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**Accelerating Industrialization in Southern Africa through Beneficiation  
and Value-Addition**

The integration of SADC member States into global value chains together with the upgrading of productive capacities and beneficiation and value addition has the potential to accelerate structural transformation and productivity increases. Adding value to commodities, beneficiation, industrialisation and regional integration have been linked to rapid, sustained economic growth in modern economic development. For this reason, the SADC member States are placing greater emphasis on facilitating local value addition and beneficiation to natural resources as a route towards socio-economic transformation and development. The resources boom during the last decade failed to fuel wealth creation, reduce poverty and reduce inequality and unemployment as most of the countries in the region remain rooted at the lower end of the commodities value chains where prices fluctuate wildly and are highly cyclical. The need to graduate to higher value products is a developmental imperative. A regional industrial policy framework which emphasizes value addition and beneficiation to natural resources has been developed and member States are aligning national policies to it. Furthermore, initiatives to strengthen participation in global value chains are underway and are at various stages at country level. However, member States face many challenges including; skills and technology shortages, infrastructure gaps, finance and international market conditions. This report reviews the industrial policy environment in the region, value addition and beneficiation initiatives and the participation of member States in regional and international value chains and proffers recommendations.

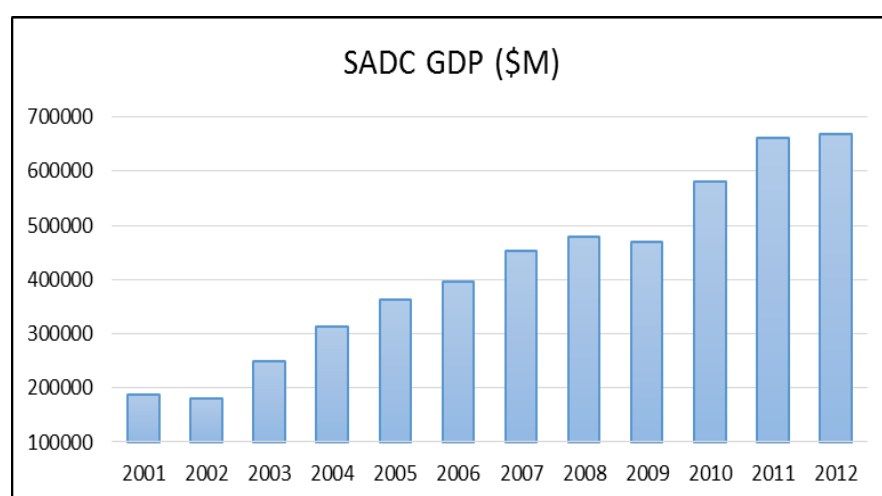
Delegates and participants to the 21<sup>st</sup> ICE of Southern Africa are invited to consider the review, discussions and recommendations provided in this report. The consideration should provide direction and proposals to strengthen the report and its recommendations.

## Section 1: Introduction and Background

1. The Southern African Development Community (SADC) <sup>1</sup> Industrial Development Policy Framework places the development of industry at the core of the regional integration agenda. The August 2014 SADC Heads of States Summit further underscored the importance of industrialization in the socio-economic transformation of the region and set targets on the development of a regional strategy.

2. The SADC region has generally achieved rapid growth of GDP over the past decade especially Mozambique and Zambia which achieved growth rates in excess of 7 percent and 6 percent respectively for most of the period. Figure 1 shows rising nominal GDP in SADC for the past decade, with a blip in 2009 due to the world economic crisis.

**Figure 1 Total SADC GDP 2001-2012<sup>2</sup>**



3. Some countries such as Angola and Botswana, however, experienced downturns during the global economic and financial crisis of 2008/2009 when their single commodity dependent countries were exposed to the resultant global fall in demand. Other regional countries were affected negatively to varying degrees depending on their exposure to the same.

4. Though the growth in overall GDP was laudable, however, it did not necessarily translate into increased jobs or higher standards of living for the majority of the region's population. Most of the growth originated from the capital intensive extractive industries which have fewer linkages with the domestic economy. For example, despite the increasing GDP, during the period 2001 to 2012, inequality as measured utilising the Gini coefficient increased in all the countries on which some data is available. In Botswana, the Gini coefficient increased from 57.3 percent in 2002 to 64.5 percent in 2010. Similarly, inequality for Mauritius increased from 37.1 percent in 2002 to 41.3 percent in 2012. For South Africa, the inequality rate increased from 57.8 percent in 2000 to 65.0 percent in 2012 (*SADC 2012*). Thus these data show that for the period 2001 to 2012, the GDP growth attained by some SADC member state economies had little or no positive impact on inequality.

**Table 1: Agriculture and Industry Share of GDP in SADC<sup>3</sup>**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Agriculture</b>	10	10.3	8.4	7.5	7	7.2	7.4	7.8	8.2	7.4	7.5	8.1
<b>Mining &amp; Quarrying</b>	10.2	10.5	9.8	10.3	13.1	14	15.6	18.1	13.7	14.3	15.3	15.6
<b>Manufacturing</b>	<b>16.9</b>	<b>16.8</b>	<b>17.2</b>	<b>17</b>	<b>16.1</b>	<b>15.3</b>	<b>14.7</b>	<b>14</b>	<b>13.8</b>	<b>13</b>	<b>11.8</b>	<b>11.6</b>
<b>Others</b>	62.9	62.4	64.6	65.2	63.8	63.5	62.3	60.1	64.3	65.3	65.4	64.7

<sup>1</sup> Throughout this Report, SADC and Southern Africa will be used interchangeably to refer to Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

<sup>2</sup> SADC, 2012

<sup>3</sup> *ibid*

5. As can be seen in Table 1 the extractive industries (mining and quarrying) increased their contribution to GDP from 10.2 percent in 2001 to 15.6 percent by 2012. On the other hand, the share of value adding activities as represented by the manufacturing sector declined from 16.9 percent to 11.6 percent. The report by SADC (2012) observes that exports from the region to the rest of the world grew from USD47 billion in 2001 to USD200 billion in 2012 while intra-SADC exports increased from USD6 billion to USD30 billion over the same period (Figure 2). Trade performance since 2001 shows that intra-SADC trade values have risen but the proportion of intra-regional trade when compared to total trade has fluctuated at a low rate of 14 percent to 17 percent (**Table 2**).

**Table 2: Proportion of Intra-SADC Trade in Total SADC Trade 2001-2012**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Intra-SADC Trade as % of Total Trade	15.9	18.0	16.5	16.3	14.0	14.1	14.1	13.7	15.2	15.4	15.2	17.0
Intra-SADC Exports as % of Total Exports	13.3	15.2	14.1	14.4	11.2	12.5	11.6	11.4	13.4	13.0	12.7	15.3
Intra-SADC Imports as % of Total Imports	18.7	20.9	18.8	18.0	16.8	15.7	16.5	16.2	16.9	18.0	18.0	18.7

**Source:** Author calculations based on SADC Statistical Yearbook 2012.

6. The majority of Southern Africa's mineral-rich states are not only earning the minimum from their resources, via the export of unprocessed ore, but are also limiting employment benefits, wealth diversification and leaving themselves vulnerable to the fluctuations of the global resource markets. In addition, the SADC region produces a wide range of agricultural commodities for consumption and sale, including cash crops and food crops, from large commercial and agro-industrial estates, to smaller peri-urban market farms, smallholder and communal farms. SADC (2012) reports that the key agricultural commodities produced in the region for commercial sale including export are cotton, maize, coffee, tea, tobacco, peanuts, cashew nuts, sisal, citrus, oil-seeds and sugar as well as vanilla, cloves and other spices.

7. The UNECA (2013) study on natural resources underscored the urgent need for the region to exploit the resources for socio-economic transformation and development. It placed natural resources at the centre of industrialization and regional prosperity in the region and urged member States to develop collective strategies to optimize benefits.

## **Section 2: Continental, Regional and National Industrialization Policy Frameworks**

### **Africa's Industrialization Policy Framework**

8. The continental initiatives for development are underpinned by the African Union Vision to "build an integrated, prosperous and peaceful Africa, driven and managed by its own citizens and representing a dynamic force in the international arena" which places industrialization at the centre. Initiatives and plans central to the continent's development agenda include the Plan of Action for Accelerated Industrial Development of Africa, boosting of intra-African trade and the realization of the Continental Free Trade Area. The recently crafted Agenda 2063 seeks to push for Africa's socio-economic transformation, inclusive growth and sustainable development. Among others, the milestones for Agenda 2063 include; transformation, growing and industrializing African economies through beneficiation and value addition of natural resources and consolidation of the modernisation of African agriculture and agro-businesses, through scaled up value addition and productivity. Furthermore, the Common Africa Position (CAP) at the current discussions on the Post 2015 Development Agenda also re-emphasizes industrialization as the centre-piece

for prosperity on the continent. The six pillars of the CAP at these deliberations are (i) structural economic transformation and inclusive growth; (ii) science, technology and innovation; (iii) people-centred development; (iv) environmental sustainability, natural resources management and disaster risk management; (v) peace and security; and (vi) finance and partnerships. These aspirations are reflected in the regional development frameworks.

### **SADC Regional Industrialization Policy Framework**

9. SADC member States have been pursuing programmes aimed at deepening the level of regional integration through the creation of higher value tradable goods leveraging on the member States' rich natural resource endowment. The Regional Indicative Strategic Development Plan (RISDP), among others, advocates for the "...diversification of regional economies through, inter-alia, industrial development and value addition;" (RISDP, p 27). The push for industrialization is also echoed in the SADC Protocol on Trade (STP Article 4(2)). The current regional initiatives towards accelerated industrialization under the Industrial Upgrading and Modernization Programme (IUMP) adopted in 2009 further demonstrate the commitment of the region to industrial development. Furthermore, the adoption of the SADC Industrial Development Policy Framework (IDPF) in 2012 as the region's blueprint on industrialization is a bold step towards fostering industrial development in the region. The SADC Treaty provides for an integration approach in the region which seeks to sustainably utilise the natural resources.

#### **The Policy Framework**

10. The RISDP adopted in 2003 but implemented from 2005 re-affirms the commitment of SADC member States to a number of priority intervention areas, including development of deliberate policies for industrialization with a focus on the promotion of industrial linkages and efficient utilisation of regional resources through increased value-addition. The RISDP was revised in 2012/13 to provide guidance for the last phase of implementation, i.e. 2015-2020. The new priorities under RISDP are in; Priority A - industrial development and market integration; Priority B - infrastructure in support of regional integration; Priority C - peace and security cooperation and Priority D - special programmes. The special programmes fall under Education and Human Resource Development, Health, HIV and AIDS and other diseases of public health importance, Food Security and Trans-boundary Natural Resources, Environment, Statistics, Private Sector, Gender Equality, and Science, Technology and Innovation and Research and Development. Each of these priority areas has a strategic objective and specific objectives and these priorities will be pursued in a synergistic manner.

