



Economic Commission
for Africa

Policy Research Paper

Industrial Policies for the Structural Transformation of African Economies: Options and Best Practices



No. 2

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The **ECA Policy Research Paper** provides an accessible, informative and interesting synthesis of original policy analysis or research focusing on major economic and social development issues of importance to Africa at national, sub-regional and regional levels. Its research and policy analysis are presented to share knowledge and encourage dialogue and discussion on issues pertaining to sustainable development in Africa.

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This publication is a product of the United Nations Economic Commission for Africa.
UN Under-Secretary-General and Executive Secretary of ECA: **Abdoulie Janneh**

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Acknowledgement

Under the general supervision of Emmanuel Nnadozie, coordinated by Ndubisi Nwokoma, Bartholomew Armah, Aissatou Gueye and Yinka Adeyemi, this study was conducted by Michele Di Maio and benefited from comments of several experts during a ***Joint ECA/AUC/UNIDO Experts Group Meeting*** held on October 4-7, 2010, in Addis Ababa, Ethiopia.

Acronyms

AEC	African Economic Community
AERC	African Economic Research Consortium
AfDB	African Development Bank
AFTFP	World Bank Africa Finance & Private Sector Department
AGOA	African Growth and Opportunity Act
AGRA	Alliance for a Green Revolution in Africa
AIDA	Accelerated Industrial Development of Africa
AIO	African Innovation Outlook
APCI	African Productive Capacity Initiative
AU	African Union
AUC	African Union Commission
CAADP	Comprehensive Africa Agriculture Development Programme
CAMI	Conference of African Ministers of Industry
CEMAC	Economic and Monetary Community of Central Africa
COMESA	Common Market for East and Southern Africa
DFID	Department for International Development
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreement
EPZ	Export Processing Zone
EU	European Union
FAO	United Nations Food and Agriculture Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GVC	Global Value Chain
HDI	Human Development Index
ICT	Innovation and Communication Technology
IDDA	Industrial Development Decade for Africa
IFPRI	International Food Policy and Research Institute
IMF	International Monetary Fund
ISI	Import Substitution Industrialization
LDCs	Least Developed Countries
NEPAD	New Partnership for Africa's Development
NGO	Non-Governmental Organization
NIC	Newly Industrialized Country
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PAAD	Plan of Action for Accelerated Industrial Development.

R&D	Research and Development
SADC	Southern African Development Community
SAP	Structural Adjustment Programme
SME	Small and Medium Enterprise
SSA	Sub-Saharan Africa
STCAP	Science and Technology Consolidated Plan of Action
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations – Department of Economic and Social Development
UNDP	United Nations Development Programme
UNECA	United Nation Economic Commission for Africa
UNESCO	United Nations Economic and Scientific Cultural Organization
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WB	World Bank
WTO	Trade World Trade Organization
WWII	World War II

Abstract

This study was conceived within the context of the implementation of the Plan of Action for the Accelerated Industrial Development of Africa (AIDA). Its objectives are twofold. First, it provides a detailed analysis of the current state of industry in Africa, describes the set of industrial policies currently being pursued by African governments and discusses how they are affected by the changing global context. Second, it proposes a set of policy recommendations and concrete policy options for African countries based on the analysis of the most promising approaches to industrialization and on a newly formulated country taxonomy that identifies the optimal industrial policy mix for African countries. The idea is that while industrial policy is necessary for any country, what can be regarded as the best industrial policy is highly country-specific. This is even more relevant in the case of Africa where a high degree of heterogeneity exists among the various countries.

Executive Summary

The recent global economic crisis has exacerbated the persistent weakness of African economies – thus making it increasingly difficult for them to catch up with the rest of the world. Currently, global rules and standards of industrial production are changing with new competitors eroding African market shares thus slowing down its industrialization process. While the causes of this situation are many, there is increasing agreement on the need for a changed approach to the development of the continent. The most relevant ‘new’ approach is that industrialization is again among the top priorities on the African policy agenda.

In recent years, the commitment by African governments to fostering industrialization has been increasing and a number of major initiatives to meet this objective have been taken. One of the most important steps was the adoption of the Plan of Action for the Accelerated Industrial Development of Africa (AIDA). The plan, promoted by the African Union Commission (AUC) in collaboration with the United Nations Industrial Development Organization (UNIDO), the United Nations Economic Commission for Africa (UNECA) and other development partners, contains seven programme clusters.¹

The current study is to be placed within the context of the implementation of AIDA. Its objective is twofold. First, it provides a detailed analysis of the current state of industry in Africa, to describe the set of industrial policies currently being pursued by African governments and to discuss how they are affected by the changing global context. Second, it proposes a set of policy recommendations and concrete policy options for African countries. This is based on the analysis of the most promising approaches to industrialization and on the use of newly formulated country taxonomy to identify the optimal industrial policy mix for African countries. The idea is that while industrial policy is necessary for any country, what can be regarded as the best industrial policy is highly country-specific. This is even more relevant in the case of Africa where a high degree of heterogeneity exists among the various countries.

The analytical framework adopted in this study is based on the fact that development requires economic transformation and that targeted industrialization is the key to generate sustained growth. Industrial policy is necessary to achieve these objectives because it induces structural change and fosters competitiveness. Moreover, industrial policy can play a critical role in the growth process by focusing on diversification, to reduce exposure to external shocks. This view is supported by the historical evidence that no newly developing economy has succeeded by relying on the market alone to induce structural change and diversification of outputs and exports. At the same time, industrial policy can spur an increase in investment levels, building new backward and forward linkages across the economy, and upgrading technological capacity that will make for more beneficial integration of African countries in world trade.

This study begins by describing the industrial sector in Africa –as shown in Section 2. It is shown that industry; the manufacturing sector in particular, is still very weak and marginal in African economies, as indicated by the low share of manufacturing exports for most African countries.

¹ The seven programme clusters are: Industrial Policy and Institutional Direction; Upgrading Production and Trade Capacities; Promote Infrastructure and Energy for Industrial Development; Human Resource Development for Industry; Industrial Innovation Systems, R&D and Technology Development; Financing and Resource Mobilization; and Sustainable Development.

At the same time, the importance of production and export of primary products is shown to be increasing. This poses a number of questions about which development model is best suited for which countries on the continent. Also, in this section, there is a focus on the new industrial realities, namely industrial clusters, and how they can contribute to the industrialization process. In addition, the strengths and weaknesses of industrial clusters are discussed with the case made that they, in most cases, fit the needs and possibilities of the African industrialization process quite well.

The current difficult, industrial scenario in Africa is the result, among other consequences, of the different development and industrialization strategies that have been attempted since the 1950s. Section 3 discusses the history of government intervention and industrial policy in Africa since the era of independence. In the 1950s, African countries started import-substitution strategies, by replacing imports with domestically manufactured goods. In most cases, these strategies failed because of a mixture of internal and external causes. With the adoption of Structural Adjustment Programmes SAPs in many African countries, intensive international competition and globalization, these countries shifted to market-oriented and export-oriented strategies. For the most part, this proved to be a difficult challenge. To better understand the African case, the experiences of other developing countries, in particular East Asia and Latin America, are also analyzed. In this regard, the reasons for the wide differences in the performance of Developmental State strategy in Africa with respect to other emerging countries are identified. The analysis also emphasizes that, contrary to expectations, the SAPs did not generate the expected micro-economic responses, nor have they promoted significant changes in technological capability, improvements in skills levels, higher productivity, better manufactured export performance or greater value added in the agro-industry sector. This makes the re-thinking of industrialization strategy more urgent than ever before.

