Ghana	24.5	23.6	20.4	20.8	21.3	21.1	20.7	21.1	21.4	22.1	22.6	24.3
Guinea	28.5	26.4	26.2	23	24.6	23.8	24.3	24.3	24.1	26.5	26.2	25.9
Guinea-Bissau										7.4	7.3	5.8
Kenya	28.2	28.1	28.8	27.5	27.3	27	26.6	26.1	26.3	27	27.1	27.6
Lesotho	13.7	14.5	15.4	16.2	17.1	17.9	18.9	19.9	19.7	19.4	20.1	18.7
Liberia										4.9	7.7	10.9
Madagascar	12.5	12.7	11.8	11.1	10.7	10.7	10.6	10.2	9.7	9.1	9.1	9.1
Malawi	13.5	12.5	11.6	10.3	9.7	9.4	8.9	8.5	8.2	8.9	10	10.6
Mali	20.4	21.7	26.4	25.7	23.9	21.5	17.4	18.1	22	19	19.2	19.4
Mauritania		22.4	22.4	21.9	22.1	22.7	23	23.4	21.5	14.5	15.8	17.4
Mauritius	118.2	121.2	119.6	122.5	122.5	133.2	133.5	127	127.7	113.8	110	115.3
Mozambique					8.2	9.6	10.5	11.1	11.5	11.6	11.7	13.1
Namibia		37.1	34.4	31.5	38.7	30.5	31.4	32.7	36.8	36.4	38.2	38.4
Nigeria	10.6	10.5	10.4	10.5	10.9	11.4	11.5	11.7	13.6	14.6	15.2	16.5
Rwanda						12.9	12.7	12.9	12.5	13.9	15.3	16.5
Senegal	14	13.8	13.1	13.2	14.5	13.6	12.7	12.1	11.4	9.2	8	8.8
Sierra Leone		11.3	11.1	10.9	8.9	9	9.5	10	10.4	13.3	13.8	13.6
South Africa	21.8	20.3	18.6	17.4	16.5	16.8	16.6	16.7	15.9	15.4	14.9	14.8
Sudan	21	22.7	23.4	24	24.8	26	24.6	24.4	23.2	21.8	20.9	21
Swaziland										23.4	22.4	22.5
Tanzania	16.2	17.9	17.8	17.8	17.9	17.7	17.5	16.9	16.3	15.7	15.4	17.6
Togo	19.8	18.7	16.4	15.4	14.7	13.7	13.3	13.9	11.6	13.6	17	18.6
Uganda	10.5	10	9.1	9.1	8.3	8.6	9.5	10	10	10.1	9.6	10.3
Zambia	16.7	14.5	14.5	14.1	13.5	13.8	13.6	15.9	18.1	18.2	18.1	17.3
Zimbabwe	12.6	11.7	11	10.9	10.7	10.4	10.1	9.4	12.3	13.8	13.4	13.9