11. The SADC Industrial Development Policy Framework seeks to implement the industrialization component of the RISDP and sets out areas of cooperation at the regional level to build a diversified, innovative and globally competitive industrial base, which contributes to sustainable growth and employment creation for the mutual benefit of its people. It endeavours to promote the development of an integrated industrial base in the region, through the exploitation of regional synergies in value-added production and enhancement of export competitiveness. The policy thus underscores the importance of value addition and beneficiation as industrialization strategies. Specifically, the policy framework seeks to promote collaboration in the development of regional value chains, with targeted interventions on, but not exclusively, identified priority sectors, so as to:

- (i) Increase intra-regional trade and expansion of markets;
- (ii) Diversify the region's manufacturing base through efforts to stimulate and encourage value-addition on local primary resources;
- (iii) Stimulate investment flows into productive sectors in which the region has a comparative advantage, and as a strategy for acquiring modern technology to support value-addition, innovation and technology transfer into the regional economy;

- (iv) Strengthen national and regional institutional frameworks and capabilities for industrial policy design and implementation, with specific emphasis on enhancing evidence-based research processes between the public and the private sector;
- (v) Strengthen research and development, technology and innovation capabilities and skills to facilitate structural transformation of the manufacturing sector;
- (vi) Facilitate the upgrading of existing industries particularly SMEs towards more competitiveness, including improvements in the quality and standards infrastructure necessary to ensure international competitiveness of goods produced in the SADC region;
- (vii) Promote export diversification of goods and services;
- (viii) Facilitate regional public and private investments in infrastructure and services in order to reduce the costs of doing business in the region; and
- (ix) Positioning the region to exploit opportunities arising out of collaboration with other parts of the world.

12. The regional Industrial Upgrading and Modernisation Programme (IUMP), which was developed after extensive consultations, seeks to reinforce institutional support infrastructure for improving productivity and competitiveness for the success of beneficiation and value addition. The extensive consultations and analytical work confirmed both comparative and competitive advantage in promoting the development of regional value chains and their linkages with global supply chains. Nine priority sectors were identified. These include: agro-food processing; fisheries; wood and wood products; textiles and garments; leather and leather products; beneficiation of mineral products; pharmaceuticals and chemicals; machinery and equipment; and services. Overall, the IUMP seeks to promote industrial upgrading through innovation, skills development, technology transfer and research and development. The implementation of the SADC Protocol on Science, Technology and Innovation which emphasises cooperation in the development and transfer of science, technology and innovation in the member States is a key starting point.

13. The thrust of the IUMP on value addition and beneficiation of natural resources is re-emphasized in the new RISDP. The revised RISDP has frontloaded industrialization. In 2014, the SADC Council also “requested the Committee of Ministers of Trade to review the sequencing of targeted outputs on Industrial Development and Trade Liberalisation in order to accord centre stage to industrialisation in the current stage of integration in SADC”.<sup>4</sup> This change in priorities was further buttressed by the Summit’s directive that industrialization should take centre stage in the SADC’s regional integration agenda. Thus, the Summit mandated the Ministerial Task Force on Regional Economic Integration to develop a regional strategy and roadmap for industrialization. Council further directed the Secretariat to facilitate implementation of all pillars of the development integration agenda, in particular, fast-track the coordination of measures for effective implementation of the SADC Industrial Development Policy Framework and the Industrial Upgrading and Modernisation Programme, in order to boost productive competitiveness and industrial capacity and promote equity, fairness and balance in intra-regional trade.

14. These frameworks provide the regional direction on value addition and beneficiation and industrial development. Member States have aligned or are in the process of aligning national industrial policies to the regional blue print to create a harmonized environment.

### **Section 3: Beneficiation and Value-addition Policies and Strategies of Member States**

15. The translation of continental and regional aspirations into national level policies is key for alignment at member State level and eventual implementation. There is need to interrogate whether Southern African countries were/are pragmatically pursuing industrialization policy co-operation (or co-

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<sup>4</sup> Outcome of SADC Council of Ministers meeting, held on August 14 and 15, 2014 at Victoria Falls, Zimbabwe

ordination) as this marks an important point of departure in the analysis of industrialisation in the region. Industrial policy documents are complimentary to national development plans, national visions and are also supported by sectoral policies which provide detailed directions on a sector by sector basis.

16. **Angola:** The objectives of national policy of promoting and diversifying the economy are outlined in the Strategy “Angola - Vision 2020-2025” and for the period until 2017 are as follows:

- a) To promote balanced growth of the various sectors of economic activity centred on economic growth and expansion of employment opportunities;
- b) To enhance natural resources, enabling the expansion of value chains and the construction of "clusters" based on local resources; and
- c) To increase the self-sufficiency of the country through competitive, gradual replacement of select imports.

17. The priority sectors for industrialization are identified in the “Angola Global Strategic Model for Development 2025”, also known as “Agenda 20-25”. These sectors are chosen according to a set of criteria that match their contribution to national objectives, including the generation of added value, meeting the basic needs of the population, job creation, equitable and balanced regional development and the net effect on the trade balance, but also the multiplier effect that can boost the process of industrialization and economic activity. They are mostly based on adding value to locally available resources including; food and drink industry (meat, fish, vegetables, oils, fats, milk, dairy products), textile and clothing manufacturing (production of textiles and garments linked to agriculture), leather and footwear (from tanning to finishing of leather to the manufacture of footwear and its components linked to livestock production and rubber and plastics industry), wood and furniture (wood products linked to forestry industry), pulp and paper (linked to forestry) and chemicals and pharmaceuticals (strong links with petroleum industry). The other sectors are non-metallic mineral products and building materials, metals and metal products and transport equipment manufacturing. The re-industrialization process favours the development of light industry, supported by unsophisticated production equipment. The implementation of priorities, will be underpinned by national production diversification programme, clusters priority" creation programme and the Angola investment programme which focuses on the establishment of a strong national business structure, especially with regard to “small and medium enterprises” (SMEs), to generate employment and wealth for the Angolans. Other programmes that converge towards the same goals include: (i) Entrepreneurship Promotion Programme; (ii) Credit Access Facilitation Programme; (iii) Support Programme for Emerging Economic Activities; (iv) Conversion Programme for the Informal Economy; (v) Programme for Relocation of Companies in Angola; and (vi) Medium Term Development Programme for the Agricultural Sector.

18. Angola needs to accelerate economic diversification and reduce the dependence on oil which accounts for about 46 percent of GDP, 80 percent of government revenues and 95 percent of exports<sup>5</sup>. The country “continues to face massive developmental policy challenges, including the need to reduce the dependency on oil, the diversification of the economy, the rebuilding of the economic and social infrastructure, the improvement of the institutional capacity, governance, public financial management systems, human development and living conditions of the population. These factors are constraining the pace of diversification of the economy and preventing small-and medium-sized enterprise development and job creation. Lack of access to water, energy and transport services, constitutes the major bottleneck for private sector competitiveness.” (AEO, 2014).

19. **Mozambique:** Mozambique’s overall development strategy is outlined in the National Development Strategy 2015-2035, (2014) and the industrialization strategy in the Industrial Policy and Strategy, (2007). The National Development Strategy is based on four pillars: (i) development of human capital; (ii) development of infrastructure to support industries; (iii) research, innovation and technical development;

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<sup>5</sup> (<http://www.afdb.org/en/countries/southern-africa/angola/>)

and (iv) institutional articulation and coordination. The strategy suggests (i) an expansion in higher and technical education; (ii) development of cooperation with the private sector to promote apprenticeships and “learning on the job”; and (iii) creation of a public job-information and clearing service. As for scientific and technological development, the strategy observes that this includes (i) research and development; (ii) education and training for human capital; (iii) technological transfer; (iv) the installation and expansion of scientific and technological centres; (v) financial support for research, innovation and technological development; and (vi) management of knowledge existing in the country, of technology and of R&D projects.

20. The specific objectives of the industrial policy and strategy are:

- the development of mechanisms for coordination, articulation, implementation and economic and impact analysis of public policies, strategies and interventions and complementary competitive investment, rationalization and development of policy institutions and industrial promotion organizations;
- development and supply of technological and informational services;
- development and strengthening of coherence and consistency for infrastructure, economic, social and horizontal policy, institutional and educational support programs and the priorities and requirements for industrial development ;
- mobilization of public and private finances for development of the industrial base; and
- identification and elimination of administrative and bureaucratic redundancies and irrelevancies, simplification of administrative processes, and the construction of a public-service culture to render useful, cheap, efficient, timely and good-quality services favouring the development of competitive productive activities.

21. The industrial policy and strategy emphasizes use of national resources and capabilities, reinforcement of industrial linkages, gradual modernization of the industrial base, import substitution and export promotion on an ample, interlinked and competitive basis. The priority sectors include; food industry and value chains, furniture manufacturing; construction-materials industry; metal-mechanical, electro-technical and chemical industries; and industrial waste recycling. The Policy emphasizes value addition in cooking oils, stock-feeds and other derivatives (such as soap) from cashew nuts, sunflowers and cotton; basic processing of pulp, juices and canned food from fruits and vegetables; canning and processing of fish products, including the production of fishmeal for animal feeds, diversification of the sugar industry, in particular with a view to strengthening the linkages with other branches of the food and drinks industry. It seeks to ensure the development of programmes for widening the use of sugar derived alcohol, including its use as fuel; and the development of the salt industry, focusing on consolidation of the quality and iodization programme.

22. Other resource-based value adding activities the policy desires to develop include the furniture and wood products industries; the building materials and equipment industry, consolidation of diversified industrial uses of the energy created by natural gas extraction; and the textiles and clothing industries. The policy suggests that these value-adding activities can be realised through institutional development at central and provincial government level to provide the necessary coordination mechanisms and the reorganization of the integrated support system for small and medium enterprises to enable development of clusters and production and value chains.

23. However, the economy remains mainly anchored at the bottom of global value chains for most commodities, driven by mega-projects which are predominantly funded through foreign direct investment, focused on aluminium, extractive industries (mainly coal) and the gas sector. The extractive sector was the fastest growing in 2013 at 22 percent, propelled by coal exports. This growth has not translated into many new employment opportunities because the projects are capital intensive and are enclave with limited links

with the rest of the economy. Table 3 shows that the contribution of value adding activities actually declined between 2008 and 2012.

**Table 3: Mozambique - GDP by sector (percentage)**

Sector	2008	2012
Agriculture, hunting, forestry, fishing	29.3	32.6
<i>of which fishing</i>	1.9	1.9
Mining	1.5	2.4
Manufacturing	15.3	11.9.

**Source:** SADC Statistical Yearbook 2012

24. Sector-specific development strategies are elucidated in various national documents including: Strategic Plan for Agricultural Development 2010-2019; National Energy Strategy, (2000); Science, Technology and Innovation Strategy (2006); Strategy for the Development of Small and Medium Enterprises (2007); Strategy for Integrated Development of the Transport Network (2008); and the Natural Gas Master Plan, (2013). These strategies complement the industrial policy by outlining sector-specific strategies.

25. **Tanzania:** The short-term goals of the Tanzanian Industrial Policy include: human development and creation of employment opportunities; economic transformation for achieving sustainable economic growth; environmental sustainability; and equitable development. The policy seeks to support agro-allied industries (resource based industries) in which the country could potentially have competitive advantages if mixed with the correct technologies. In the medium term (ending in 2010), the policy sought to establish new capacities in areas with clear potential for gaining competitive advantages though the policy does not mention any specific sectors other than iron ore. The policy will lead to exploitation of the country's iron ore deposits depending on available technology. Although small, the exploitation of iron ore deposits has already taken off. This is also in line with one of the objectives of the Mining Policy of Tanzania, "to promote and facilitate value addition activities within the country to increase income and employment opportunities;" (p 10)

26. Although the policy lacks detail on exact strategies, in the long-term (up to 2020), it expects to support the establishment of fully fledged capital goods industries based on experience gained in the short and medium-term implementation phases of the Industrialisation policy. This will involve actualization of the iron and steel industries.