Section 4 briefly discusses how the globalization process and the new rules of world trade have changed in the last few decades and how this affects the options for government intervention, particularly in the use of industrial policy by African countries. The discussion here indicates that the globalization process has marginalized Africa, which has been limited in its ability to benefit from the world trade opportunities. In fact, with the increasing internationalization of production, distribution and marketing of goods and services, Africa faces additional challenges just to catch up with the rest of the world, since global rules and standards of industrial production are also changing. Having described the new context, this section then surveys the set of industrial policies currently implemented by African countries. The basis for this is the definition of industrial policy proposed in Cimoli et al. (2009). Industrial policy is here defined as the (large) set of innovation and education, trade, sectoral and competition policies employed by governments to induce structural change and industrialization. For each domain, how specific policies and instruments have been adopted in different countries is described. The objective is to identify the common patterns and general features that are relevant to the adoption of industrial policies in Africa. It turns out that African governments are employing a large number of policies in various domains and that variance across countries is quite large. Actually, this may be surprising, given the specificities of African countries and their high degree of heterogeneity.

Section 5 takes stock of the analyses in previous sections and proposes policy recommendations for industrial policies necessary to shape the structural transformation of African economies. In particular, two of the most promising approaches to industrialization are discussed here, namely, policies to support industrial cluster creation and policies to up-grade along the agricultural value chains. It is shown that both approaches are indeed quite promising in terms of creation of

the conditions for prosperous growth although their successful implementation poses enormous challenges. This section also provides the new taxonomy of African countries based on their main economic characteristics. Further, the best industrial policy mix to be adopted is proposed for each group of countries. In a nutshell, it is argued that the trade, education and innovation, and sectoral and competition policies should be used in different combinations depending on the characteristics of the specific country. In this way, the peculiarity of each country is taken into consideration and the objective of each industrial policy is clearly targeted.

Section 6 concludes the paper, summarizing the main points of the study. One of the conclusions is that African economies need industrial policy to induce their structural transformation as a key to economic growth. The issue for discussion is about what the best industrial policies to be implemented are and not if governments should intervene or not. This creates the conditions for improved economic management in African countries. Among the elements noted as vital for a successful industrial policy is the understanding of the political equilibrium of a society, of the actors and their interests and the political institutions. The normative analysis of industrial policy should always be complemented by a positive analysis. Finally, it is concluded that once the need for an industrial policy is acknowledged and the political and institutional context is correctly considered, the difficult task of finding the best policy mix begins. This paper aims to be a contribution to this valuable effort.

Introduction

The recent global economic crisis has made evident as well as exacerbated the persistent weakness of African economies. Africa is indeed increasingly facing more difficulties in catching up with the rest of the world. Global rules and standards of industrial production are changing, new competitors are eroding African market shares and the industrialization process is slowing down. While the causes of this situation are several, there is an increasing agreement on the need for a change in the approach to development on the continent. The most relevant novelty in this sense is that industrial policy is again at the centre of the public debate after a long period in which it has long been excluded by economists and policy makers alike.

Since the era of independence of many African countries, a number of industrial development initiatives have been proposed at the regional and sub-regional level.² In recent years, the commitment by African governments to fostering industrialization has been increasing and a number of major initiatives to meet this objective have been taken. Among the most important there is the adoption of Plan of Action for the Accelerated Industrial Development of Africa (AIDA). The plan, promoted by the African Union Commission (AUC) in collaboration with the United Nations Industrial Development Organization (UNIDO), the United Nations Economic Commission for Africa (UNECA) and other development partners, contains seven Programme Clusters³. The AIDA strategy is based on four elements: 1) to use Africa's own natural resource endowments (agricultural and mineral) as a basis for industrial transformation and upgrading; 2) to develop the infrastructure system (i.e. energy, communications, transport. etc.); 3) to increase R&D and support the adaptation of technology; 4) to promote private sector development particularly SMEs.

The current study is to be placed within the context of implementation of AIDA. It is a contribution to the general quest to explore ways and instruments to promote industrial development in Africa. The objective of the paper is two-fold. First, it aims at providing a detailed analysis of the current state of industry in Africa and to describe the industrial policy currently pursued by various governments. First, the study tries to give an answer to a set of important questions, namely: Which are the characteristics of the industrial sector in Africa? Which are its difficulties? Which are the industrial policies currently implemented by African countries? Could they be improved, considering African specificities? What could be learnt from the past industrialization experiences of other developing countries? Second, it attempts to propose a set of policy recommendations and concrete policy options for African countries. The starting point is the country specific nature of industrial policy: decisions on the specific priorities of industrial policy (i.e. to increase firm performance, to induce change in the specialization pattern, to ease technology

² In 2001, the New Partnership for Africa's Development (NEPAD) was created to establish an overall common vision and strategy for the attainment of Africa's sustainable development. While the Partnership has a strong focus on enhancing agri-culture and infrastructures, its stated objective is to promote diversification of production and export also in the manufacturing sector. In 2004, the African Union and NEPAD adopted the African Productive Capacity Initiative (APCI). The APCI marks a shift in the strategy to development: the focus is on enhancing productive capacity rather than simply increasing trade. Moreover, there is a stronger emphasis on the active participation of the private sector in industrial development and on the identification and promotion of selected value chains. The Plan of Action for Accelerated Industrial Development (AIDA) was adopted in 2008.

³ Industrial Policy and Institutional Direction; Upgrading Production and Trade Capacities; Promote Infrastructure and Energy for Industrial Development; Human Resource Development for Industry; Industrial Innovation Systems, R&D and Technology Development; Financing and Resource Mobilization; and Sustainable Development.

transfer) and on the best policy to adopt to reach the objective. The study asserts that it is not possible to follow a “one size fits all” approach. Thus while industrial policy is necessary for any country, what may be considered the best industrial policy is highly country dependent. This is more so in the case of African countries since they are highly heterogeneous. Because of the dependency on the structural characteristics of the economic structure and factor endowments, the policy to be adopted may vary significantly. The suggested new taxonomy of African countries is presented here and then used to identify the best policy mix for each specific country.

The analytical framework adopted in the study is based on the idea that development requires economic transformation and that industrialization is the key to generate sustained growth. Industrial policy is necessary to achieve these objectives because it induces structural change and foster competitiveness. Moreover, industrial policy can play a critical role in the growth process by favoring diversification and thus reducing the exposure to external shocks. This view is supported by the historical evidence that no newly-developing economy has succeeded by relying on the market alone in inducing structural change and diversification of output and exports. At the same time, industrial policy should promote increased investment levels, build new backward and forward linkages across the economy, and upgrade to the technological capacity that will more benefit Africa’s integration in world trade.

The paper is organized as follows: After the present introduction, which serves as Section I, the next section begins by describing the industry sector in Africa. Section 3 discusses the history of government intervention and industrial policy in Africa since the era of independence. In addition, the experiences of other developing countries, in particular East Asia and Latina America are examined. While government intervened in the sector in various forms, the common element is that the government always played a key role in the development of new industries. In addition, a comparison is made of the experiences of industrial policies across the continent. Section 4 briefly discusses how globalization and the new rules of world trade have changed in the last decades and how this affects the possibility of the use of industrial policy by African countries to promote growth. Finally, the section describes the set of industrial policies currently being implemented by the various countries on the continent. Here the categorization proposed in Cimoli et al (2009) is adopted: Different types of industrial policies (innovation, trade, education policies etc.) are considered as well as how each instrument has been adopted in different countries. Given the wide differences across countries on the continent, instead of presenting a comprehensive picture of the different country experiences, the section attempts to identify some of the common patterns and features of the various countries in relation to industrial development. Hence, rather than presenting a country perspective, a “policy-focused” approach with a comparative perspective will be proposed to see how the different countries have used the same set of possible actions in different ways.

