

# Investing in the Framework Conditions to Develop and Scale Innovations In Africa

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# Outline

- **Elements of an enabling environment for scaling of agricultural innovations: practical experiences in Africa (incl. innovation platforms, but also other strategies)**
- **Emphasis on policy needs at the national and continental levels**
- **Experiences with innovation opportunities in 11 African countries in context of PARI**

## Background

...efforts at developing Africa agriculture has generated an endless list of

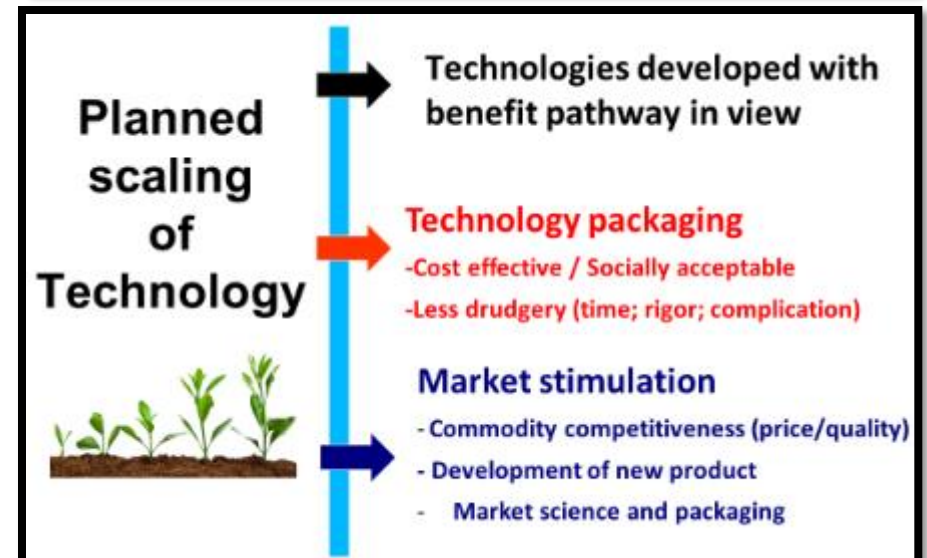
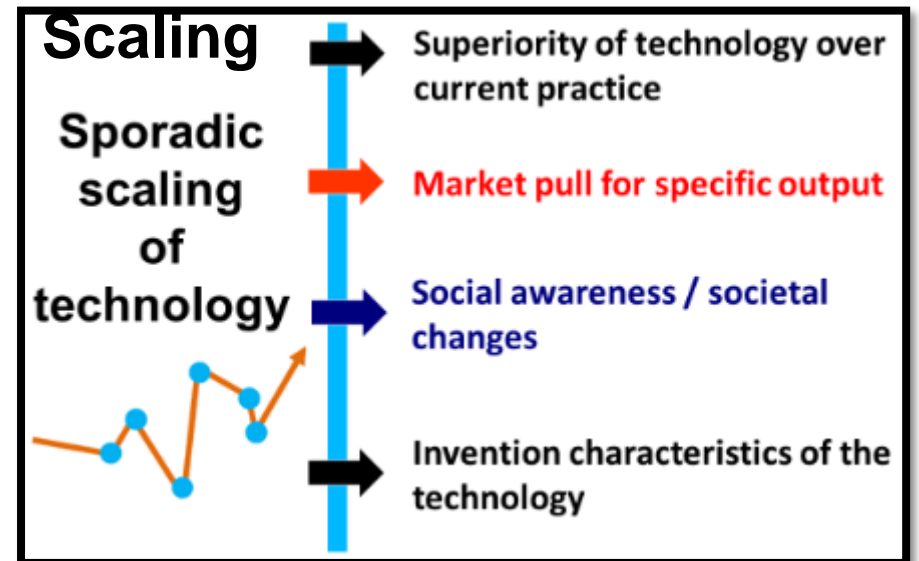
**“good practices.”**