27. **Namibia:** The Namibian Industrial Policy gives impetus to private-sector-led industrialization, export orientation, value-addition, skills development and economic diversification. It recognises national processes and strategies in this endeavour within the wider framework of regional integration in both the Southern African Customs Union (SACU) and SADC and alludes to the need for developing cross-border industrial cooperation with neighbouring countries on a bilateral basis so as to extend the supply and value chains across borders to spread industrial development. The Mineral Policy of Namibia provides direction for the sector in terms of value addition and beneficiation. It alludes to the export of minerals in raw and semi-processed forms and observes that adding value to minerals would increase national economic activities. The policy observes that the country's extensive mineral endowment makes it a good candidate for further processing despite constraints imposed by the shortage of local capital, especially risk capital; scarce fresh water supply; a shortage of technical skills; long distances between the mineral deposits, markets and export destinations; and the usually large size of operations. The supporting fiscal framework defines incentives to support beneficiation and value addition in the minerals sector.

28. Namibia's draft phased Growth at Home (GAH, 2014) industrialization policy framework provides a road map for the execution of the nation's Industrial Policy in a phased approach. The phases extend from 2015-2020 (laying the foundation), to 2020 - 2025 (being a regional player) to 2026 – 2030 (a global player in selected areas) to beyond 2030. GAH comprises three strategic intervention areas and sets targets in line



with the guiding policy and strategy documents. The three strategic intervention areas are: supporting value addition; upgrading and diversification for sustained growth; securing market access at home and abroad; and improving the investment climate and conditions. The key features of the GAH include, among others, local value addition to local raw materials such as minerals and agricultural produce through national and regional value chains, regional value chains development, infant industry protection and reform for competitiveness. There are proposals for a targeted approach towards industrialisation with the initial sectors to include; mining and mineral beneficiation; agriculture and agro-processing; fish and fish processing; chemical industries linked to locally available minerals; and steel manufacturing and components of automotive industries. In addition, the general reforms to be pursued under GAH include; Industrial Upgrading and Modernisation Programme to provide support to majority Namibian owned entities with at least 10 employees in four sectors, namely agro-food processing, pharmaceuticals/cosmetics, fish processing and minerals beneficiation; supportive incentive schemes and financing instruments, targeted investment promotion into the defined priority sectors and to support the diversification process; local Procurement Support Initiative; Retail Charter development for best practices, trade competitiveness programme (Single Window System documentation); practical training and import of skilled labour (Namibian Training Authority), operationalize the ten year Industrial Infrastructure Development Master Plan for Namibia, SME support and creation of a platform to jointly address remaining challenges in the business environment.

29. **Zimbabwe:** Zimbabwe's Industrial Development Policy (IDP) 2012-2016 seeks to, "transform Zimbabwe from a producer of primary goods into a producer of processed value-added goods for both the domestic and export market." (IDP 2012-2016) The policy seeks to replace obsolete machinery with new technology in four priority sectors; agri-business, fertiliser, pharmaceuticals and metal products. The policy outlines the key industrialization strategies to include:

- i. Establishment of a dedicated financial mechanism to provide long term funding for recapitalisation;
- ii. Identification of lines of credit of a medium to long term nature for working capital;
- iii. Provision, by government, of short-term revival packages for Distressed Companies through budgetary allocations;
- iv. Review of Import Tariffs to level the playing field between local and foreign competitors; and
- v. Strengthening of existing institutions that support research and technology development

30. In line with the IDP2014-2016, the government developed a supportive programme called Zimbabwe Agenda for Sustainable Social and Economic Transformation (ZIMASSET). The programme puts beneficiation and value-addition of primary products at the centre of Zimbabwe's transformation efforts. It proposes to grow the economy through recapitalising and capacitating institutions such as the Industrial Development Corporation, Infrastructural Development Bank of Zimbabwe, AgriBank, Small Enterprise Development Corporation, the Minerals Exploration Company, Zimbabwe Mining Development Corporation and the Minerals Marketing Corporation of Zimbabwe to provide critical support for industrial development. (p 35). The strategies in the programme provide for the creation of a Sovereign Wealth Fund from mineral resources revenues and the enhancement of Private Public Partnerships to support value addition and infrastructure development efforts. The targeted sectors in the programme include bio-diesel from jatropha, bio-gas, fertilisers, fruit juice production, edible oils, avocado oil, meat and dairy products, diamond cutting and polishing and value-added steel products. The Government is currently reviewing the mining policy landscape and is emphasizing value addition and beneficiation as industrialization strategies. The fiscal framework in the proposed minerals sector framework will incentivize value addition and beneficiation.

31. However, the main drawback for the success of the precursor to the current policy, IDP (2004-2010), was the absence of a dedicated financing mechanism for the revival of the industrial sector as well as to support new policy initiatives. The distressed industries fund, financed through the national budget had insufficient funds resulting in many industrial firms folding up for lack of working capital.

32. **South Africa:** The principal industrial policy document in South Africa is the National Industrial Policy Framework (NIPF) which is implemented through the Industrial Policy Action Plan (IPAP). The 2013-2015 Industrial Policy Action Plan outlining government initiatives to accelerate the industrialisation of the South African economy was approved by cabinet in 2013. The IPAP fell under and provided one of the key pillars of the New Growth Path, an economic policy framework for 2010-2020 whose overriding objective was employment. Furthermore, the IPAP was informed by the vision set out by the National Development Plan, a policy blueprint for eliminating poverty and reducing inequality in South Africa by 2030. The Industrial plan had stabilised South Africa's clothing sector, turned around the automotive sector and added jobs in the business process services sector through strategies such as procurement designation to boost local manufacturing by designating certain products as requiring minimum levels of local production and content in order to qualify for procurement by the state by 2015. Other sectors added included electrical valves, manual and pneumatic actuators, electrical and telecommunication cables and components of solar water heaters to the list of designated products.

33. The key objectives of the National Industrial Policy are:

- To promote diversification beyond the economy's current reliance on traditional and non-tradable services via the promotion of value-addition, characterised particularly by the movement into non-traditional tradable goods and services that can compete effectively in export markets and against imports;
- To promote a labour-absorbing industrialisation path, with the emphasis on tradable labour-absorbing goods and services and the systematic building of economic linkages that create employment;
- To promote industrialisation characterised by increasing participation of historically disadvantaged people and marginalised regions in the industrial economy;
- To contribute towards industrial development in Africa, with a strong emphasis on building the continent's productive capacity and securing deeper regional economic integration; and
- To ensure the long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy.

34. The key areas of intervention include; beneficiation, infrastructure development, regional economic development and industrial integration, new export markets, local procurement and supplier development and stronger collaboration with other BRICS nations.

35. The policy recognizes the challenges of industrial financing and considers the domains of policy intervention to be introduced to encompass: cost based interventions –(interest rates, transport, utilities), inclusion based interventions (support to labour intensive sectors/activities, small business/cooperatives, Broad Based Black Economic Empowerment) and industrial upgrading interventions (sector specific financing, manufacturing excellence support, industry specific technical and industrial infrastructure, skills development, innovation and technology support).

36. The NIPF focuses on a set of principles and processes through which sector strategies are to be developed, strengthened and prioritised going forward. The five broad sectoral groupings identified with potential for diversification, include: a) natural resource based sectors; b) medium technology sectors (including downstream mineral beneficiation); c) advanced manufacturing sectors; d) labour intensive sectors; and e) tradable services sectors. The sector strategies include industrial upgrading and support to the development of technology. In addition, the policy puts regional integration at the centre including supporting productive competitiveness in SACU countries.

37. A considerable amount of South Africa's mineral resources are exported as raw ores or only partially processed. Although South Africa has steadily improved its ratio of beneficiated to primary products

exported since the 1970s, these ratios are still well below the potential suggested by the quality and quantity of its mineral resources endowment. The government's industrialisation policy calls for a paradigm shift in mineral development, strategic investment in assets to maximise long term growth beneficiation projects, enhance value of exports, increase sources for consumption of local content and create opportunities for sustainable jobs. Minerals are a vital input to an industrialisation programme, which is intended to accelerate manufacturing in South Africa (for local consumption and export).

38. The government approved the development of a beneficiation strategy for 11 mineral commodities that was designed to strengthen the value-added component of the mineral sector. The minerals are chromium, coal, diamond, gold, iron, manganese, nickel, platinum, titanium, uranium and vanadium. The five pilot value chains identified are energy, steel and stainless steel, pigment production, auto catalyst and diesel-particulate filters, diamond processing and jewellery.

39. The country's mineral beneficiation strategy is underpinned by Mineral and Petroleum Resources Development Act (2002); the Minerals and Mining Policy (1998); the Broad-Based Socio-Economic Empowerment Charter for the Mining Industry; (i.e. Mining Charter), as amended (2010); and the Precious Metals Act, (2005). Furthermore, amendments of Income Tax Act to provide incentives to new manufacturing concerns; the Manufacturing Investment Programme; and the establishment of a new state-owned mining company are all frameworks to deepen the role of the sector in transformation.

40. In addition, multi-stakeholder structures supporting various aspects of beneficiation created to identify and investigate specific value chains also provide support. In the same vein, South Africa's trade agreements also seek to support the beneficiation policy of government.

41. The beneficiation strategy for South Africa also includes instruments such as special economic zones, research and development incentives, tax inducements and international trade agreements which were in place to encourage downstream value addition and investment. Government had also committed to providing transport, electricity and water infrastructure to enable greater beneficiation growth.

42. **Zambia:** The National Long Term Vision 2030, Zambia's first ever written long-term plan, articulates possible long-term alternative development policy scenarios at different points which would contribute to the attainment of the desirable social economic indicators by the year 2030. The Vision is operationalised through the five year development plans and annual budgets. The Fifth National Development Plan (2006 2010) was the first plan to operationalize Vision 2030. The Vision is underpinned by sectoral policies and strategies.

43. The goal of Zambia's National Industrial Policy<sup>6</sup> is to develop a competitive, export-led manufacturing sector that contributes 20 percent of GDP by 2015. The overall policy objectives as stated in the Commercial, Trade and Industrial (CTI) policy document are:

- i. To stimulate and encourage value-addition activities on primary exports as a means of increasing national export earnings and creating employment opportunities.
- ii. To transform the Zambian economy into a diversified and competitive economy which is well integrated into the international trading environment;
- iii. To stimulate investment flows into export-oriented areas in which Zambia has comparative advantages as a strategy for inducing innovation and technology transfer in the national economy;
- iv. To support the effective development and utilisation of domestic productive capacities as a means to increasing output and expanding employment opportunities;
- v. To facilitate the acquisition of modern technology to support value adding, industrial processes by domestic firms;

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<sup>6</sup> Mudenda, 2009.

- vi. To facilitate public and private investments in testing infrastructure to support improvements in the quality and standards of Zambian products;
- vii. To assist domestic firms to increase their levels of efficiency and competitiveness, and therefore withstand increasing competition in domestic and international markets; and
- viii. To formalise, monitor and regulate domestic trade activities with a view to promoting and stimulating a vibrant domestic trading sector; particularly by ensuring fair competition in the domestic market, and also protecting the welfare of consumers.