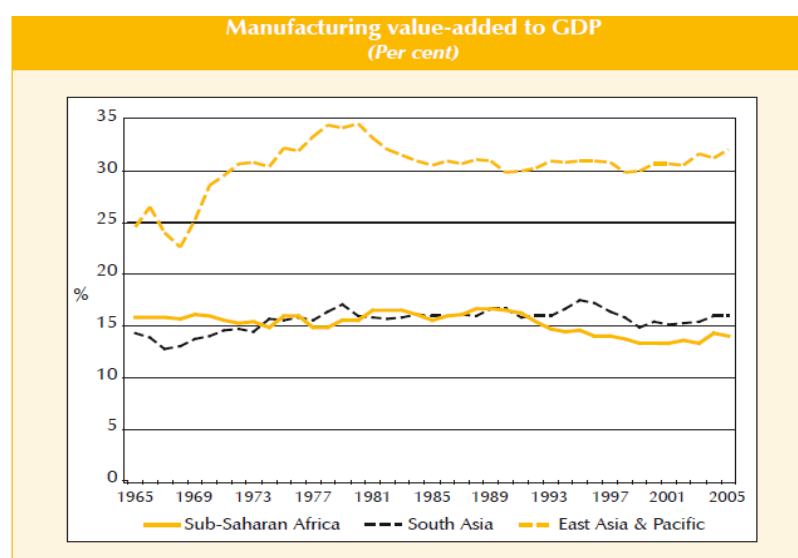
Section 5 proposes some policy recommendations in terms of industrial policies for the structural transformation of African countries. In particular, two of the most promising approaches to industrialization, namely, policies to support cluster creation and policies to up-grade along the agricultural value chains are discussed. It is shown that both of them are indeed quite promising in terms of the creation of the conditions for prosperous growth, though they pose enormous challenges for successful implementation. Finally, the new taxonomy for industrial policy for African countries is presented. To this end, an original categorization of African countries based on their economic characteristics is proposed. Based on this, for each group of countries, the best industrial policy mix is discussed. Section 6 concludes the paper.

Industry in Africa: some stylized facts

The stylized facts on industry in Africa will be presented by attempting an answer to a number of questions on the subject such as: Why is the African industrial sector not performing well? What could be learnt from the past industrialization experiences of other developing countries? Which industrial policies are African countries currently implementing? How could industrial policy be improved considering African specificities?

The first aspect to consider is the dimension of manufacturing production in Africa. The level of manufacturing production in Africa has always been and still is very low. Between 1965 and 2005, the Sub Saharan Africa SSA manufacturing value added did not change much, remaining around 15 per cent of GDP, which is half the value of manufacturing production in East Asia and Pacific countries since the 1970s (UNCTAD, 2008b). Figure 1 shows a slightly declining trend in the ratio of manufacturing value added to GDP for SSA countries from the beginning of the 1990s.

Figure 1: Manufacturing value-added to GDP (%) - 1965-2005: selected regions



Source: UNCTAD, 2008b.

Another way to look at the industrialization process in Africa is to consider the share of industry (i.e. manufacturing, mining and construction) in GDP. As shown in Table 1, in Less Developed Countries LDCs in Africa, the increase in the industry share of GDP is mainly associated with the increased share of the mining sector which has been the main engine of industrial expansion.⁴ This is a very different situation with respect to East Asian countries which have experienced a sustained growth in manufacturing, agriculture, construction and mining since the 1970s, all contributing to their overall industrial expansion (Amsden, 2001).

⁴ Mining is the sub-sector where Africa's world market share is the largest – it has also been growing from 4.3% in 2000 to 4.6% in 2006.

Agriculture is still the most important sector in African economies. For instance, the World Development Report (World Bank, 2008) defines all but three SSA countries (Republic of Congo, Zimbabwe and South Africa) as agricultural based, though all countries in the region are net importers of processed food (UNIDO, 2007). While the African relative share of world agricultural exports has declined, the agro-industry value added in African countries is high with great potentials.

The comparative advantage of African countries lies in the climatic differences between the Southern hemisphere and markets in the North. The horticulture industry is quite important in Kenya, Zimbabwe and South Africa. Moreover, both Kenya and Zimbabwe have expanded into related products, such as fresh fruits, nuts and vegetables exports. One of the advantages of horticulture industry is that it is more labour-intensive than that of the traditional crops such as maize or tobacco.

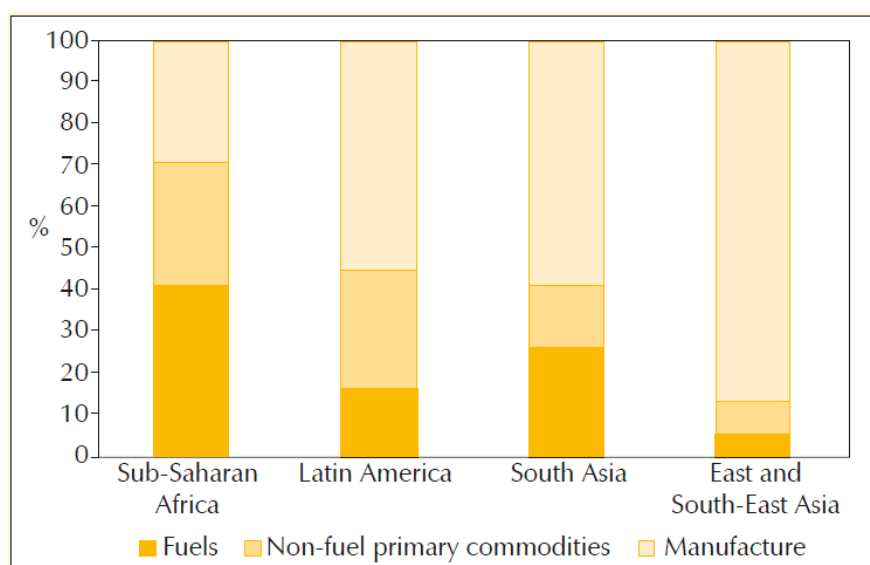
Table 1: African Least Developed Countries (LDCs): Trends in industrial sector composition, 1970–2007(Percentage contribution to GDP)

Real GDP at 1990 prices	1970–1979	1980–1989	1990–1994	1995–1999	2000–2005	2005	2006	2007
Industry	21.57	22.13	21.05	22.32	25.31	28.05	28.53	28.94
Manufacturing	9.84	10.55	9.29	9.09	9.83	10.67	10.58	10.59
Mining	6.63	6.6	7.35	8.51	10.37	11.99	12.43	13.01
Construction	5.11	4.98	4.41	4.72	5.11	5.39	5.52	5.35

Source: UNCTAD (2009)

To better understand the role of manufacturing in African economies, one should also consider its share in total export. African export of manufactured goods has been very low in absolute and relative terms in the last 25 years. As shown in Figure 2, this results in SSA being the region of the developing world with the highest dependence on primary product exports, especially fuel. This has the negative consequence of exposing African countries to volatile global commodity prices.

Figure 2: Composition of merchandise exports, 1995–2006, averages



Source: UNCTAD calculations based on UNCTAD 2008a.

In the 2000–2006 period, the manufacturing export share in total merchandise exports of Africa which averaged 26 per cent is the lowest among all developing regions. Over the same period, in East Asia, South Asia and Latin America, this share was 92 per cent, 56 per cent and 54 per cent, respectively (UNCTAD, 2008). There are, however, some differences across African countries.

Considering the period 2000-2006, in 8 of 35 African countries⁵, manufacturing exports represented 10 per cent or more of GDP. Only Botswana and Swaziland have reached manufacturing export to GDP ratios which are equal to or higher than values recorded for the East Asia and Pacific region which are around 30 per cent. Moreover, manufacturing export is highly concentrated in few countries (South Africa, Algeria, Libya, Tunisia, Morocco and Egypt). Sub Saharan Africa is the region of the developing world with the highest dependence on primary product exports, especially oil.

Africa's world market share in light manufacturing has been low and declining (0.8 per cent in 2006 against 0.9 per cent in 2000). Most African countries do not export in any significant way, nor produce simple, locally consumed products, which do not require major investments or skills to produce. Table 2 compares the shares of merchandise exports and imports as a percentage of the world total for African countries, with respect to other regions of the world. It shows an increase in Africa's export growth during the period 1995-2005, mainly driven by the increase in the export of primary products, especially oil. However, both North African and SSA economies are very marginal to world trade in manufacturing products as shown in Table 3 It is nonetheless worth noting the new dynamism on export of manufactured goods recording an average increase of 9.4% between 1995 and 2005.

⁵ Countries excluded due to data unavailability are: Algeria, Angola, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Guinea-Bissau, Lesotho, Libyan Arab Jamahiriya, Liberia, Mauritania, Sao Tome and Principe, Somalia, and Zimbabwe.