RESEARCHERS, TOTAL (FTES)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Benin	121.3	124.2	118.6	115.5	110.2	109.5	116.6	118.2	121.6	145.7	148.6	155.7
Botswana	67.6	73.2	78.7	84.1	86.6	92.2	95.1	111.3	97.9	104.1	109.4	123.8
Burkina Faso	209.4	208.9	217.0	226.5	234.8	245.1	253.7	246.9	246.4	224.6	223.3	218.0
Burundi	70.8	72.6	76.0	62.8	67.3	72.3	82.1	93.2	100.1	106.4	120.1	132.3
Cabo Verde										23.0	23.0	21.0
Central African Rep.										118.2	116.1	134.0
Chad										93.3	108.9	123.3
Congo, Dem. Rep.										329.4	369.7	412.4
Congo, Rep.	125.0	112.8	110.5	107.4	105.8	105.2	107.4	101.3	104.5	99.9	105.8	104.0
Cote d'Ivoire	143.0	125.8	117.9	117.5	115.2	116.1	117.8	120.1	122.6	127.6	134.6	130.6
Eritrea	74.4	70.6	77.1	66.9	68.2	87.6	104.3	112.1	106.9	114.8	110.8	116.8
Ethiopia	743.8	889.2	1 022.5	1 122.2	1 159.3	1 214.4	1 268.1	1 413.2	1 402.5	1 440.6	1 638.3	1 876.6
Gabon	36.9	36.2	36.4	40.9	43.3	47.0	50.3	47.8	54.5	58.2	52.5	42.6
Gambia, The	52.4	58.2	55.7	57.6	57.2	55.4	53.3	51.9	50.2	52.7	60.2	65.9
Ghana	469.6	463.3	409.8	429.6	449.6	455.9	459.4	478.5	499.0	526.1	550.9	607.0
Guinea	237.5	223.4	225.7	200.7	218.6	214.8	223.4	227.5	230.0	259.1	261.5	265.0
Guinea-Bissau										11.0	11.0	9.0
Kenya	880.8	902.9	949.4	931.2	947.6	963.4	972.4	978.9	1 010.1	1 066.2	1 096.3	1 147.2
Lesotho	27.0	28.9	30.9	32.9	34.9	37.0	39.4	41.9	41.8	41.7	43.7	41.1
Liberia										18.9	30.9	45.1
Madagascar	192.1	201.1	192.7	186.6	185.2	192.0	194.5	194.4	190.4	184.0	188.6	193.1
Malawi	151.4	143.7	137.1	125.7	121.3	120.0	118.0	115.2	115.3	128.7	148.3	162.3
Mali	231.0	252.3	316.7	317.7	305.0	292.7	236.3	253.6	318.7	283.9	294.5	307.0
Mauritania		61.0	62.8	63.2	65.5	69.0	71.9	75.3	70.7	48.9	54.8	61.8
Mauritius	141.4	146.4	146.0	151.1	152.6	167.4	169.1	162.0	163.9	147.0	142.9	150.7
Mozambique					166.0	198.6	224.1	242.0	256.9	266.3	274.4	313.6
Namibia		71.9	67.9	63.2	79.0	63.5	66.4	70.6	81.0	81.7	87.2	89.4
Nigeria	1 310.2	1 325.1	1 344.6	1 401.0	1 480.8	1 587.5	1 644.4	1 725.4	2 051.0	2 260.5	2 400.6	2 687.6
Rwanda						118.5	119.7	125.4	124.9	142.9	162.8	180.4
Senegal	133.3	134.9	131.2	135.4	153.2	147.8	141.6	139.3	134.3	110.9	99.3	112.2
Sierra Leone		48.8	49.8	51.5	44.2	46.3	50.6	54.6	58.6	76.2	81.1	81.7
South Africa	977.4	923.0	857.8	813.0	778.5	802.0	801.9	813.5	783.9	767.3	746.3	746.3
Sudan	717.3	795.8	837.0	877.7	928.9	997.6	970.0	984.7	962.5	925.3	909.8	939.1
Swaziland										27.3	26.6	27.1
Tanzania	552.6	625.1	638.8	656.7	677.0	686.8	697.1	694.5	689.5	683.6	692.5	814.8
Togo	94.8	92.1	82.8	79.5	77.6	74.2	73.6	78.9	67.1	80.5	102.2	114.7
Uganda	254.1	249.2	235.9	241.3	229.6	243.1	280.5	302.8	312.5	328.0	322.1	353.9
Zambia	170.8	152.0	155.0	153.8	151.4	157.8	160.0	191.4	223.9	231.6	236.6	233.1
Zimbabwe	157.1	147.1	138.3	138.0	135.4	130.5	126.9	117.8	153.6	171.7	168.6	176.7