44. Since the late 1980s, successive Zambian governments have continued to emphasize export diversification as a way of reducing export instability. For example, the Export Board of Zambia was established to promote the production of non-traditional exports and the Zambia Development Agency Act (ZDA, 2006) introduced special tariff exemptions for designated priority sectors, mostly in the manufacturing sector. Other measures included zero rating duty rate on all machinery and equipment for five years, duty exemptions for manufacturing materials, machinery, fixtures and equipment, tools, for motor vehicle assembly, textiles and clothing, cement, roofing sheets and computer parts. Furthermore, manufacturing under bond ensures that manufacturers of ready-made exports are allowed to import their required inputs duty and tax free.

45. As part of the implementation of the ZDA Act, government has embarked upon the establishment of Multi-Facility Economic Zones, under which developers, operators and tenants benefit from a number of fiscal and non-fiscal allowances such tax holidays and imports duties exemptions. The purpose is to promote manufacturing, exports, technological development, skills transfer and job creation. The zones are designed to support firm clusters that can benefit from spatial proximity throughout various industrial processes, from primary production, processing, marketing and sales and ultimately distribution.

46. Mining is one of Zambia's major economic sectors and copper is the country's key mineral accounting for about 75 percent of export earnings mainly as refined copper and unwrought alloys. However, the sector only account for 9 percent of GDP. Mining has accounted for over 85 percent of all foreign direct investment into Zambia during the last decade. Between 1996 and 2011, a total of \$5 billion was invested in the mining sector. The government's policy in the sector focuses on attracting investment for both mining and beneficiation. The Minerals and Mining Development Policy (2013) which replaced the 1995 Mining Policy and draws on Zambia's Vision 2030 seeks to promote a mining sector that is integrated into the domestic economy and which promotes local entrepreneurship, increased demand for local goods, promotes value addition and creates employment for Zambians. The promotion of linkages between mining and agriculture, mining and tourism and mining and value addition industries is emphasized.

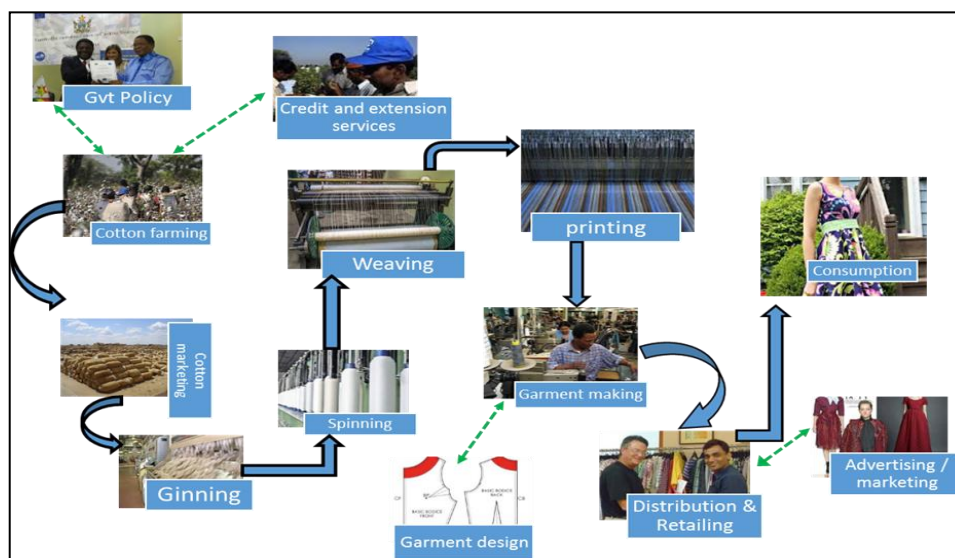
47. The Policy has a specific theme on value addition under which the government commits to promote and facilitate the development of downstream processing capacity for minerals through mechanisms such as: (i) providing a supporting fiscal regime; (ii) exploring the opportunities for the establishment of local metallurgical plant capacity; and (iii) identifying markets for national and regional consumption of value added products. To support R&D in the sector, government commits to facilitate research by creating the necessary conditions and by encouraging partnerships between mining companies and research and training institutions. The importance of regional cooperation is also underlined in the sectoral strategy.

48. The positive impact of domestic or regional industrialization policies and frameworks within Southern Africa can, in part, be gauged by the extent to which they have led to the creation of domestic or regional value chains and the generation of jobs. This section of the report explores the importance of value chains as well as the participation of SADC member States in regional and global value chains.

## Section 4: Regional and National Commodity Value Chains

49. Value chains denote the processes involved in product development from initial extractive process (in minerals) or primary production in crop or animal husbandry, to the final consumption phase. Typically, each process adds more value along the chain and can take the form of a material transformation (e.g. spinning a fibre to a yarn), or a service application (such as transport from a ginnery to a spinner). Value chain analysis helps us to understand the connection to other actors in the chain. It addresses the question: Who adds how much value and where along the chain? **Figure 2** shows an example of a typical value chain in the cotton agro-industrial cluster.

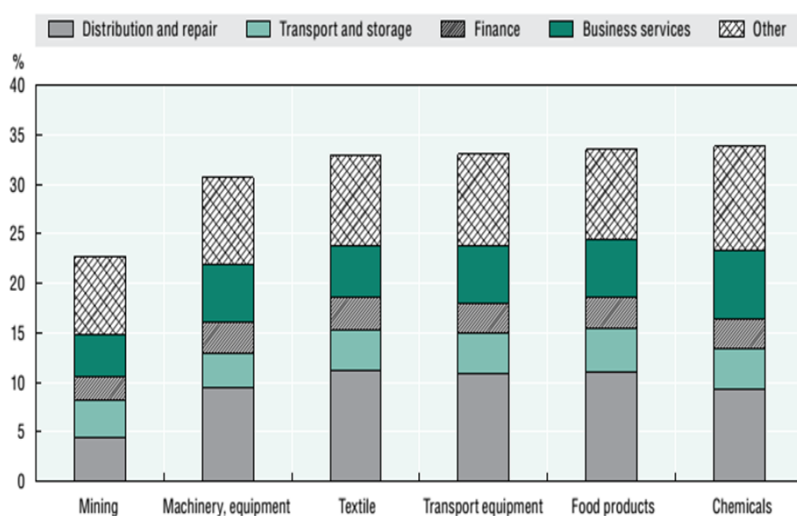
**Figure 2 - Illustration of a Typical Cotton Value Chain**



50. Services contribute significantly to value chains. Whilst some services are directly connected with a product such as transport or warehousing, other services are less obvious such as banking and finance, but they all contribute to the value of a product at the various stages. However, similar services can add different values to different products. In addition, the overall contribution of

various services to the total value of a product also varies between sectors (see Figure 3).

**Figure 3 Services share of value added in manufacturing trade, all countries, 2009**



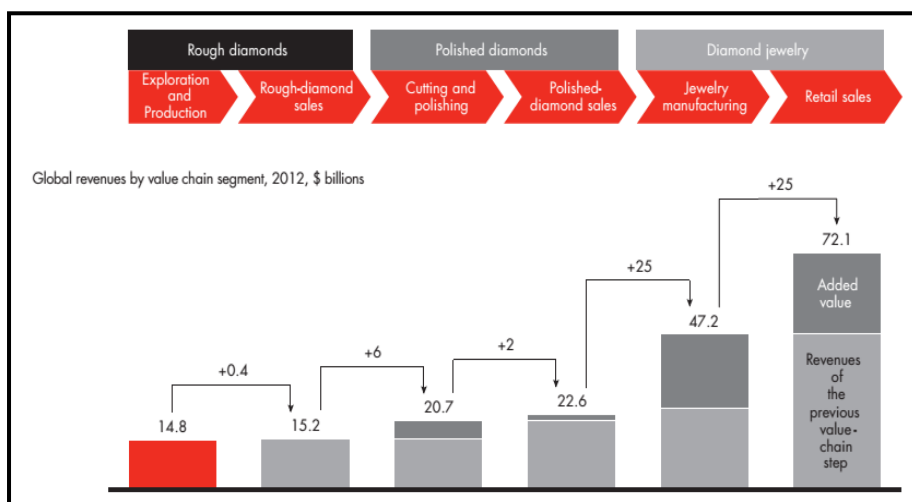
Source: OECD, WTO and UNCTAD (2013).

51. “The OECD/WTO Trade in Value Added database reveals that the value created directly and indirectly by services as intermediate inputs represents over 30 percent of the total value added in manufactured goods.” (*ibid*)

52. The value chain concept also enhances our understanding of the way trade takes place today. Research on value chains shows that an increasing amount of international trade occurs within trading networks.” (McCormick and Schmitz, p 21) The benefit accruing

to economies in the value chain process are dependent on the number and level of processes and services, or parts of the chain, which are undertaken within a country’s borders. In the diamond industry for example, whilst diamond extraction is generally a profitable activity generating profitability of between 16 percent to 20 percent, more value is realised in the production and sale of jewellery (See **Figure 4**).

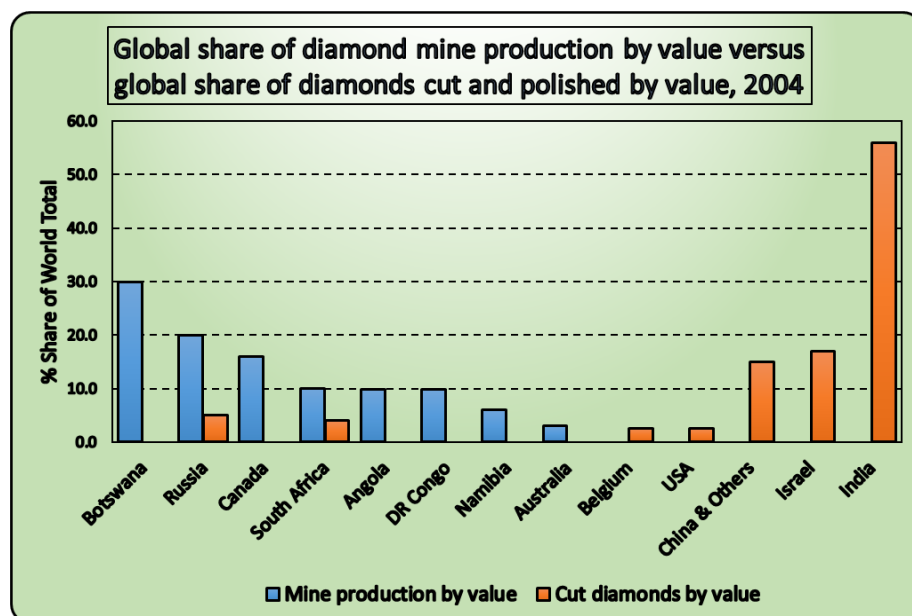
Figure 4: Value escalation - Global Diamond Value Chain<sup>7</sup>



benefits beyond activities surrounding the mining of ores, initial smelting to semi-worked forms and their transportation to sea-ports. Higher level value addition takes place in other countries and this results in the anomaly shown in Figure 5 where the major diamond producing countries are not the major producers of cut and polished diamonds. The world's major diamond cutters and polishers, India and Israel are not diamond mining countries. Over time, they have perfected diamond cutting and polishing skills and have built networks with producers and markets. They have become the centres of the high end of the diamond value chain able to produce cut stones at the lowest cost.

Figure 5: Global share of diamond mine production by value versus

Global share of diamonds cut and polished by value, 2004<sup>8</sup>



Beneficiation Strategy has identified five such sectors for special targeting as part of its industrialization strategy, coal, uranium and thorium, iron and steel, pigment and titanium metal production, as well as platinum group metals (for autocatalytic converters, diesel particulate filters, and jewellery fabrication).