Table 2: Regional shares of merchandise exports and imports as percentage of world total

YEAR	1980	1985	1990	1995	2000	2004	2005	2006
Export								
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Developing economies	29.4	25.4	24.2	27.6	31.7	33.7	35.9	36.8
Developing economies: Africa	5.9	4.2	3.1	2.1	2.3	2.5	2.9	2.8
Northern Africa excluding Sudan	2.1	1.7	1.2	0.7	0.8	0.9	1.0	1.0
Sub-Saharan Africa 1	3.7	2.5	1.9	1.4	1.5	1.7	1.8	1.8
Developing economies: America	5.5	5.5	4.1	4.4	5.6	5.1	5.4	5.7
Developing economies: Asia	18.0	15.6	16.9	21.0	23.8	26.0	27.6	28.3
Developing economies excluding China	28.5	24.0	22.4	24.7	27.9	27.2	28.6	28.7
Import								
World	100	100	100	100	100	100	100	100
Developing economies	23.8	23.0	22.3	28.6	28.7	30.5	31.4	32.1
Developing economies: Africa	4.5	3.6	2.7	2.3	2.0	2.2	2.3	2.3
Northern Africa excluding Sudan	1.4	1.6	1.2	0.9	0.7	0.7	0.8	0.7
Sub-Saharan Africa 1	3.1	2.0	1.5	1.4	1.3	1.5	1.5	1.5
Developing economies: America	6.0	4.1	3.5	4.8	5.9	4.7	4.8	5.0
Developing economies: Asia	13.1	15.1	15.9	21.4	20.8	23.4	24.2	24.8
Developing economies excluding China	22.8	20.9	20.8	26.1	25.3	24.5	25.2	25.6

Source: UNCTAD (2008a)

Table 3: Regional average annual growth of exports by product category, 1995-2005

	Total: all products	Primary commodities including fuels	Non-fuel primary commodities	Manufactured goods
World	6.6	7.2	3.7	6.3
Developed economies	5.2	5.3	3.1	5.1
Developing economies	9.1	8.9	4.6	9.3
Developing economies: Africa	10.0	11.2	5.5	8.9
Northern Africa excluding Sudan	11.8	13.0	5.5	8.2
Sub-Saharan Africa 1	9.2	10.2	5.5	9.4
Developing economies: America	7.9	7.4	5.1	8.5
Developing economies: Asia	9.3	9.0	4.3	9.4

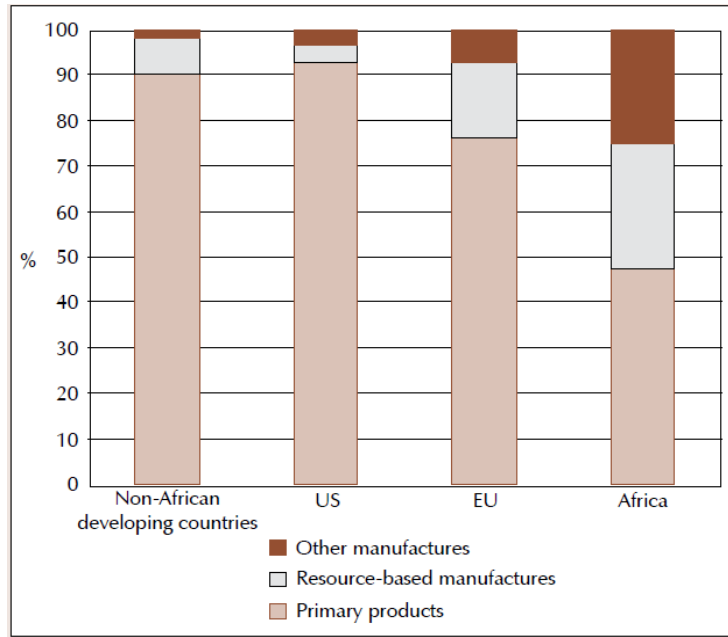
Source: UNCTAD secretariat computations based on UNDESA, Statistics Division.

Notes: ¹ including Sudan

Figure 3 offers some additional criteria to evaluate the situation of the industrial sector in Africa. Primary products now account for nearly three quarters of total exports to both developed and developing countries. Resource-based manufactured goods account for 12–15 per cent while other manufactures (low, medium and high technology) represent a small part of exports to both groups (about 10 per cent of exports to developing countries and 14 per cent of exports to developed countries).⁶

⁶ It is interesting to note that low, medium and high technology manufactures only represented 3.1 per cent of exports to China and 3.9 per cent of exports to India in 2008.

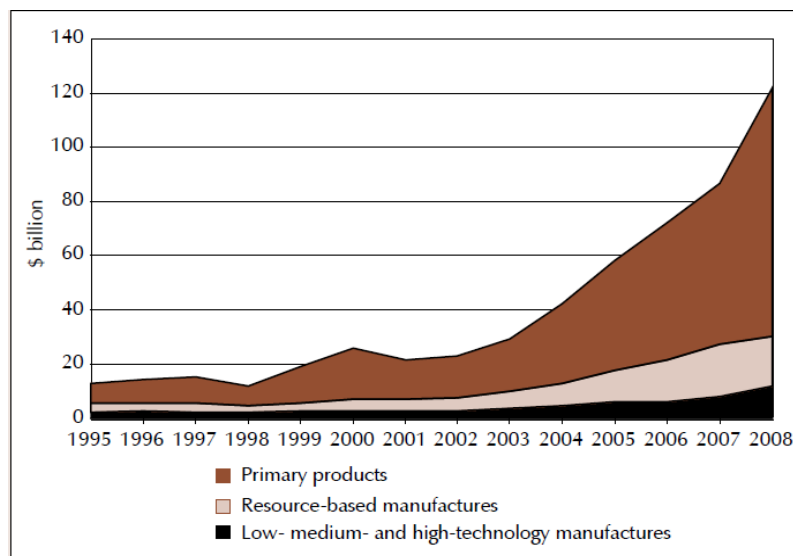
Figure 3: Composition of Africa's exports to main export partners, 2008



Source: UNCTAD (2010)

In the last 15 years the difference in the export vector directed to other developing and developed countries has drastically reduced since the composition of Africa exports to other developing countries has shifted towards primary products (see Figure 4). On the contrary, intra-African trade is characterized by a more balanced composition (see Figure 3). At the same time, Africa is increasingly importing manufactures from non-African developing countries while the share of primary products is decreasing. These broad patterns resemble that of imports from developed countries.

Figure 4: Structure of Africa's exports to non-African developing countries, 1995–2008



Source: UNCTAD (2010)

Table 4 which compares manufacturing export performance of African countries with respect to other developing countries, in terms of volume and price values, shows that over the period 1995–2006, manufacturing export values in Africa increased by 12 per cent, more than the world average as well as all other developing countries. This result is however not homogenous among African countries. The largest increases occurred in post-conflict and oil-exporting countries such as Chad, Equatorial Guinea, Mozambique and Sierra Leone. A number of African countries saw very little growth in export values over the same period - mainly countries that experienced political unrest in the period, such as the Central African Republic, Eritrea and Liberia.

Table 4: Average yearly increases in merchandise export values, volumes and prices, 1995–2006 (Percentage)

	Total Export Value	Total export volume	Export unit price
World	8.15	6.50	1.48
Developing Countries	11.53	9.03	2.13
Africa	12.44	5.82	6.14
Developing Asia	11.64	9.91	1.39
Latin America	10.89	7.46	3.2

Source: UNCTAD calculations based on UNCTAD 2008a.