But, all these are not adding up to deliver

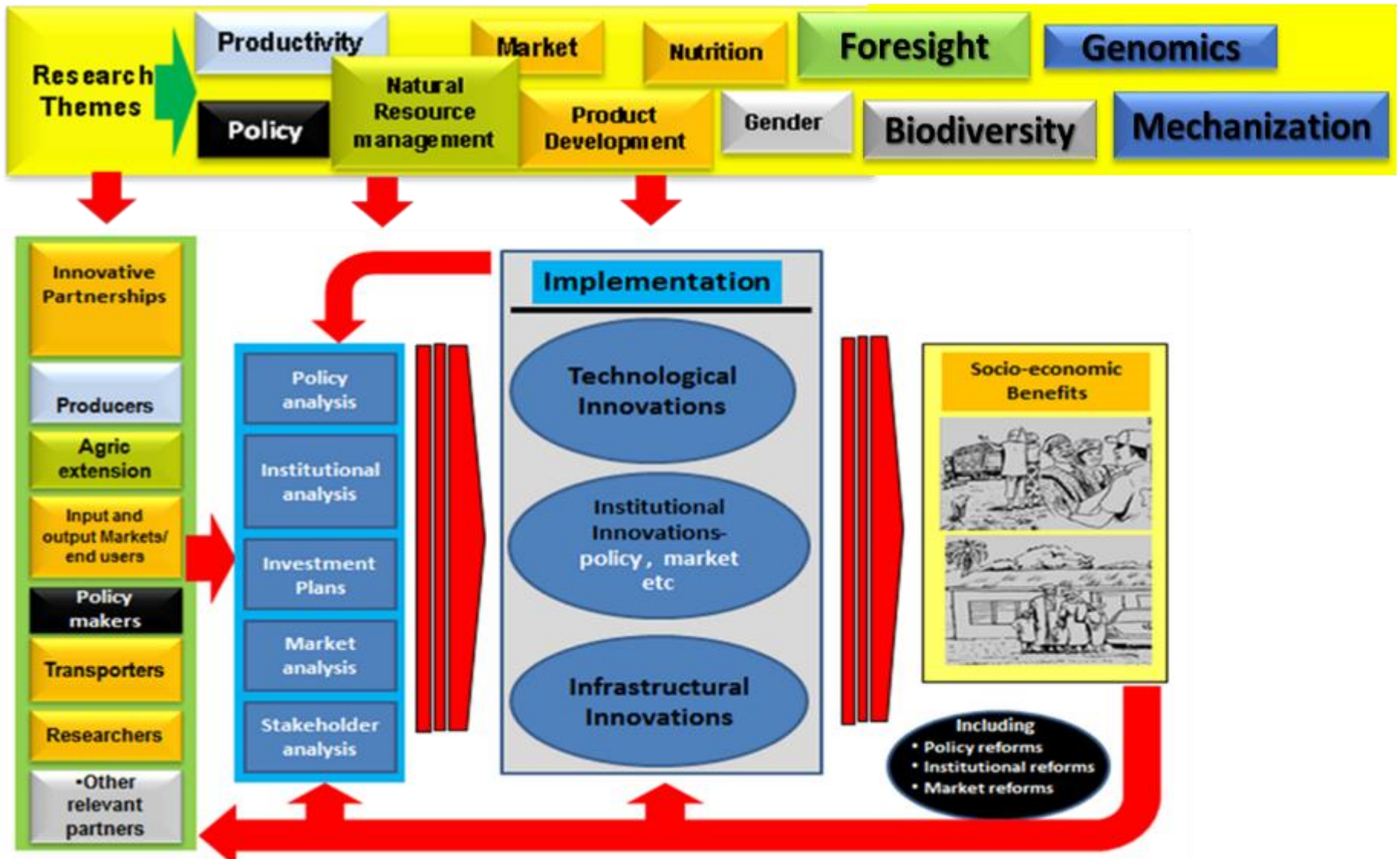
**“Impact at Scale”**

*with a few notable exceptions*

## Mediators of Technology



# Holistic Technology to Innovation Framework



# Existing models for scaling innovation

## **IPTA Model**

- IPTA concentrates on technology adoption and use.
- IPTA establishes a multistakeholders platform and facilitates linkage with the source of existing technologies.
- It fosters value chain development and encourages business.

## **Agricultural Business Incubation**

- It Build on the Uni-Brain model
- Facilitate partnerships with universities and other stakeholders to ensure commercialization of technologies.
- It builds business incubation centres and establishes agricultural business start-up with trainings, linkages to technologies and take off fund.

## **Agricultural Innovation Platforms**

- An Innovation Platform is a physical or virtual forum established to facilitate interactions, and learning among stakeholders selected from a commodity innovation sphere.
- It works in a business mode and takes abreast of issues along the value chain.
- If foster the P-P-P and carry out production to commercialization action.