53. This illustration is relevant for SADC as eight member States are diamond producers and all seek to participate in higher stages of the diamond value chain for obvious reasons. Countries that are active in these stages of value chains realize the greatest benefits. Most resource rich SADC member States are immersed in lower levels of the Global Value Chains (GVCs) where the realised benefits are generally lowest. In the mineral value chain, there are limited

54. Accelerating industrialisation in Southern Africa therefore necessarily calls for regional countries to devise strategies to move away from the export of primary commodities at the initial stages of the value chain but to invest up to later or final stages of the value chain.<sup>9</sup> A key part of the strategy involves each member State identifying commodities in which the country has comparative advantages that can be transformed into competitive advantages through targeted interventions. For example, South Africa's Minerals

<sup>7</sup> Global Diamond Report 2013

<sup>8</sup> Adapted from Baxter R

<sup>9</sup> McCormick and Schmitz, p 11

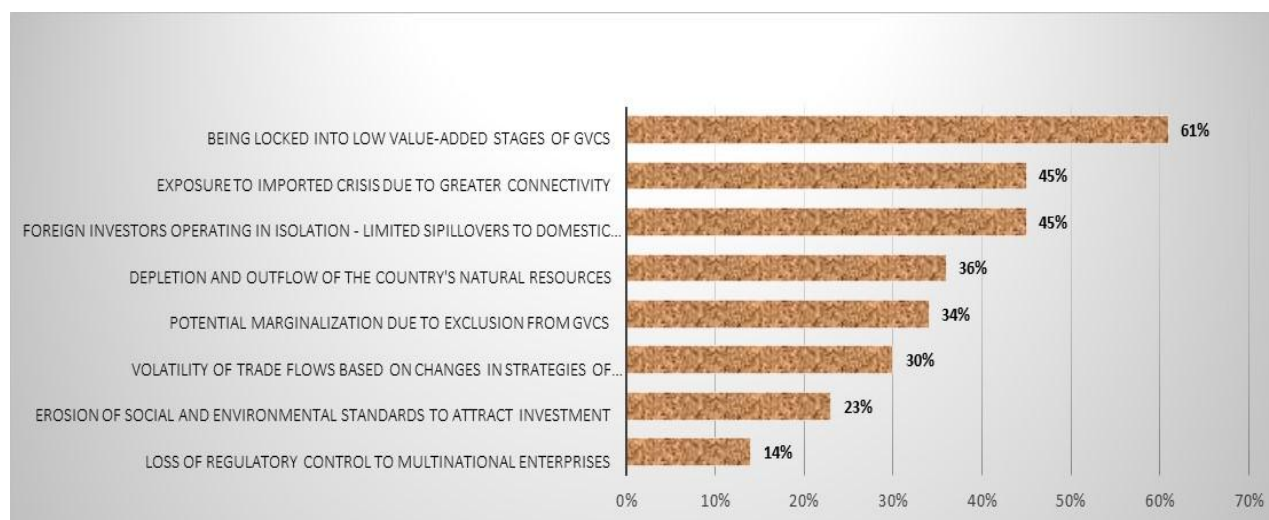
Similarly, the seven<sup>10</sup> mineral resource-based growth poles which have been isolated in the SADC region can be the springboard of industrialization efforts through value addition and beneficiation which can create industrial clusters.

55. However, participation in GVCs has risks irrespective of the entry point. Figure 6 shows some of the risks encountered which member States should be aware of. Experts view being locked onto low value-added categories of the GVC as the greatest threat that can arise if firms do not take measures to upgrade by acquiring new capabilities. Similarly participation in regional value chains must also be approached with caution as the threats may be the same.

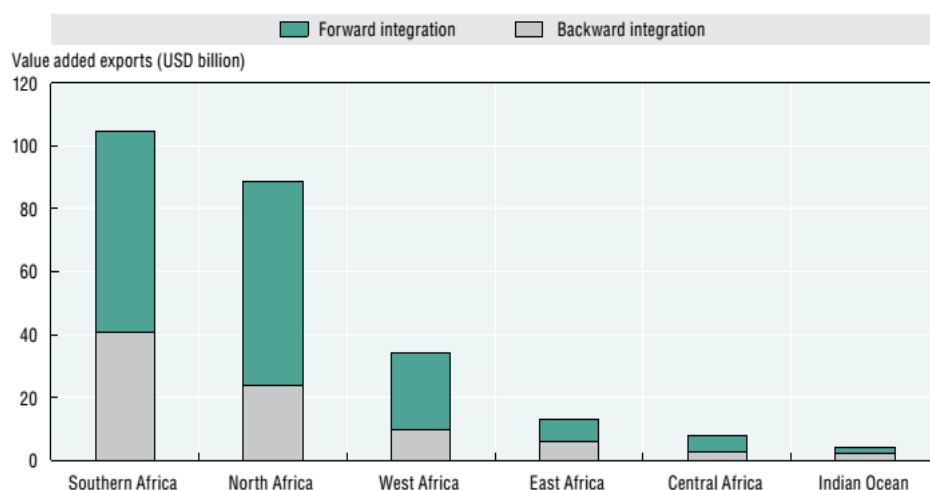
56. According to data from the African Economic Outlook (2014) on the participation of African regions in global value chains, Southern Africa leads ahead of North Africa and West Africa although these latter regions are strongly driven by forward integration (See Figure 7). Southern Africa accounts for about 40 percent of Africa's global value chains participation, one-third of which is backward integration, where local benefits are lowest. A review of value chains development in selected SADC member States will highlight the challenges.

**Figure 6: The greatest threats associated with global value chains and resultant new trade patterns**

Source: African Economic Outlook 2014



<sup>10</sup> Tete, Mozambique - Southern Malawi (hydrocarbons, ferrous metals and phosphates); Copperbelt, Zambia- Copperbelt, DRC (base metals); Cabinda, Angola - Bas Congo, DRC - Soyo, Angola (hydrocarbons and phosphates); Rovuma Basin, Mozambique - Ruvuma and Songo-Songo Basins, Tanzania (hydrocarbons); Lephalale, South Africa - Morepule, Botswana (hydrocarbons); Kabanga, Tanzania - Musongati, Burundi (base metals); and, Central Zimbabwe - Central Mozambique (hydrocarbons and ferrous metals).

**Figure 7: Integration of African regions into global value chains, 2011 (AEO 2014)**

## Section 5: Value Chains in Southern Africa

57. **South Africa:** South Africa, leading economy in the region and the largest African trading partner for all countries in SADC, uses intermediate goods from other economies in the region. Its use of these intermediate inputs increased nine-fold between 1995 and 2011 from USD 78 million to USD 686 million. In turn, South African intermediates embedded in the exports of other economies in the region increased five-fold over the same period from USD 675 million to USD 3 487 million. On the other hand, Botswana, Namibia, Swaziland, Zambia and Zimbabwe all source more than 10 percent of intermediates from South Africa. According to *AEO (2014)*. South Africa is integrated deeper into several global value chains than other regional countries. This is particularly significant in the automobile, mining, finance and agriculture industries. South Africa ranks second amongst the BRICS countries in terms of the content of foreign value-added to exports and participation in global value chains. For example, while China's exports contain 37 percent of foreign value added, those coming from Brazil, India and Russia with 15 percent or less and those from South Africa contain 16 percent. The South African automotive industry adds value to exports amounting to 40 percent, a reflection of the country's position in the world motor industry global value chains. The experience gained by South African industry working with the local assembly lines has enabled local firms to penetrate global value chains to become, for example, exporters of components such as catalytic converters and leather seats.

58. The country's advantages in global value chains emanate from well established companies with leading products and competencies, public research linked to firms, relatively well-developed and dense networks of local supply industries and services and geographical clustering. However, skills shortages are manifesting themselves at various levels, particularly amongst engineers and artisans, with many firms acknowledging this challenge which is becoming more acute. As reported in *AEO (2014)*, in order to increase the depth of value chains, measures that target skills development, expansion of technological capabilities, R&D and access to capital are essential. Yet currently in South Africa the ratio of engineers per capita is low at 1:3166 compared to 1:227 for Brazil, 1:130 for China and 1:157 for India (Chamber of Mines, 2013). The shortage of skills for innovation remains a challenge

59. **Mozambique:** Mozambique has a residual place in global value chains. Aside from natural gas, electricity and aluminium, representing more than 66 percent of exports, Mozambique mostly exports unprocessed agriculture products (cashew, cotton, shrimp, wood and tobacco) as well as coal, tantalum and gold which the industrial policy seeks to change as the country remains rooted at the lower end of the value chain. Generally, the economy is focused on the primary sector and particularly the extractive industries. The recent prominence of the extractive sector has brought about limited industrial transformation as linkages are still poor. Economic activity occurs mostly at the primary input level, with little added value



both on the upstream and the downstream processes. The aluminium industry, while not integrated at home, is, however, integrated in the global value chain through the Mozal megaproject. Established in 1999 as the country's first megaproject with an initial investment of USD 1.34 billion, (increased to USD 2.2 billion in 2003) the aluminium smelter plant is currently the second largest in Africa.<sup>11</sup> Currently 1 200 people are directly employed by Mozal, of which over 80 percent are Mozambicans.

60. Recently some progress has been made in integrating Mozambique into the global value chain through a deal was signed in 2013 between Mozal and Midal Cabos, a subsidiary of the Bahrain-based Midal Cables, for the first aluminium processing industry in the country to be built in an industrial park beside the Mozal plant.<sup>12</sup>

61. **Angola:** Currently, Angola produces 1.8 million barrels of crude a day and refines about 39 000 barrels per day against total domestic demand for 85 000 barrels each day. The country exports 90 percent of its oil production, primarily to China (44 percent) and the United States of America (25 percent) (*ibid*).

62. Despite the fact that all material inputs are imported, there are opportunities for Angola to enhance its position in the global value chain and broaden its participation into sectors such as liquefied natural gas, methanol, power gas transmission and gas-to-liquids. Angola is more likely to integrate into the oil and gas value chain and play a catalytic role at regional level by: i) major investment in liquefied natural gas; ii) adopting a phased approach to developing oil and gas downstream industries, starting with high impact projects to demonstrate Angola's viability; iii) additional investment in fertilizers, methanol and gas-to-liquid downstream industries; and iv) improving the regulatory framework by ensuring stable transparent regulations, encourage transparency and address capital gain taxes. Angola's agricultural and mining sectors (except diamonds) are not yet developed to offer opportunities for value addition.

63. **Zimbabwe:** Zimbabwe is experiencing a structural regression, with the acceleration of de-industrialisation and informalisation of the economy. Various Confederation of Zimbabwe Industries manufacturing sector surveys suggest that industrial capacity utilisation was as low as 39.6 percent in 2013. In 2004, 84 percent of jobs in Zimbabwe were in the informal sector in 2011.<sup>13</sup>

64. The country is currently integrated in global value chains in agriculture (tobacco, sugar, cotton and horticulture), mining (diamonds, ferro-chrome, gold, and platinum) as well as regional value chains in manufacturing (food and beverages, clothing and textiles, wood and timber, fertilisers and chemicals and pharmaceuticals) (*AEO, 2014*). In many of these commodities, the integration into global value chains is at the lower end.

65. The country's mineral endowments including diamonds, chromite platinum group metals (PGM), copper, asbestos, lithium, tin, iron ore, coal, precious stones, gold, nickel and others are mainly produced and exported in semi-processed forms. For example, value addition in the PGM sector has not commenced due to the lack of a refinery. Plans are underway for a joint refinery to service all mining companies in Zimbabwe.