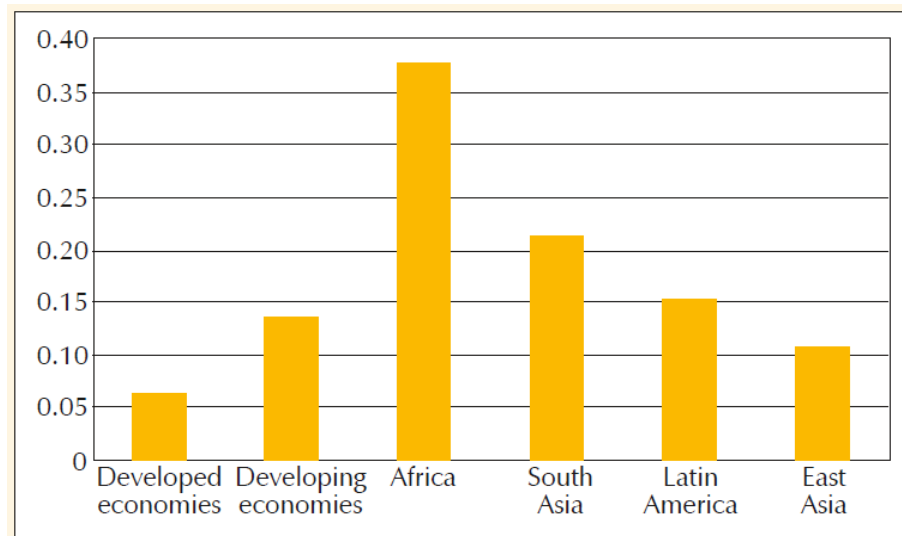
The analysis of the change in export volumes and prices gives some interesting indication on the characteristics of African manufacturing with respect to other regions. Export volumes increased between 1995 and 2006⁷, but less than both the world average and the developing countries average. Interestingly, this increase is much lower than the increase in the value of exports. Also, this increase in the export unit price is over four times higher than the world average and nearly three times higher than the developing-country average.⁸ This indicates that much of the increase in export values in Africa was due to rising prices rather than to increased export volumes. The fact that prices are largely out of the control of African countries suggest that the limited export volume growth indicates weak export dynamics and creates serious doubts about the long-term performance of African manufacturing export.

The very low level of diversification in export products is another weakness of the African economies. Indeed, the export concentration index for Africa has remarkably increased in the last 15 years. The current level of export concentration is much higher in Africa than in other regions in the world whether developed or developing. In comparison with both Latin America and East Asia, the export concentration index in Africa is more than double (Figure 5).

⁷ Reasons for the increases in export volumes are country dependent. For a detailed analysis of country's cases see UNCTAD (2008).

⁸ As expected, oil-exporting countries recorded the largest increases while non-oil exporting countries suffered reductions in the unit price of their exports.

Figure 5: Export concentration index, 2006



Source: UNCTAD calculations based on UNCTAD 2008a.

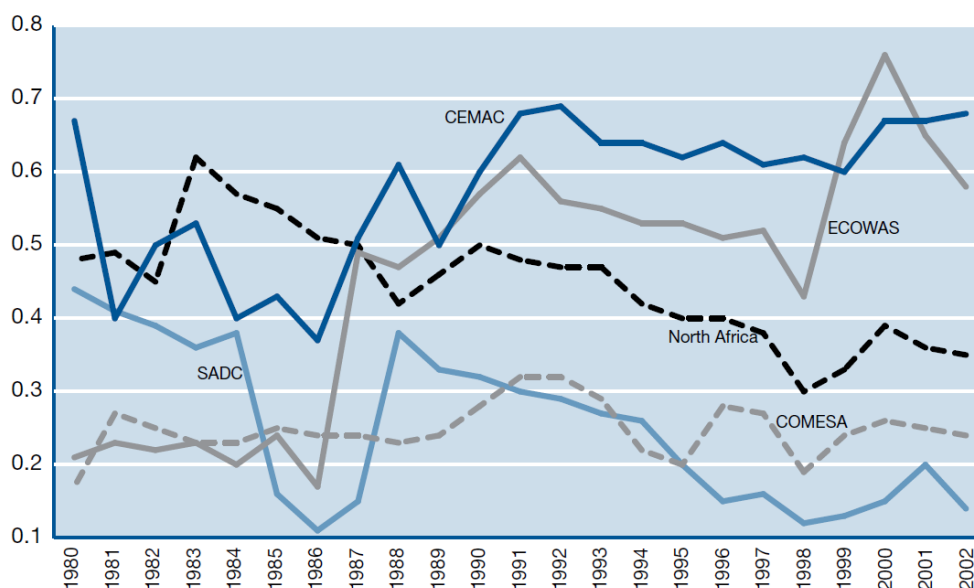
Hammouda et al. (2006) show that, while African economies have always exhibited very low levels of diversification, in recent years, the concentration of production has even increased in some African countries. This is especially the case of oil-exporting countries of the Central and Western African region. Figure 6 compares the diversification level of five sub-regions using the Normalized Hirschman Index.⁹ In 1980, the most diversified sub-regions were COMESA and ECOWAS. The least diversified was CEMAC with SADC and North Africa in the middle. By 2002, the diversification gains at the sub-regional level had changed. SADC was the most diversified region followed by COMESA and North Africa while CEMAC has remained the least diversified subregion.¹⁰

9 The Normalized Hirschman Index is defined as: Where $P_i = \frac{x_i}{X}$, with x_i is the value of exports of commodity i,

$X = \sum_{i=1}^N x_i$ and N is the number of exported products. The lower the index value the lower exports concentration, i.e. the more diversified is the economy.

10 A more detailed analysis of the specialization pattern can be found in UNECA (2010a).

Figure 6: Comparison of African sub-regions diversification levels: Normalized Hirschman Index



Source: Hammouda et al. (2006).

The causes for the low level of African manufacturing production and export are numerous but three seem to be the most important. First, Africa lacks the technological capabilities needed to set a successful process of industrialization in motion. Second, the continent lacks the financial resources necessary to finance the development of a manufacturing sector. Moreover, the political instability that characterizes most African countries adds to these difficulties additional costs that further reduce the incentive to invest in manufacturing. Third, African countries have a comparative advantage in the production and export of primary commodities given the abundance of natural resources, combined with the continent's low human capital (Wood and Mayer, 2001) The increasing concentration of Africa's exports on primary commodities casts some doubts on the potential for future growth in the region. Indeed, there is considerable evidence that the type of product that a country exports matters in terms of long-run economic performance (Hausmann et al., 2007; Lall et al., 2006). Manufactures, especially medium- and high-technology manufactures have forward and backward linkages with other sectors which may generate positive externalities for the whole economy. In contrast, primary products have production structures that are capital intensive and often poorly linked to the rest of the economy. Moreover primary products' prices are set at the world level and are usually more volatile than those of manufactured products.

Another concern is the increase in the imports of manufactures from emerging countries (in particular China and India) and its impact on local manufacturing production in Africa. In most of the cases, domestic producers suffer this competition and are obliged to leave the market. In some fewer cases however, competition has increased the ability of domestic firms to compete (i.e. the Ethiopian shoes sector). Finally, for some other firms, the rise of China and India has offered some new opportunities. Indeed, the fact that these two countries are rapidly moving up the global value chain and leaving space for other developing countries to produce some of the low technology manufactured goods is an important opportunity for African countries. In order to take advantage of these new opportunities for export market expansion in the manufacturing

sector, governments need to intervene by improving access to credit as well as addressing the problem of poor infrastructure.

All these elements support the argument in favor of the need of industrial policy to foster industrialization in Africa. Moreover, the comparison with the experience of emerging countries from East Asia show that industrialization has been the engine of growth. At the same time, the failure of past industrialization strategies in Africa calls for a renewed developmental industrial policy.

An emerging element in the African economic landscape is the industrial cluster.¹¹ The fact that the cluster's main feature is the geographic proximity between firms makes it to be particularly adapted to the African context characterized by poor infrastructure and weak information systems. Clusters are important because they are believed to play a significant role in the promotion and development of small enterprises. In general, the benefits of clustering are indicated as gains in collective efficiency. Indeed, clusters: 1) make market access easier; 2) are characterized by labor pooling; 3) facilitate technological spillovers; and 4) create the environment conducive to joint actions. Moreover, industrial clusters enhance enterprise performance by reducing transaction costs that would otherwise have been present when marketing through traders. It is clear that the benefits of clusters would be particularly valuable to African SMEs, given the difficult economic environment in which they operate.