## **Users Led process**

- Create a consortium of stakeholders around agricultural constraints.
- Give prominence to the voice of the users of the technologies.
- Jointly source fund to support research endeavours to generate solutions to identified constraints.
- Encourages the use of developed technologies by the users as well as lesson learning.

## Success indicators from various scaling models

### DONATA IPTA Model

- Adoption can increase by 50% (*DONATA, FARA*)
- Income Doubled (*IAR4D, FARA*)
- IP reaches 800 households/farmers as direct participants (*IAR4D, FARA*)
- 60% of farmers population accessed improved technologies
- New product developed created new market opportunities



- Each Incubator created about 300 direct jobs per year (*UniBRAIN, FARA*)
- Cost of creating one job under an incubator = \$300 (*UniBRAIN, FARA*)
- Cost of setting up an incubator = \$95,000 (*UniBRAIN, FARA*)

# Policy action to foster the scaling of agricultural innovation

**A. Need to institutionalize the model(s) for running research to impact**

**Set up the Strategic IP**

**B. Proactive support to Scale-up agricultural Innovation**

- Capacity development action
- Support for public sector actors to function
- Policy support to foster trade (national/regional)

**C. Develop affordable financing for SME in agriculture**

**D. Develop modalities for vocational training in farming.**



# Exploring innovation opportunities for growth at the country level in Africa



**Technology generation in Africa countries is still at low level compared to other regions**

**Table 1 The status of Agricultural Innovation in the last 20 years**

Country	Cropping	Livestock	Fishing	Processing	Value chain	Natural Resource Management	Finance /market	Governance	others	Total
Benin	130	22	13						1	166
Burkina Faso	29	18	1		11	23	18	3	1	103
Cameroon	51	24		10	1	6	4	15		111
Ethiopia					1		1	1		3
Ghana	175	30	6	48		5			7	271
Kenya	29	5		2	1		1	5		43
Malawi	61	1				2				64
Mali	25	1		1						27
Nigeria	109	4	2			1				116
Togo	48	2	19			26				95
Tunisia	193							2		195
Zambia	22	1				9	1	1		34
<b>Total</b>	<b>872</b>	<b>108</b>	<b>40</b>	<b>61</b>	<b>14</b>	<b>72</b>	<b>25</b>	<b>27</b>	<b>9</b>	<b>1228</b>
<b>% of total</b>	<b>71.0</b>	<b>8.8</b>	<b>3.3</b>	<b>5.0</b>	<b>1.1</b>	<b>5.9</b>	<b>2.0</b>	<b>2.2</b>	<b>0.7</b>	



## Africa In Global Patents Registration, 2002 – 2015 and R&D Spending

Country	No. of Patents	R&D Spending (% of GDP)
United States:	5,739,851	2.74
Japan:	1,069,394	3.58
Germany:	365,627	2.87
S. Korea:	166,353	4.29
Taiwan:	162,732	3.00
UK:	140,227	1.70
France:	139,866	2.26
Canada:	123,904	1.61
China:	45,366	2.10
India:	17,865	0.85
Russia:	4,955	1.19
<b>South Africa:</b>	<b>4,600</b>	<b>0.73</b>
Brazil:	4,116	1.15

## Africa In Global Patents Registration, 2002 – 2015 and R&D Spending

Country	No. of Patents	R&D Spending (% of GDP)
Egypt:	275	0.68
Kenya:	90	0.98 (2012)
Tunisia:	43	1.10 (2012)
Zimbabwe:	39	
Nigeria:	36	0.22 (2012)
Cameroon:	15	
Ghana:	13	0.38 (2012)
Algeria, Mauritius:	07	0.07 (Algeria)
Senegal:	06	0.54 (2012)
Madagascar, Tanzania, Uganda	05	0.48 (Uganda)
Chad, DRC, Ethiopia, Gabon, Guinea, Liberia, Malawi, Namibia:	02	0.61 (Ethiopia)
Benin, Burkina Faso, Mali	01	0.66 (Mali, 2012)