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<sup>11</sup> Andre Almeida-Santos, Luca Monge Roffarello, Manuel Filipe, p 13

<sup>12</sup><http://www.constructionweekonline.com/article-21010-bahrain-midal-to-process-aluminium-in-mozambique/>

<sup>13</sup> <http://www.africaneconomicoutlook.org/en/countries/southern-africa/zimbabwe/>

**Table 4: Global Supply of Refined Platinum<sup>14</sup>**

Sources of refined platinum available for sale	Refined platinum 2012 ('000 ounces)	Implied global market share
South Africa	4095	53%
Russia	800	10%
Zimbabwe	340	4%
North America	295	4%
Other	110	1%
Recycle	2030	26%
<b>Total</b>	<b>7670</b>	<b>100%</b>

66. Prior to the onset of the current economic challenges, some value chains and industrial clusters based on natural resources were well developed. For example, iron ore mining and the steel sector supplied inputs to steel based industries such as for the manufacture of agricultural and other household implements as well as the building and construction sectors. In the agricultural sector, Zimbabwe the cotton, tobacco, tea, sugar in addition to food crops such as maize, sorghum had competitive value chains which had penetrated the regional markets. With an expected tobacco output of about 206 million kilogrammes in 2014, opportunities to increase cigarette manufacture to serve the regional market and this could strengthen the regional value chain around tobacco. The phosphate mining sector and the production of chemicals fertilizers was well integrated into the agricultural sector in the region.

67. Sugar-cane is one of the most important agricultural export crops in Zimbabwe, along with cotton and tobacco. The introduction of petrol blending legislation in 2013 requiring, the local value chain around the sugar sector has deepened Table 5.

**Table 5 Chisumbanje Ethanol-From-Sugar-cane Project**

<b>Company</b>	<b>Greenfuel (PVT) Ltd.</b>
<b>Ownership</b>	Co-owned by private investors and Government of Zimbabwe (through ARDA Estates)
<b>Concept:</b>	Value addition to sugar cane to produce fuel quality ethanol for blending with imported petrol
<b>Construction</b>	Fabricated locally using imported materials, utilising local skills
<b>Technology</b>	Ethanol from sugar-cane technology imported from Brazil
<b>Production</b>	200,000+ per day
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Reduces fuel import bill (saving foreign currency)</li> <li>• Employs 5,500 during peak times, set to rise to 7,700 following expansion, majority non-technical from local community</li> <li>• development of 1,000 hectares of irrigated sugar cane</li> <li>• Cane out-grower scheme benefitting small farmers</li> <li>• 18 Megawatts of electricity generated from bagasse, a process by-product sufficient to power 30,000 households (set to rise to 50 MW capable of powering 90,000 households); increases energy independence</li> </ul>
<b>Government support</b>	Statutory Instrument enforcing compulsory blending of all petrol (5%-15 percent ethanol depending on availability) retailed in the country
<b>Future ambition</b>	4 ethanol plants on 46,000 hectares of irrigated land producing 1.5 million litres of ethanol for domestic consumption and export to neighbouring countries

Source:  
Adapted  
from  
[www.greenfuels.co.zw](http://www.greenfuels.co.zw)

<sup>14</sup> Andrew Hinkly of Anglo American Platinum was presenting a paper The Catalyst for Change at Conference at LBMA LPPM conference: Rome, 1 October 2013

68. **Namibia:** Namibia has the potential to step up its integration into a number of global value chains. Although some diversification has occurred in the structure of the Namibian economy over the past three decades the economy has remained narrow and resource-based. While the contribution of mining shrunk from 19.6 percent by 1990 to 12.6 percent in 2012, that of manufacturing sector to GDP increased from 5.3 percent in 1990 to 12.7 percent in 2012, due mainly to the rapid expansion of fish and meat processing and some mineral beneficiation.

69. The country produces a variety of minerals, including diamonds, uranium, lead, gold, copper and zinc and has some of the richest fishing grounds in the world. The extraction and the processing of minerals – mainly diamonds – for export remain the country's main growth driver despite the relative decline in the contribution of mining to GDP in recent years. Only about 10 percent of the diamonds cut and polished locally. The diamond sector presents opportunities for value chain linkages with the Botswana Diamond Hub, in cutting, polishing jewellery manufacture and marketing.

70. As part of the SACU<sup>15</sup> common industrial policy, research is being conducted to determine whether the manufacturing of automobile parts across the region would be a viable cross-border value-chain industry. Namibia's proximity to South Africa means that it can take advantage of the opportunities arising from global value chains, expertise, research and development, advanced technology, developed infrastructures, relatively advanced intermediate input and goods markets, marketing and distribution and after-sales services, capital and financial markets and investment resources.

71. **Madagascar:** Like all SADC member States, Madagascar's participation in global value chains is concentrated in the export of unprocessed commodities to Western Europe and North America whilst importing non-food consumer goods from mainly China and France. The country participates in regional value chains through the import of food items from SADC and COMESA regions. As noted in AEO (2014), the textile-manufacturing free zone is an exception in that it is not limited to unprocessed products and also includes transformation and processing activities.

72. Madagascar could also boost its GVC participation through its natural resources of agriculture and minerals beneficiation. Although agriculture is dependent on some plantations and subsistence farming (especially for food crops), the country produces sugar cane, cassava, coffee, cotton and sisal. Cotton, sugar cane, coffee, nickel and cobalt offer opportunities for beneficiation in Madagascar.

73. **Malawi:** Malawi's economy is highly dependent on export of a few commodities, rendering it vulnerable to exogenous shocks which the country can minimise through value addition and further processing. The main export commodity is tobacco, which accounts for 60 percent of Malawi's foreign exchange earnings. Other key export commodities include tea, sugar, and cotton and uranium. Malawi is currently anchored at the bottom of the global value chains of its export commodities. (AEO, 2014)

74. The share of manufacturing in GDP has declined during the past decade from 15 percent to 10 percent. Malawi's industrial base is very narrow with existing manufacturing activities limited to low-value agro-based processing. The industries mainly supply the domestic market although some clothing, based on imported fabric, is also exported.

75. Malawi has significant potential to diversify into the export of higher value products through branded tea, tobacco and other products. For example, Malawi Mangoes, a new large-scale fruit-processing plant located in Salima along Lake Malawi, is an example of a value addition project which could have regional dimensions. The emerging oil sector in Malawi presents opportunities for developing a petro-chemicals industry with links to the national and regional economies.

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<sup>15</sup> SACU comprises of Botswana, Lesotho, Swaziland, Namibia and South Africa

76. **Swaziland:** Foreign firms have been the key drivers of global value chains in Swaziland. Swaziland's trade openness ratio is about 1.94, meaning that global value chains form a critical part of the country's economic activities. These value-added exports include sugar and sugar products, forestry products, processed fruit products, textiles, soft drink concentrates, refrigerators and, more recently, pneumatic drills. (AEO, 2014).

77. **Tanzania:** Tanzania's current role in global value chains is low compared to other countries in the region. Like most regional countries, exports are dominated by semi-processed natural resources. For example, the country's exports to Asia, Kenya and Uganda are dominated by unprocessed products including gold (33 percent), raw tobacco (5.9 percent) precious metal ore (5.6 percent), coffee, coconuts and cashew nuts. The country's very shallow involvement in global value chains exhibited itself during the 2008/09 financial crises when the country's trade performance was hardly affected (AEO, 2014). Though Tanzania is endowed with rich mineral resources such as nickel, iron, copper, gold, uranium, titanium, and vanadium, for example, development has been slow due to lack of capital and poor infrastructure. Most of the FDI goes into Tanzania is in the extractive and tourism sectors, where there is little local value-addition.

78. **Zambia:** There are some products in Zambia that are well suited to integration in global value chains, with the potential for further development and these include, copper, gemstones and agricultural products. The copper sector is already creating higher value through smelting and refining copper into cathodes for exports. To this end, the MFEZs have added a new dimension to copper value addition. Two MFEZs have been developed and are already operational. Four others are still at early development stages. The zones are located in the Copperbelt, North-Western and Lusaka regions. Chambishi MFEZ in the Copperbelt is focused mainly on the copper supply chain and houses both heavy and light industries, including copper smelting, manufacture of copper wire and cables, household appliances such as stoves, motor parts and agro-processing. More than 10 enterprises have been established, creating over 3 500 jobs. (AEO 2014).

79. The gemstones sector has the potential for integration into the global value chain. The local auctioning of locally produced gemstones is a first step in stimulating local beneficiation as well as local market development. Initiatives to enhance local skills in cutting, polishing, jewellery design and production and marketing and sales will be need as part of a holistic strategy for the sector.

80. In the agriculture sector, agri-business has demonstrated consistent growth, particularly in livestock production, providing linkages to the dairy, beef and leather industries. For example, the beef, sugar, cotton and honey sector value chains are well developed with the participation of both large and small scale producers. In honey production, outgrower schemes enable beekeepers cooperatives to produce honey. The value addition is significant, with more than 10 000 beekeepers occupied in major production areas of north-western Zambia. Similarly, Zambeef has vertically integrated its different businesses along the value chain, from farming to beef and dairy production, manufacturing, processing and retail. The company has enlisted local farmers to supply cattle for slaughter as well as milk. The meat, leather and milk and milk products are sold locally and internationally. The company also produces pork and pork products. Through these value additions the company has been able to create over 5 500 direct jobs. The textile industry has historically been significant in this country, with over 140 companies operating taking advantage of cotton grown in the country. However, threats from imported second-hand clothes and low-cost textiles from Asia has undermined the sector.

81. The foregoing review has shown the potential and opportunities for value addition and beneficiation in the various commodities produced in the region. It also showed the current levels of value addition and the participation of member States in various commodity value chains. With the slight exception of South Africa in a few cases, most countries in the region are at the lower-end of the value chains and this affects the benefits derived from such participation. With the comparative advantage in natural resources as described in the preceding section and the policy framework, the question remains as to why member States

have not accelerated value addition and beneficiation. It is instructive to review the constraints and challenges in the sector.