Clusters are increasingly attracting attention from policy makers too, judging from the number of conferences organized on the topic and the growing research interests on the subject. A number of publications have analyzed the experience of clusters in Africa, describing their history, development and characteristics (see Mwamila et al., 2004; Oyelaran-Oyeyinka and McCormick, 2007; and Zeng, 2008).

McCormick (1999) provides a detailed analysis of six clusters in three African countries (Kenya, Ghana and South Africa). The cases considered show that African clusters, far from being homogeneous, vary in both internal structure and level of industrialization. The McCormick study interprets these three types as the subsequent steps any cluster should make to fully develop. These are the groundwork cluster, industrializing cluster and the complex industrial clusters. Groundwork clusters lay the groundwork for industrialization by improving producers' access to markets and offering an environment in which joint action can begin. Industrialising clusters are "industrializing", in the sense that they have begun the process of specialization and differentiation that leads to greater efficiency and ultimately to industrialization while complex industrial clusters have diversified their size structure and inter-firm linkages in such a way that they have been able to tap wider national and global markets.

Research on African countries has identified clusters, particularly of SMEs, as a source of competitiveness.¹² There are a number of other aspects related to clusters that have been studied. For instance, the analysis presented in Diyamett (2009) shows that only cooperation can make clusters work. The in-depth analysis presented in Zeng (2008) testifies that clusters in Africa are elements of vital economic activity. Indeed, belonging to these clusters has allowed enterprises to overcome many binding constraints in the areas of capital, skills, and technology. In some cases,

11 There different definition for cluster. For a review and a comparison of the alternatives see Navdi and Schmitz (1999).

12 Oyelaran-Oyeyinka (2004a) discusses the determinants of inter-firm and inter-organizational collaboration among SMEs in Nigeria, Kenya and Zimbabwe. Wood and Kaplan (2005) examine innovation and the role of firm networks in the South African wine industry; Lorentzen et al. (2007) analyses in detail the Durban auto cluster while Gibbon (2001) describes the cotton and the fresh fruit SME clusters in Tanzania.

it has allowed them to access global knowledge fostering production value chains, and achieving efficiency gains. The sectors identified range from natural resource-based activities, such as fishing, high-tech industries, auto parts and computer manufacturing. The clusters analyzed are:

- The Suame Manufacturing Cluster in Ghana (also in McCormick, 1999);
- The Kamukunji Metalwork Cluster (also in McCormick, 1999) and the Lake Naivasha Cut Flower Cluster in Kenya;
- The Nnewi Automotive Components Cluster and the Otigba Computer Village Cluster in Nigeria;
- The Mwenge Handicrafts Cluster and the Keko Furniture Cluster in Tanzania;
- The Lake Victoria Fishing Cluster in Uganda;
- The Textile and Clothing Cluster in Mauritius; and
- The Wine Cluster and the Western Cape Textile and Clothing Cluster (also in McCormick, 1999) in South Africa.

These studies emphasize the important role that a cluster could play in the African context. For instance, Zeng (2008) concludes that clusters significantly contribute to Africa's economic growth and to job creation. McCormick (1999) concludes that clusters are contributing to the industrialization process in Africa. Nonetheless, in today's increasingly knowledge-intensive and competitive global economy, these clusters also face serious challenges. The big question is: how to deal with them? This will be discussed in the last section of the paper.

The current situation of the industrial sector in Africa is obviously the result of a combination of different factors. Among these, one of the most important is the set of industrialization policies implemented by the African governments between the 1950s and the late 1970s and the SAPs that replaced them in the 1980s. The next section discusses them in turn.

Industrial policies in Africa: a historical overview

Since the 1950s African governments have been implementing a number of industrial policies to promote industrialization. The Developmental State has been the main actor of this process which was characterized by an Import Substitution Industrialization (ISI) strategy to development. At the beginning of the 1980s, the SAPs dramatically changed the government approach to industrialization in the continent. In this section, the characteristics of both the Developmental State and of the SAPs in the last decades in Africa are discussed.

Industrial Policy and Role of the State

As most of other developing countries in the 1960s and 1970s, African countries started a process of industrialisation through import substitution. (Mkandawire, 2001; Galal, 2008). In most of the cases, governments offered protection to domestic firms with little discrimination, no time limit as well as no requirements for international competitiveness.

There are several reasons why import substitution policies were largely adopted by governments in Africa. One is the belief that industrialization was necessary for development and that to reach this objective, infant industries had to be nurtured behind protective barriers. The idea was that free trade would have increased the dependence on imported manufactures. Governments used a range of policy measures to implement their protectionist trade policies –namely tariff and nontariff barriers, such as quotas and licenses.¹³ For instance it was very common to grant export monopoly to particular firms; moreover, foreign exchange restrictions frequently imposed large additional taxes on trade.¹⁴

Exactly as in all other developing countries, governments of African countries played a leading role in the industrialization process.¹⁵ There was also a widespread public ownership of industry: public investment was extensive and a number of firms were nationalized. But, as opposed to what happened elsewhere (i.e. East Asia), in most of the cases, governments did not have the necessary financial and managerial capacity to operate the enterprises efficiently (Nziramanga, 1995). Moreover, the policies designed to direct investment toward industry had a negative impact on agriculture by distorting factor prices and rates of return. The high level of tariff protection on final goods and the subsidized import of foreign capital goods were incentives to expand the consumer goods sector rather than the intermediate input production.

Under these circumstances, knowledge spillovers – which ironically were one of the main reasons to protect the infant industry – could not be generated in the economy. Furthermore, even when foreign firms were nationalized, there was no transfer of technology because the national technical capability to absorb it was very low.¹⁶ The relation between industry and the innova-

13 The use of nontariff barriers creates serious problems due to the difficulties associated with its management as well as its opacity in terms of the effect on beneficiaries.

14 The effect of foreign exchange restrictions on current account is an overvalued official exchange rate, coupled with some form of secondary market exchange rate.

15 In some case, such as Ghana and Zambia, government even announced five year plans and very ambitious targets. In Algeria almost the whole economy was nationalized in 1966.

16 As an example, Nziramanga (1995) cites the Zambian case: the nationalization of the copper mining industry induced a larger use of local inputs but it had no effect on the domestic process of technological knowledge accumulation since the latter

tion centres, similar to the Latin American experience (see below), was very weak. In most of the cases, research centres were separated by industry as they were not interested in seeking for solutions to the technical problems of industry, preferring a more isolated existence. Moreover, the research centres were often not isolated in the national political maneuvers (Lall, 1995).

In the African experience of ISI, the state control of the financial sector was central to its development though variations exist across countries. In many cases, it took the form of state ownership of banks and other financial institutions. The reason why the state control of the financial sector has been critical in ensuring the success of selective and industrial/trade policies, and in general of the ISI, is that it provided the state with the power to influence private sector investment decisions and, more importantly, to discipline the non-performers (Soludo et al., 2004). Governments created industrial development banks to provide foreign exchange loans for imported capital goods and to direct credit loans. For instance, in Morocco the National Bank for Economic Development (BNDE) was established in 1959 with the purpose of providing loans to investment projects in selected industries with preferential access by public enterprises (Nabli et al. 2008). Yet, in most of the cases, the results were quite disappointing.

Another relevant problem was the management of Foreign Direct Investments FDI. In most of the cases, foreign firms were given a number of favorable conditions, namely monopoly restrictions such as exclusive exploration rights, sole supplier contracts and domestic-market exclusivity (Stein, 1992), which had the perverse effect of hindering the process of linkages with the domestic economy. This is not surprising considering that FDI was almost exclusively directed to the primary and raw-materials sectors.¹⁷

While the judgment on the ISI experience in developing countries is mixed, there are few doubts that some of the best documented failures in industrialization through the ISI strategy come from sub-Saharan Africa (for instance, Zambia and Ghana). Indeed, no African country generated internationally competitive industries.¹⁸ Typically, while there was rapid capital accumulation, the industry which was developed was incredibly inefficient so that total factor productivity was very low.¹⁹

In mid the 1980s, the economic situation of most of African countries was very difficult. To deal with this, the IMF and the World Bank imposed Structural Adjustment Programmes (SAPs) on African countries. The theoretical premise of SAPs was that markets are efficient while selective government interventions are inefficient because they distort market signals. The government should just manage the macro economy, improve general education and infrastructures while free market would eliminate inefficient firms releasing productive resources for others that are efficient. The SAPs predicted that Africa should expand its agricultural and extractive mineral commodity sectors because those are the sectors in which comparative advantages exist.

was embodied in the expatriate management.