GOVERNMENT AGRICULTURE EXPENDITURE (% OF TOTAL GOVERNMENT EXPENDITURE)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Angola	0.8	1.3	0.5	0.9	1.1	1.7	1.7	2.8	2.3	2	1.6	1.3	1	1.1	0.8
Benin	8	4.1	5.3	5.5	5.3	6.4	7.5	6.3	5.7	7.1	5.9	4.8	6.2	6.1	8
Botswana	3.9	4.1	4.1	3.9	3.1	4.5	3.7	3.4	2.9	2.4	3.4	2.7	2.9	2.1	2.1
Burkina Faso	11.1	9.7	10.1	8.9	8.9	8.5	9.5	12.6	11.3	10.8	8.7	9.7	11.3	9	9.6
Burundi	1.5	1.4	1.9	1.5	3.1	3.5	6.5	4.3	3.4	2.6	2.2	6.2	5	4.4	3.9
Cameroon	2.6	3.1	3	3.3	3.7	3.8	4	4.3	4.6	4.8	5.2	5.5	5.9	6.2	6.6
Cape Verde			3.7	3.4	3.2	2.9	3.1	2.8	2.6	2.8	2.7	2.7	2.7	2.6	2.6
Central African Republic	5	3.1	2.8	3.5	3.3	1.7	1.3	1.2	1	1.7	2.6	2.7	4	4.1	5.3
Chad			5.5	5.7	4.7	3.9	7.8	5.5	5.6	5.8	5.9	6.1	6.2	6.4	6.5
Congo, Dem. Rep.	3.3	1	0.8	1.9	0.8	0.7	1.1	1.8	2	3.8	2.4	2.5	5	2.7	7.2
Congo, Rep.	0.5	0.6	0.6	1.1	1.4	1.9	1.7	1.6	1.5	1.4	1.8	2.4	1.4	1.4	1.4
Côte d'Ivoire	2.8	2.9	2.9	2.9	2.9	2.2	2.7	2.4	2.3	2.7	3	3.3	5.9	5	5.3
Djibouti			0.6	0.7	0.8	0.8	0.8	0.7	0.7	0.6	0.7	1	1	0.9	0.9
Equatorial Guinea								1.7	0.8	0.8					
Eritrea	5.5	5.1	5.1	4.4	4.6	4.3	5.9	6.1	6	6.6	5.6	5.1	5.1	4.9	4.7
Ethiopia	5.8	8.1	10.2	12.1	13.9	16.5	18.2	16.3	15.5	18.4	11.1	10	10.9	9.1	8.2
Gambia	7.2	7.1	7.1	7	7	6.9	5.7	7.3	6.4	6	5.9	9.6	3.7	3.5	3.3
Ghana	2.4	1.2	1.4	1.4	1.8	2.6	2.2	2.5	3.5	2.5	2.7	2.9	2.9	3.4	3.6
Guinea			11.8	11.2	9.9	7.1	7.5	10.9	8.6	6.4	4.4	7.2	7.3	6.7	6.1
Guinea-Bissau	1.8	1.5	1.5	1.1	1.4	1.1	1.3	1.2	1.1	1	1	0.9	0.8	0.8	0.7
Kenya	5.5	4.8	5	4.6	4.2	3.9	2.8	3.4	3.2	3.9	4.1	4.3	4.1	3.4	2.7
Lesotho	3.7	4.9	3.8	4.2	4	3.8	3.2	2.7	2.4	2.1	1.9	1.8	1.9	1.7	1.7