## **Section 6: Constraints and Challenges to Beneficiation and Value-Addition in the Region**

82. The member States national industrial policies as well as the regional policy framework enumerate the region's challenges to industrialization and optimal participation in regional and global value chains. However, the key and common constraints to beneficiation and value addition include: finance, inadequate infrastructure, lack of skills, limited R&D, a small private sector and lack of policy harmonization, among others:

- i) **Lack of Finance for Industrial Development:** Value addition and beneficiation is costly and thus the lack of access to affordable financial resources, especially for the small and medium scale industry sector. For example, in Zimbabwe, limited access to long-term finance for capitalisation has severely impacted on value-addition activities resulting in capacity utilisation of below 40 percent in 2013.
- ii) **Poor and Inadequate Infrastructure:** The high infrastructure deficit in SADC leading to limited access to markets and uncompetitive costs of doing business. Infrastructure concerns have limited prospects for industrial take-off in Angola and Mozambique. Mozal had to build a dedicated port at Matola whilst Rio Tinto is building a rail line from Tete to Nacala to transport material. Furthermore, beneficiation is energy intensive so consistent and affordable energy supply is required. Despite the power pooling arrangements under the Southern African Power Pool, the region is currently struggling with insufficient electricity supply leading to periodic power-cuts, even in South Africa.
- iii) **Limited Investment in R & D, Science, Innovation and technology.** R&D and innovation are the building blocs of industrial development. Yet this is poorly supported in most member States in SADC. Even in South Africa, the largest economy, only less than 1percent of GDP is devoted to R&D. For a leap in industrialization, countries need to strengthen research institutions, invest in material sciences and engineering. For example for the minerals sector support to Mintek in South Africa and the Institute of Mining Research in Zimbabwe for fundamental research in value addition. The evolution of the South African industrial complex with state support in R&D has lessons for the region. Collaboration with the private sector is also key.
- iv) **Limited Industrial Skills:** Inadequate human capital and skills for industrial processes, science and technology is a major constraint to industrial development. As noted in this report, value addition and beneficiation are skills intensive activities and skills for these activities are generally in short supply in the region. Experts in material sciences, mathematics and engineering, the skills required in innovation and industrialization are not readily available across the region and need to be developed.
- v) **Small Private Sector:** The poorly developed, under-resourced, highly under-capitalized and small private sector has limited capacity for extensive and expensive R&D and innovation. The sector also faces difficulties to comply with international certification standards and quality requirements and thus struggle to support R&D. The sector requires a supporting framework.
- vi) **Environmental Regulations and International Trade Issues:** New requirements for dealing with environmental and climate change, especially on emissions also impact on beneficiation, tariff escalation on the international markets and the centralised R&D strategies of trans-national mining companies.
- vii) **Lack of Policy Harmonization:** Poor coordination between trade, investment and industrial policy as well as other cross-cutting policies and regulations with the result that trade and investment agreements have constrained the policy space for industrialization. The harmonization and alignment of policies ensure that there is complementarity within and across nations. In country and cross country sectoral policy harmonization is key for a regional approach to industrialization.
- viii) **Limited Access to Raw Materials:** The current structural arrangement of the mining industry, which remains geared towards the export of raw material, with the bulk of current producers firmly stuck in long term contracts with their international buyers limits access to raw materials for local

fabricators. This has been identified as a major constraint for the South African mining industry. Some countries in the region have introduced regulations to overcome these challenges. For example, Zimbabwe has used strategies such as the ban of exports of chrome ore, retention of cotton lint for local spinners, retention of tobacco leaf for cigarette manufactures and more recently allocating a proportion of the local diamond output to the local cutting and polishing industry. Similarly, Namibia and Botswana are reserving some diamonds for local cutting and polishing. South Africa is working on reserving some PGMs for local processing despite the pricing challenges.

83. Furthermore, nationally focussed beneficiation strategies face the challenges imposed by a small domestic market. A regional approach becomes an imperative for economies of scale.
84. The constraints enumerated impact on value addition and beneficiation strategies pursued by countries individually and the SADC region as a whole. The section below discusses some of the possible strategies to deepen beneficiation and value addition as well as enhance participation in regional and global value chains at a higher level.

## **Section 7: Strengthening National and Regional Beneficiation and Value-Addition**

### **(i) Financing Industrialisation and Institutional Developments**

85. Innovative financing mechanisms are required to address the industrial capacity constraints caused by the lack of affordable finance. Possible funding options for industrial development in the region could include, but are not limited to, the following:

- i. *Prescribed Budget Allocation for Industrial Development:* Direct state support to industrial development especially to value addition and beneficiation R&D in strategic minerals has been successful in some countries in the region. The evolution of SASOL, Industrial Development Corporation and other leading research and innovation institutions like the Centre for Scientific and Industrial Research and MINTEK into internationally competitive institutions is owed to deliberate State support through annual budgetary allocations.
- ii. *Enhancing South-South Cooperation:* The partnership between SADC and the South should also include industrial development strategies. Rather than continue the core-periphery model of development which Africa had with the West, the relationship with China and the other BRIC nations should include technology transfer and the development of linkages on the continent through the establishment of small and medium scale processing facilities. The current resources for infrastructure arrangements should focus on local industrial development, value addition and beneficiation. Rather than exporting iron ore, the relationships should investigate prospects of completing the value chain on SADC's shores through the upgrading of iron and steel facilities already existing in the region
- iii. *A Value Chain Approach:* Funding for industrial development can be looked at from the value chain perspective of how linkages in the chain can be used for the benefit of the whole chain. The Mozal Mega project has evolved through a value chains model and this could be replicated.
- iv. *Regional and Domestic Funding Mechanisms:* Through properly structured incentives, domestic financial institutions can play a role in funding long-term capital requirements of industrialization initiatives in the region. At regional level, the SADC Regional Development Fund should also be capacitated to provide long-term finance for demonstrably viable value-adding and beneficiation enterprise development, especially those projects which have regional dimensions which can yield greater benefits.
- v. *Creation and use of Sovereign Wealth Funds (SWFs):* The natural resources boom during the last decade increased earnings from the minerals sector, especially for those countries which had properly configured fiscal frameworks. Angola, Botswana and Namibia have established sovereign wealth funds from the proceeds from the minerals sector and these could be invested in value addition activities, beneficiation, R&D and infrastructure. Recently, Zambia and Zimbabwe

announced plans to introduce sovereign wealth funds. In Zimbabwe, a bill is currently before parliament for the establishment of SWF from mineral resources proceeds.

86. Importantly, financing for industrial development in SADC member States should target SMEs. This is recognised in the policy documents of member States. SMEs have proven to be a key driver of industrialization and structural transformation around the world and thus support to the sector is a critically important strategy for SADC member States. This sector, while innovative and willing to contribute to industrial development, faces major financial constraints. The funding arrangements for SMEs should be improved by: (i) creating specialized financial institutions to accommodate the special needs of the SME sector; (ii) creating hybrid capital mechanisms; (iii) developing cluster models for raising funding which builds greater confidence between lenders and SMEs based on provision of collective guarantees to financial institutions; and (iv) provision of specialized lines of credit targeting the SME sector. The role of the state in providing the required collateral in these financing tools is fundamental.

## (ii) R&D, Innovation and Technology Development

87. Technology, innovation and R&D are key ingredients for industrial development. However, R&D and technology acquisition is not cheap. There are several methods by which member States can employ to access technology for beneficiation and value addition. This can be through purchase of plant and equipment e.g. Chisumbanje Ethanol plant in Zimbabwe, through linkages with technologically more advanced firms in a value chain e.g. motor vehicle component manufacturers in the South African Motor Industry and Mozal in Mozambique; and focussed research at the level of the firm as well as at technology research institutes, SASOL and can be part of the package of foreign direct investments.

88. The region should endeavour to create centres of excellence in science and technology to spearhead the required fundamental research in industrialization and industrial processes. Institutions such as the African University of Science and Technology in Abuja (Box 1) and the African Institute of Science and Technology in Arusha provide infrastructure where skills can be nurtured and innovation supported. Zimbabwe<sup>16</sup> has also tabled a proposal to launch a centre of excellence in minerals sciences and technology. South Africa has several centres of excellence such as the Central University of Technology specialising in titanium. These centres are part of the African Union framework for capacity development. These centres can play a leading role in R&D and in producing high quality scientists to lead industrial development.

### Box 1: Creating Regional Centres of Excellence – West Africa

<p>The African University of Science and Technology (AUST) was set up in Abuja in 2007 to become a regional center of excellence, as was the the African Institute of Science and Technology in Arusha in 2009, with the support of governments and the World Bank. Both offer masters and doctoral programs, accepting students from all African countries. AUST issued 64 master's degrees and one doctoral degree in 2013. In 2011 a student from AUST won the Bernard Ziegler Award for work on discrete event systems, modeling language and</p>	<p>graphical simulation, with a professor from Blaise Pascal University in Clermont-Ferrand, France.</p> <p>The International Institute for Water and Environmental Engineering was set up in Ouagadougou in 2006 to train professionals for 14 West and Central African countries. It has since trained 5,000 and now has 2,000 students on campus (from 27 countries) and 1,500 distance learners (from 43 countries worldwide). Some 90% of the institutes graduates find work within six months of graduating.</p>	<p>In 2012 two students won an entrepreneurship award at the Global Social Venture Competition (University of California, Berkeley) for coming up with a highly nutritious powder to fight malnutrition, called FasoProt. And in 2013 two others won the grand prize at the same competition, the first by non-Americans, for inventing a soap to fight malaria, FasoSoap.</p> <p>Source: <a href="http://www.nm-aist.ac.tz">www.nm-aist.ac.tz</a>, <a href="http://www.aust-abuja.org">www.aust-abuja.org</a>, and <a href="http://www.2ie-edu.org">www.2ie-edu.org</a>.</p>
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<sup>16</sup> Pan African Minerals University of Science and Technology

### (iii) Human and Institutional Capacity

89. The industrial Policy frameworks of Zimbabwe, Mozambique, Malawi, South Africa, Namibia, Madagascar, Angola and Tanzania and of the region, all allude to the shortage of critical skills shortages especially in science and technology as a constraint to R&D and industrialization. A clear identification of the skills gap is required so that collaboratively member States can coordinate strategies on skills development. A regional technical skills mapping exercise should precede the creation of a data bank on skills relevant for the manufacturing and to support value-addition activities. The mapping should also develop a database of training and research institutions and their curriculum. The study currently being undertaken by the SADC Secretariat, with support from UNECA, on skills mapping in the minerals sector should be extended to include other sectors.

### (iv) Regional Integration and Market Development

90. As discussed elsewhere in this report, the regional integration agenda is already being reformed to give prominence to industrialization, to enhance regional production capacity and address other supply side constraints such as the high cost of services in the region. The IUMP fits in well with the change in priorities to front-load the implementation of the industrialisation policy. The capacity to produce is what is needed to make free trade have meaning especially for the less developed member States. Regional integration would increase market size, enable firms to enjoy economies of scale and pave the way for the development of regional value chains, which could lower input costs by reducing the high cost of sourcing goods from outside the region. Furthermore, greater regional integration would also enable firms to access different skills and endowments like gas in Mozambique, oil in Angola, minerals and agriculture in Zambia and water in the Democratic Republic of Congo. Integration under the EAC-COMESA-SADC Tripartite<sup>17</sup> agenda provides further impetus for industrialization from a larger market. However, successful regional integration would require the harmonization of industrial policies, the identification of specific country endowments and the standardisation and alignment of regulations.

91. Furthermore, the SADC Trade protocol should be an enabler to industrialisation in the region. The three pillars under the Tripartite, industrialization, free trade and infrastructure, should be at the centre of efforts in the region. Scope exists to identify markets that enable investment into value chains in the various commodities. For example, the various elements in platinum group metals provide opportunities for growing these value chains, especially for the motor car industry. Zimbabwe and South Africa could collaborate in adding value to the PGMs produced by the two countries. South Africa's mature motor car industry presents a ready market for autocatalysts.

92. In a similar manner, Botswana's experience with the establishment of the Diamond Hub has important lessons for other countries in the region. Transparent diamond revenue management has helped the country develop and the Hub has seen the country realise more benefits from both marketing and adding value to its diamonds (**Box 2**). This Diamond Hub experience, though still evolving, could be exploited by other diamond producers in the region for greater regional benefits through economies of scale. For example, the country could provide services to neighbouring Zimbabwe and Namibia, other diamond producers.

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<sup>17</sup> [www.comesa.int/](http://www.comesa.int/).