## Regional Average R&D Expenditure (% of GDP)

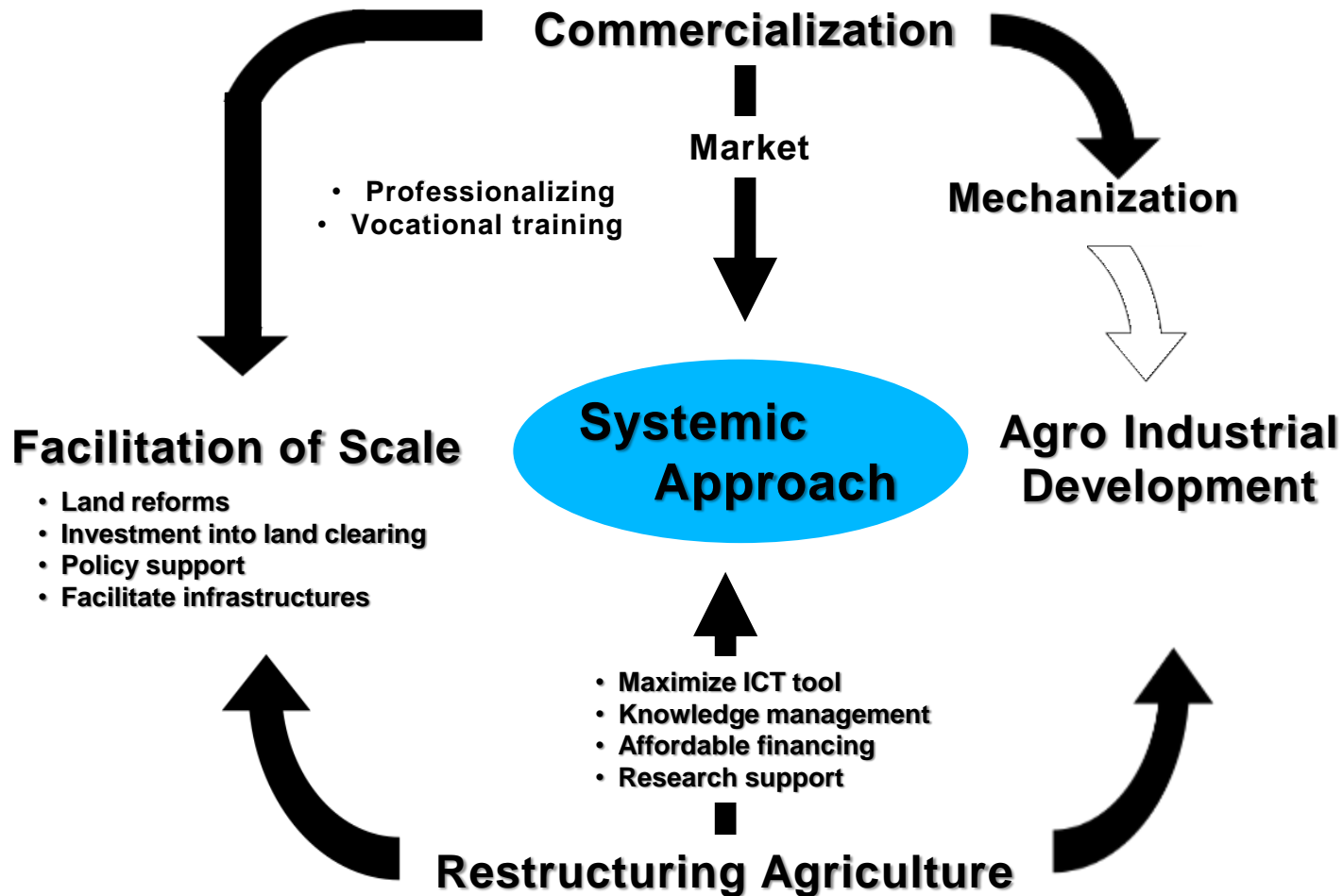
Regions	Research Expenditure (% of GDP)
North America	2.6%
Oceania	1.9%
Europe	1.6%
Asia	1.6%
Latin America & the Caribbean	0.6%
<b>Africa</b>	<b>0.4%</b>
Global Average:	1.77%
STISA 2024 Target	1.00%

Source: UNESCO, Global Investments in R&D, August 2011; STISA, 2024



**Africa Needs to Do More to Keep Pace with the Rapid Advances in STI.**

# Generic innovation opportunities in Africa Countries



## Summary of thoughts...

- **Continuous generation of innovations is vital for the growth and development of Africa agriculture.**
- **Strategic measures to foster continuous generation of innovation is required.**
- **The agricultural innovation systems approach and other multistakeholders framework are in use in pilots in a number of countries.**
- **Bringing the successful innovation to scale is needed to ensure broad based benefits at national level.**
- **The PARI projects is contributing to generation and sustaining innovations in 12 Africa countries through generation of knowledge that informs appropriate direction of investment.**