17 On the strategy of FDI in developing countries, see Amsden (2001).

18 Galal and El-Megharbel (2008) and Harabi (2008) show that industrial policy adopted in the early 1960s until the early 1990s produced very poor results in Egypt and in Morocco, respectively.

19 For instance, since 1966, the Algerian government invested heavily in the creation of basic capital-intensive industries (hydrocarbon, steel, plastic and fertilizers) and in industries substituting imports (construction materials, metal products, consumer goods); in less than a decade, Algeria succeeded in creating a strong industrial base. However, this rapid industrialization resulted in severe inefficiencies in the productive capacity of various industries and generated fiscal imbalances in the mid-1970s which constrained Algeria's ability to continue its expansionary industrial policy (Nabli et al. 2008).

As a consequence, all the ISI apparatus was eliminated. The same happened for all the measures related to protection of the domestic market: tariffs and quantitative restrictions on imports; price controls and subsidies; credit ceilings. Admittedly, SAPs were successful in liberalizing trade and the financial sector, privatizing public enterprises and inducing massive currency devaluations in most African countries (Ogbu et al., 1995).

There is serious disagreement in the evaluation of the results of SAPs in African countries.²⁰ It is now a shared view that after the SAPs, the African industrial sectors became worse off. According to Lall (1995), over the period, industrial performance became disappointing and many African countries suffered sustained de-industrialization process - i.e. in the 1980s and 1990s. In particular, even in the cases for which there was an initial favorable response of manufacturing to the reforms, this did not lead to sustained growth and diversification (Jalilian et al., 2000). Ogbu et al. (1995) argues that the growing dependence on imported goods eroded the weak industrial base of most African economies. Stein (1996) critically examined the structural adjustment policies used in Africa and concluded that economic reform should have been based on transforming the economy and not retracting the state institutions and policies which he considered necessary in the promotion of industrialization.

According to Riddell (1990), “the structural adjustment policies promoted by the World Bank have been a major force preventing restructuring of industry away from the deep dependent link.” The weakness of the African supply response has been particularly marked in manufacturing industry and manufactured export performance. The de-industrialization impact of SAPs programs in several African countries is also confirmed by the analysis in Stein (1992). Nziramanga (1995) cites the difficulties of the sugar industry in Kenya and textile industries of South Africa and Zimbabwe in the mid 1990s, as relevant examples. All these sectors reduced output and employment due to competition in the domestic market from imports.

have discussed the possible reasons for the disappointing results of the SAPs. According to some, the main problem with the design of SAPs was that they ignored the issue of capability development (Grimm and Brüntrup, 2007). The SAPs type of adjustment removed inefficient government interventions but did not create the conditions for development. Indeed, SAPs did not solve the numerous market failures present in African economies, characterized by a situation of severe shortage of technical skills and a weak tradition of industrial entrepreneurship. Moreover, African governments had, often on advice from donors and multilateral development institutions, concentrated on macroeconomic stability and institutional reforms to protect property rights and ensure contract enforcement, with no coherent strategies to address market failures and externalities that constrained economic activity. Finally, while SAPs were supposed to attract foreign capital and through this, ensure the growth of a stable industrial sector for Africa, recent research shows that this did not happen except in the resource-extractive sectors (Elhiraika, 2008).

The SAPs had a particularly negative effect on the process of technological accumulation (Chang, 2009). While performance during the ISI was often poor in terms of innovation and growth, the SAPs in most cases did not produce better results, at least in the short-to-medium run (see for instance Lall (1995) on Ghana). Given these results, it is fair to conclude that macro-economic reforms and SAPs in Africa have not promoted significant changes in technological capability, improvements in skills levels, higher productivity, better manufactured export performance or

²⁰ See for instance World Bank (1994), Elbadawi et al. (1992), Helleiner (1994), Stein (1992, 1994), Mosley and Weeks (1994).

greater value-added in the agro-industry sector, which were the expected responses from the reforms. The weak African industrial structure is at least in part a consequence of these interventions. In most of the cases, industries are yet to recover from the SAPs period and, given the new international context, the task will be increasingly difficult.

Comparative Analysis of Africa with East Asia and Latin America

NICs and Latin American Countries

In order to better understand the causes of the current economic situation in Africa, it is also useful to consider and compare the experiences of African countries with those of other developing countries. In particular, the development process of East Asian economies (South Korea, Taiwan, Hong Kong and Singapore, the so-called Newly Industrialized Countries (NICs)) and Latin American countries are examined.

Between the 1960s and the 1970s, developing countries, and in particular Latin America and East Asia, recorded high growth rates caused by a process of rapid structural change from agriculture to manufacture. The literature usually refers to this period as one in which these countries were characterized as Developmental States. The ideology of the Developmental State was to sustain economic growth through industrialization. To reach this objective, it employed a number of government interventions, especially in the form of extensive industrial policies (trade policies, sectoral policies, education and innovation policies, etc.). In most of the cases, at least at the beginning, all governments adopted an ISI strategy. The Developmental State was able to do so because it was a “strong state”, i.e. it was (at least partly) autonomous from social forces that opposed such policies and the structural changes that followed.

At the same time, it developed some beneficial interaction between the bureaucracy and the entrepreneurial elite that served the objective of growth through industrialization. In particular, ISI policies were initially quite successful in inducing industrialization in East Asia where the level of industrialization was lower than in Latin America. By the 1980s, a process of differentiation between the two regions began. While East Asian countries continued their rapid growth, Latin American countries entered the *decada perdida*, a long period of low growth with high volatility.

There are different explanations for this divergence. Orthodox view explains it as the different result of two development strategies: a state-led ISI strategy in Latin America as opposed to a market-friendly export-led model in East Asia. The “Asian Miracle” is the ‘natural’ result of correctly implemented export-led growth strategies (Krueger, 1990; World Bank, 1993; Pack and Saggi, 2001). In this account, the role of the State in the development process was considered very marginal. The government sets the rules favoring export and allows the markets to work freely: then, automatically, the economy takes-off. In this view, any selective industrial policy would be an obstacle to growth.²¹ According to the orthodox view, Latin American countries had a bad performance because they implemented the ISI strategy and a number of industrial policies.

²¹ The orthodox view has long prevailed in the profession. See for instance, Krueger (1990) and Noland and Pack (2002).

As a matter of fact, starting from the end of World War II WWII, governments all around the world have largely used trade policies, subsidies, public enterprises, direct credit allocation as instruments to *shape* comparative advantages and to guide investments and industrialization. In opposing the orthodox view, a number of scholars have argued that all countries have used industrial policies in their development process (Reinert, 1999) and that the results of the Developmental States have been, obviously with some exceptions, remarkable (Amsden, 1989, 2001; Wade, 1990). Moreover, most scholars now agree that also the NICs were Developmental States.

In fact, what differentiates NICs and Latin America is a different model of Developmental State. Similar policies have been implemented in radically different ways. It is by now a shared view that the recipe of the success of the East Asian economies has been the effective combination of incentives with discipline (Amsden, 2001; Hausmann and Rodrik, 2003). The former were provided through subsidies and protection, while the latter was obtained through direct government control and the use of export performance as a selection and monitoring device for both the entrepreneurs and the bureaucrats. According to Lall (2003) the East Asian model's main characteristics are:

- Strict selectivity and time limitation of government intervention;
- Use of public enterprises to enter risky sectors (for limited periods);
- Massive investment in skill creation and technological and physical infrastructure building;
- Centralization of strategic industrial decisions in competent authorities;
- A highly selective use of FDI.