## Box 2: The Benefits of Adding Value to Botswana’s Diamonds Locally

<p>More than \$3 billion worth of De Beers diamonds have been sorted in Gaborone in the first eight months since the industry leader recently relocated its diamond aggregation and distribution activities after some 80 years in London.</p>	<p>Previously all of Botswana’s rough diamond production went to the trading arm of De Beers in London, which then aggregated the Botswana stones with its stock from around the world and sold most of them to its dealers (sight-holders) in Antwerp, Mumbai, New York, and Tel Aviv (with China and Thailand growing in importance). With that arrangement, Botswana was not much different from most other resource-rich African countries: extracting the minerals and exporting them for value addition elsewhere; this, in an industry where only \$15 billion of the \$71 billion final value is captured before cutting.</p>	<p>cutting, polishing, jewelry making, retailing, logistics, and information technology, and sophisticated security services. If successful, it would create jobs, diversify the economy, and make it resilient in the post-diamond mining world.</p>
<p>The move is part of a comprehensive 10-year deal that started with the 2006 renewal of the lease of the mines and was completed with the government of Botswana in September 2011. Also emerging from the negotiations was an agreement for De Beers to sell at least 10% of the rough diamonds it mines to a state-owned company in Botswana, rising to 20% by the end of the 10-year agreement. With that provision the world’s biggest diamond-producing country by value can market more of its own diamonds and create incentives for more value addition in-country.</p>	<p>But the government has long aspired to move from mere extraction to the more profitable stages of the value chain. Its strategy has been to become a diamond hub, one that creates high-value services, such as</p>	<p>On full execution of the program, an estimated \$6 billion worth of diamonds will be processed through the country each year, with \$1.2 billion available for local processing, up from \$800 million before. Dozens of the world’s top diamantaires will converge on Botswana to buy diamonds (and, no doubt, stay at a hotel, eat local food, perhaps sneak in a safari, and identify other business opportunities). That is certain to raise Botswana’s global profile and help it attract additional foreign investors in copper, nickel, iron ore, and nonmineral sectors.</p>

Source: ACET research.

## Section 8: Conclusions and Recommendations

### Conclusions

93. The review has shown that both continental and regional industrialization frameworks are geared towards promoting the beneficiation and value addition to natural resources. At the national level, the industrialization and sectoral policies and development plans of SADC member States emphasize value addition and beneficiation to primary products as a means of strengthening domestic linkages, increasing locally retained value, generating employment, and reducing vulnerability to swings in the prices of primary commodities. The regional bloc is committed to transforming the comparative advantages into competitive advantages through various initiatives. The importance of an inclusive institutional framework at both the regional and national levels to push through the regional industrialization policy framework and the national industrialization programmes was emphasized in the report.

94. The opportunities that exist in value addition and beneficiation were outlined and these show that the region has potential which could be exploited. The importance of strengthened regional value chains development was highlighted as a strategy to spread the benefits of regional integration and industrialization. The participation of member States in lower level processes along value chains is not optimal. The review observed that countries like South Africa already have centres of excellence in industrial research which could be shared through a regional framework. There is scope in the sharing the facilities and in creating a regional Innovation Hub which can drive industrialization efforts. Cooperation in creating a competitive industrial sector is key to producing competitive products. Deliberate policies on

value addition and beneficiation to the natural resources utilising the techniques of global, regional and national value chain development would help accelerate industrial development.

95. The role of the State and state institutions is particularly important in navigating the transition from commodity exporters to knowledge economies. State investment can underpin the operating framework for industrialization to allow the private sector to drive industrialization and cluster development. State institutions such as research centres and development corporations such as Industrial Development Corporation in South Africa and Zimbabwe should play a much more active role especially in starting up new enterprises that add value to national resources. Continued innovation and human resources development are key to reducing the dependence on the initial factor endowment (natural resources) and to building and sustaining a locally embedded, competitive and diversified economy as well as moving towards a knowledge-based economy.

96. The profiling of beneficiation and value addition opportunities in the region would allow member States to focus in areas where they have full comparative advantages. It will also enable the countries to decide the stage of the value chain which they can occupy. The beneficiation potential of minerals and agricultural products needs to be fully understood and the boundary conditions for such a strategy on a commodity by commodity basis determined. The profiling would investigate the strengths of the productive capacities in the region and the commodity markets. For example, in the agricultural sector, oil seeds present opportunities for easier value addition than minerals due to lower technology and skills requirements.

97. The study identified the constraints to value addition and beneficiations and value chains development to include: lack of raw materials, skills shortages, lack of finance, limited cooperation for larger markets, technological challenges, poor infrastructure and lack of policy harmonization.

## Recommendations

98. Addressing the challenges raised throughout this report requires action at various levels. Importantly, member States and national stakeholders in the SADC region should take responsibility with the support of international development partners.

## Regional Actions

99. The SADC Secretariat should take the lead in:

- i) **Enhancing Industrial Capacity:** The regional institutional framework proposed in the SADC Industrial Development Policy Framework needs to be operationalised to drive the domestication of the policy and the commencement of specific activities. A deliberate programme aimed at enhancing capacity in industrial policy making and implementation at both national and regional levels will be necessary. Measures that promote product value chains in industrial development policies should be introduced in the policy frameworks.
- ii) **Regional Pooling of Resources and Capacities:** The region should pool resources together to support the establishment of regional technology incubation centres or centres of excellence based on institutions that are already operational in some member states. These centres can specialise on identified areas of interest such as the technologies to produce new products from the various PGMs. Another centre could focus on jewellery manufacture, or pharmaceutical products, etc.
  - a. SADC member States, with the assistance of UNIDO, should invest in research into specific value chains and industrial clusters which allow Member States to exploit their comparative advantages.
  - b. The SADC Project Preparation and Development Facility (PPDF) developed to facilitate the preparation of bankable infrastructure projects should be further enhanced to deal with

industrial project preparation and the Regional Development Fund should help finance or organise financing of projects identified through the PPDF.

- iii) **Infrastructure Development:** The development of efficient, integrated and cost-effective infrastructure is key for industrial development. The region is currently facing a deficit in the electricity sector despite the potential for the development of energy infrastructure. The SADC Regional Infrastructure Development Master Plan adopted in 2012 outlines strategies to address the regional infrastructure gap. Funding proposals for the various infrastructure projects identified in the Master Plan need to be pursued and the projects developed. Projects such as Inga III can address the regional power challenges. The development of infrastructure can be through the promotion of development corridors through the African Spatial Development Programme (SDP) consisting of a network of key Development Corridors across the continent to liberate resources and the associated economic potential. The SDP aims to synchronize infrastructure provision with users to enhance investment potential and to provide economic rigour for infrastructure investments. Furthermore, development of infrastructure could be through PPPs arrangements such as, Build Own and Operate or Build Own Operate and Transfer. The technical and economic feasibility of tapping on the vast renewable energy options should also be investigated.
- iv) **Developing Regional Value Chain Strategies:** The SADC regional industrialization thrust requires collaboration through the development of regional value chains and participation in global value chains. Member States have to identify where they fit in the regional and global value chains based on resource endowments, capabilities and capacities and skills. Furthermore, a decision has to be made on the value chain to fully develop, for example textiles, automotive sector or PGMs for the motor car industry. For instance, the cotton to textiles and garment sector is a sector where some member States have some expertise to convert fabric to the finished product, despite lacking skills and technology in making yarn and fabric. Similarly, the South African automotive sector could offer opportunities for regional value chain development through the manufacture of components in neighbouring countries. The regional value chains would start with the simpler components and graduate to more complex parts utilising regionally available materials over time. The end product would have a market that encompasses the whole region. Once member States have decided on value chains to pursue, the next stage would be technology acquisition and leveraging on the region to provide both the source of raw materials and the initial market for the finished product.

## Actions by Member States and National Stakeholders

100. Member States should intensify efforts on;

- i) **Policy Alignment:** member States should align their value addition, beneficiation and industrialization strategies to the aspirations of the regional industrial framework. The regional industrial upgrading and modernization programmes needs to be domesticated with countries targeting sectors and projects where quick-wins can be identified.
- ii) **Development of Infrastructure:** Provide supporting infrastructure for industrial development including roads, rail ports, energy and water and ICT. The private sector can play a pivotal role in developing infrastructure. Mechanisms for their involvement should be developed including, for example, public private partnerships, such as the Build Operate transfer (BOT) schemes being used on the new Beit Bridge over the Limpopo River connecting South Africa and Zimbabwe; building of industrial parks; and independent power generators e.g. Lunsemfwa Hydro Power Company of Zambia, Hidroelectricia de Cahora Bassa of Mozambique. The private sector often has the resources and managerial expertise for these large infrastructure developments.
- iii) **Skills Development:** Beneficiation, innovation and industrial development are skills-intensive activities. All member States report a deficit in skills in the critical areas of material science which are the areas required for innovation and R&D. A skills development strategy that involves collaboration between governments and the private sector can address the skills gap in critical areas. In addition to direct investment in skills development, governments can provide incentives to the

private sector to invest in skills development in critical areas. Zimbabwe's Manpower Development Fund is an example of public private participation in skills development. Funded by a levy equivalent to 1 percent of formal sector wages and salaries, the Fund has been used to train skills relevant for private sector activities for a long time.

- iv) **R&D, Innovation and Technology Development:** Develop and support a policy of acquisition of industrial technology innovation strategies and also promote their firms' acquisition of technology transfer through participation in global value chains, or through joint venture activities with foreign firms. The national fiscal framework should be configured to support innovation and skills formation.
- v) **Stronger Collaboration with the BRIC Nations:** Governments can establish closer collaboration on value-addition bilaterally with, for example, China, the world's second largest economy, which currently consumes 47 percent of refined metals. Furthermore, technology transfer agreements should be part of investment deals.
- vi) **Regional Cooperation:** This will allow for the free flow of goods, services, capital and other factors, reduce transaction costs, establish intra-regional synergies, facilitate sharing of industrial, R&D and training capacities, enhance competitiveness and realize economies of scale that would catalyse cluster development. Sectoral policy harmonization will level the playing field.

## Actions by Cooperating Partners

101. The efforts by regional economic communities, member States and other national level stakeholders in value addition and beneficiation and industrialization require the technical and financial support of developing partners such as UNIDO, UNECA, World Bank, AfDB and other bilateral and multilateral support mechanisms.

102. The United Nations Industrial Development Organisation has been particularly active in supporting industrial development efforts on the continent. For example, through the annual commemoration of the Africa Industrialization Day, mandated by the UN General Assembly resolution 44/237 of 22 December 1989, UNIDO provides an opportunity for member States to share on successes and challenges in industrialization. UNIDO will continue to be a pillar of strength in supporting socio-economic and scientific research activities.

103. The African Development Bank (AfDB), in addition to its usual financing facilities, has been particularly involved in capacity development support to member States in a variety of areas, including analytical work on industrial development. For example in 2013, the Bank availed a grant of USD7.5 million to finance the COMESA-EAC-SADC Tripartite Capacity Building Programme (TCBP). This support is aimed at providing technical assistance to the three RECs as well as the 26 Tripartite member States with a view to increasing intra-Tripartite trade. The programme will enhance the Tripartite negotiation process, develop trade facilitation instruments and industrial cluster action plans in the Tripartite Free Trade Area.

104. The United Nations Economic Commission for Africa, through its analytical work on trade, industrial development, green growth, policy and capacity development, for example, continues to support RECs and member States in industrial development. For example, UNECA is currently supporting SADC on studies on profiling mineral beneficiation and on mapping skills in the minerals sector as well as on developing an industrialization strategy and roadmap. Such support helps strengthen industrial capacity.

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