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Liberia	2	1.9	1.8	1.7	1.5	1.3	1.5	3.4	3.4	7.2	8.2	6.7	8.2	9.1	10.5
Madagascar	5.6	6.1	4.3	3.5	3.3	5	3.4	3.6	16.3	25.1	10.5	10.6	8.5	9.8	6.1
Malawi	5.2	5	7.3	4.1	4.4	7	11.7	14.2	19.6	28.9	15.9	18.7	11.4	14.1	23.4
Mali	8.9	12.8	8.9	9.6	11.4	15.5	10.6	10.9	12.5	10	11.8	6.6	6.4	6.3	5.4
Mauritius	4.4	3.6	3.5	3.1	3	3.1	2.9	2.1	2	3.5	3.7	2.3	2.3	2.4	2.4
Mozambique	3	2.2	6.2	5.8	7.6	7.7	5.9	4.7	5.5	4.6	4.2	3.2	2.9	12.5	13.6
Namibia	5.6	5.3	5.2	5	4	6.1	4.6	4.2	3.8	3	7.1	6.4	5.7	4.4	5
Niger	12.4	15.8	16.6	18.7	24.3	20.2	16.1	18.4	7.9	5.4	7.4	14.8	7.8	8.6	9.2
Nigeria	2.9	3.2	3.5	1.9	3.1	3.4	4.1	3.8	3.1	3.6	3.3	2.9	3.3	3.1	3.1
Rwanda			1.8	2.1	2.4	2.8	3.3	3.4	4.4	3.1	3	6.9	7.4	7.6	9.1
Sao Tome and Principe			16.2	5.4	3.1	4	4.4	5.9	6.2	6.5	6.9	7.2	7.6	8	8.4
Senegal	7.5	4.7	7	7.2	4.9	7.9	7.2	8.9	6.4	9.6	7.6	7.4	9.1	6	7.8
Seychelles	1.6	1.7	1.7	1.8	2.2	1.7	1.3	1.3	0.9	1	1.2	1.8	0.9	1.4	1.4
Sierra Leone	0.9	1.1	1	1.2	1.1	0.9	1.2	2.4	3.6	5.8	8.9	7.5	5.9	6.2	6.6
South Africa	1.5	1.8	2	2.1	2.1	2.3	2.1	2.4	2	1.8	1.7	1.7	1.7	1.5	1.5
South Sudan							1.5	1.4	1.5	1.6	1.1	0.8	1.3	1.2	1.1
Sudan	8.2	6.3	5.6	5.3	8.1	6.8	6.1	7.8	4.5	3.5	3.9	3.4	2.9	2.5	2.2
Swaziland	3.5	3.5	3.8	4.1	5.1	3.6	3	3	2.6	2.2	3	2	2.2	3.9	3.6
Tanzania	6.4	4.9	4.3	7.3	11	6.3	3.8	3.1	5.9	6.5	7.1	6.8	4.2	4.3	3.9
Togo	5.5	3.1	4.9	4.4	3.9	3.5	3.9	7.7	9.5	5.1	6.4	5.7	6.6	7.8	5.8
Uganda	6.3	4	4.2	4.2	2.4	3.1	3.4	4	5	4.6	4.8	3.7	3.4	4.6	4.5
Zambia	5.6	6.2	5.2	6.1	6.1	7.2	9.3	13.2	12.5	9.3	11.4	6.1	5.9	6.3	9.4
Zimbabwe	2.8	4.3	7.5	10.4	7	4	17.3	18.8	44.7	12.5	15	14.5	4.9	5.5	9.5

Source: ReSAKSS (2015)

PERCENTAGE DISTRIBUTION OF THE POPULATION IN SELECTED AGE GROUPS BY COUNTRY: 2015, 2050 AND 2100

COUNTRY	2015				2050				2100			
	0-14	15-59	60+	80+	0-14	15-59	60+	80+	0-14	15-59	60+	80+
Angola	47.7	48.5	3.8	0.3	37.6	56.9	5.5	0.5	23.5	60.6	15.9	2.3
Benin	42.2	53.2	4.6	0.3	31.3	60.7	7.9	0.5	21.2	60.7	18.1	2.2
Botswana	32	62.1	5.9	0.5	21.9	62.4	15.7	1.4	16.5	55.4	28.2	6.5
Burkina Faso	45.6	50.6	3.8	0.2	34.9	58.7	6.4	0.4	22.7	60.6	16.8	2.2
Burundi	44.8	51	4.2	0.3	36.9	56.3	6.8	0.6	24.3	59.9	15.8	2.6
Cabo Verde	29.7	63.7	6.7	1.2	18.1	61.4	20.5	2.8	14.1	48.9	37	12.8
Cameroon	42.5	52.6	4.8	0.4	31.8	60.1	8.1	0.7	21	59	20	3.6
Central African Republic	39.1	55.1	5.9	0.5	28.1	61.9	10	0.8	18.5	57.5	24	5
Chad	47.7	48.3	4	0.3	36.4	58.2	5.4	0.4	22.7	60.7	16.5	2.2
Congo	42.6	51.8	5.5	0.5	34.3	57.4	8.3	0.9	23.4	58.6	18	3.4
Cote d'Ivoire	42.5	52.7	4.8	0.3	34.9	58.5	6.5	0.4	24.2	59.7	16.1	2.4
Congo. Dem. Republic of	46	49.4	4.6	0.3	35.5	58	6.5	0.6	22.1	59.8	18.1	3
Djibouti	32.7	61	6.3	0.5	22.2	62.4	15.5	1.5	16.9	56	27.1	5.5
Equatorial Guinea	39.3	55.6	5.1	0.5	29.6	61.2	9.2	1.2	18.6	57.5	23.9	5.2
Eritrea	42.8	53	4.2	0.2	29.6	61.2	9.2	0.6	18.9	58.1	23	4.6
Ethiopia	41.4	53.3	5.2	0.5	25.9	63.7	10.4	1.1	16.2	54.8	29	7.2
Gabon	37.1	55.6	7.3	1	27	61.2	11.8	1.3	18.3	56.7	25	5.7
Gambia	46.2	50.1	3.7	0.2	35.6	58.5	5.9	0.4	21.7	61.7	16.6	1.8
Ghana	38.8	55.9	5.3	0.4	29.7	60.7	9.7	0.7	20.8	60.4	18.8	2.5
Guinea	42.5	52.4	5.1	0.3	32.4	60.1	7.6	0.5	20.8	58.7	20.5	3.7
Guinea-Bissau	40.8	53.9	5.3	0.3	31.2	60.5	8.3	0.5	21.5	60.8	17.7	2.1
Kenya	41.9	53.6	4.5	0.4	30.9	59.5	9.6	0.8	19.8	58.3	21.9	4.6

COUNTRY	2015				2050				2100			
	0-14	15-59	60+	80+	0-14	15-59	60+	80+	0-14	15-59	60+	80+
Lesotho	36.1	57.7	6.2	0.7	27.1	63.8	9	0.6	18.1	57.9	24	4.6
Liberia	42.3	52.9	4.8	0.3	32	60	8	0.5	21.4	59.9	18.7	2.7
Madagascar	41.7	53.6	4.7	0.4	32.5	59.2	8.2	0.8	21.7	58.4	19.9	4
Malawi	45.2	49.9	4.9	4	33.9	58.5	7.6	0.6	22	58.4	19.6	3.7
Mali	47.5	48.5	4	0.3	36.8	57.4	5.8	0.4	21.8	59.7	18.5	3.1
Mauritius	19.3	65.9	14.7	1.7	13.8	55.6	30.6	7.4	14.2	48.3	37.5	13.3
Mozambique	45.3	49.6	5.1	0.4	35.2	58.6	6.2	0.6	22.5	59.4	18.1	3.1
Namibia	36.7	57.9	5.5	0.5	26.8	62.2	11	1.2	17.7	57.1	25.1	5.3
Niger	50.5	45.3	4.2	0.2	43.9	52.1	4.1	0.3	26.5	60.9	12.6	1.5
Nigeria	44	51.5	4.5	0.2	35.2	58.4	6.3	0.3	23.6	61	15.3	1.7
Rwanda	41.1	54.4	4.5	0.5	25.8	62.1	12	1.2	15.5	54.4	30	7.6
Senegal	43.8	51.7	4.5	0.3	34.1	57.8	8.1	0.7	22.4	57.5	20.1	4.6
Seychelles	23.4	65.6	10.9	1.8	18.5	54.1	27.4	6	15.3	50.4	34.3	12
Sierra Leone	42.4	53.2	4.4	0.2	29.3	63.1	7.7	0.4	19.4	61	19.6	2.1
Somalia	46.7	48.8	4.5	0.3	38	56.8	5.2	0.4	24.6	61.4	14	1.5
South Africa	29.2	63	7.7	1	21.4	63.3	15.4	2	16.6	55.6	27.8	6.8
South Sudan	42.1	52.8	5.1	0.4	31.9	60.5	7.5	0.6	21.3	61.2	17.5	2.1
Sudan	40.5	54.3	5.2	0.4	30.1	60.7	9.2	0.9	20.6	59.6	19.8	3.1
Togo	42.2	53.3	4.5	0.2	32.3	59.5	8.1	0.5	21.6	59.6	18.8	3
Uganda	48.1	48.1	3.8	0.4	36	58	6	0.5	22.3	59.9	17.8	2.9
United Republic of Tanzania	45.2	50	4.8	0.5	35.9	56.9	7.2	0.8	23.7	58.6	17.6	3.4
Zambia	45.9	49.8	4.3	0.4	37.3	56.2	6.6	0.5	26.3	58.6	15.1	2.6
Zimbabwe	41.6	54	4.4	0.5	28.5	61.4	10.2	0.7	17.8	57	25.2	5.7

Source: World Population Prospects 2015



ALLIANCE FOR A GREEN REVOLUTION IN AFRICA (AGRA)

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