Three features of the East Asian model made it successful. First, governments provided stable and predictable incentive frameworks that supported investments. Second, they had close and continuous, and, most importantly, 'strong' dialogue with the private sector. Indeed, as in all the other developing countries where they have been implemented, industrial policies in East Asian countries also created inefficient firms. However, different from what happened elsewhere, the State was able to withdraw support whenever a firm's performance was not satisfactory and imposed export-performance standards. Third, governments used simultaneously, import substitution and export promotion policies, combining them in the most efficient way to serve the industrialization need. Moreover, the experiences of the different NICs also feature significant differences. For instance, government intervention was widespread in South Korea and Taiwan but was much less relevant in Singapore and Hong Kong. Both South Korea and Taiwan heavily invested in the development of domestic-innovation capabilities while the main technology policy for Singapore and Hong Kong has always been attracting FDIs (see Lall, 2000).

It is a shared view that the ISI strategy has been much less successful in most of the Latin American countries. One of the reasons is that the ISI implemented in Latin America was very different from that of East Asian. Its main characteristics were:

- An 'anti-export' biased version of the ISI strategy;
- Lack of clear performance criteria to evaluate the policies implemented;
- The inexperience and inability of civil servants to implement the different policies;
- The nationalistic ideology that made heavy industries producing for the Army the privileged targets of industrial policies (Katz and Kosacoff, 1998);
- A lower (with respect to the East Asian countries) expenditure on education and science and technology as share of GDP.

As it is clear from this list, there are a number of differences between the Developmental State in Latin America and in the NICs. In particular, Latin American firms received incentives, but faced very little discipline. The common mistake was to ignore efficiency considerations and to assume away capability problems. One additional reason for the divergence is the different learning and adoption capabilities that were present in the two regions when the new techno-economic paradigm based on the information and telecommunication technology emerged (Dosi et al., 1994).

The educational and technological infrastructures (results of systematic and well designed education and innovation policies as part of the industrial policy menu) gave East Asian countries a strong advantage with respect to other developing countries in exploiting the opportunities offered by the ICT revolution. The weakness of the Latin American version of the ISI strategy showed up also in the form of the dramatic 1982 financial crisis. That crisis was the result of one of the bottlenecks of the developmental State model, i.e. its inherent over-expansionist nature²². To up-grade their production, Latin American countries needed to constantly increase their import of more advanced capital goods.

Increasing exports should have been the 'correct' way to accumulate the foreign exchange needed to pay imports. The problem was that the Latin American ISI strategy was clearly anti-export biased. In addition, because of domestic 'excess demand', there was no incentive for entrepreneurs to commit to exports. A temporary solution was the increase of the foreign debt. But, by early 1980s, Latin American countries were no longer able to keep up with their payments (Alcorta and Peres, 1998). Latin American countries underwent a long period of economic and political turbulence starting from the 1982 debt crisis. Finally, at the beginning of the 1990s, the Latin American countries become the laboratory for the implementation of the most orthodox version of the *Washington Consensus* policies package (see Stallings and Peres, 2000), the story of which closely resembles the one about African SAPs programmes.

Historically, the African States are the product of competition between colonial powers for access to the natural resources of the continent. Thus the independence process, which began at the end of the 1950s, had the objective of reducing the interference of external powers in post-colonial Africa in order to foster autonomous development. The post-colonial period of the 1960s and early 1970s was characterized by most sub-African countries building strong governments that took the task of nation-building and development seriously (UNCTAD, 2007). Similarly, North African countries like Algeria and Egypt and - to a lesser degree - Morocco and Tunisia adopted common strategies including: (a) the rise of dominant single-party political systems; (b) agrarian reform programs; (c) programs for state provision of social services, including education, housing, health care, food subsidies, etc. (Nabli et al. 2008).

The Developmental State was the instrument African countries adopted to achieve their developmental objectives. In the late 1970s, while both African and East Asian countries were largely employing industrial policy and various forms of government intervention, differences in the growth performance between the African and the East Asia models emerged. In particular, Africa showed much lower productivity growth. The sustained growth process that had characterized the beginning of the ISI period ended due to the crisis that hit Africa at the beginning of the 1980s. The origin of the crisis was the combination of a sharp rise in oil prices and a drop in the prices of their major primary commodity exports (UNCTAD, 2007). The crisis was particularly

²² Stiglitz (2003) argues that the Latin American debt had become unsustainable not due to its inner forces, but because of a shock from the outside: the sudden, unexpected and unprecedented increase in interest rates in the United States.

severe due to the countries' over-specialization in commodities which made them extremely vulnerable to changes in international commodity prices (Sindzingre, 2004).

The dramatic effect of the crisis raised doubts about the strategy pursued by Africa during the Developmental State period. Some scholars posited that the ISI strategy was responsible for the collapse of African economies. The result of the ISI approach to development in Africa has been perceived to be very poor. While there are some reported success stories (such as Mauritius, Botswana, Madagascar and Kenya), in most of the cases, the Developmental State has been a failure.

UNCTAD (2007) discussed in-depth, the reasons for the poor results of the ISI strategy in Africa. Two possible explanations were presented. It was stated that the causes of the failure are first "internal" and second, "external". The internal explanation is founded on the belief that the Developmental State could not succeed because of the inability of African States to design and implement industrial policies. According to this interpretation, the ISI experience failed due to the corrupt and predatory nature of the governments on the continent.²³ Hence, African countries became the paradigmatic example for the critique of the ISI strategy in the developing world. In contrast, the external explanation emphasized that the Developmental State in Africa collapsed due to the inability of the ISI strategy to adjust to the changes in the external conditions, including the breakdown in the Bretton Woods fixed exchange rate system, two major oil shocks, and the commodity boom-and-bust cycles. According to this view, it was not the industrial policies and, in particular, trade policies in use that caused the dismal economic performance (Rodrik, 2001).

The different performances of the ISI strategy in Africa and East Asia could also be explained in terms of differences in the characteristics of the policies adopted and in the initial conditions of the two groups of countries.²⁴

The first element which could account for the difference between the outcome of the Developmental State in the NICs and Africa is the role given in the two models, to innovation and technological change as engine of growth. While Asian NICs considered fostering innovation and technological change as the key to economic growth, African countries dedicated much less resources to this factor. This difference is apparent in the large gap in terms of investment in R&D (input) and patents or product and process innovation (output) recorded by the two regions – in favour of East Asia, since the mid 1960s.

The second difference concerns the specialization pattern and the production structures. Similar to the NICs, the sub-Saharan Africa developmental states were characterized by a high degree of external orientation. Indeed, African countries were highly dependent on external trade to drive their economies, quite unlike the NICs. Another important difference between the African countries and the NICs is that the latter were more diversified in terms of the technological intensity and composition of exports, whilst their sub-Saharan African counterparts relied almost exclusively on unprocessed primary commodity exports. Paradoxically, the inability to respond

²³ One may also add the lack of articulation between the ISI strategy and the development of the agricultural sector, the lack of ability to develop industrial capabilities and the inability to combine the ISI with some element of export promotion.

²⁴ For an institutional analysis of the difference between the East Asian and African experiences see Aryeetey and Nissanke (2003).

to the oil-crisis could be read as caused by not having pursued enough structural transformation and through government intervention and industrial policy.

In summary, it can be said that the inability to combine the ISI with some element of export promotion – which was key to the success of the NICs industrialization strategy – and the inability of African countries to develop industrial capabilities are the crucial elements – as far as the differences in the type of policies are concerned - which explain their different performance levels.

Another set of important differences between the two groups of countries concerns the initial conditions. Among these, the most important was the difference in the quality of education and technological knowledge. Human capital is generally regarded as one of the keys to development. Africa, unlike East Asia, but similar to Latin America, had a very low level of education. Because the take-off of industrialization needs the availability of an educated and skilled workforce, the lack of such condition played a role in hindering the development process in Africa. Finally, the geopolitical context of sub-Saharan Africa and the NICs was also markedly different.²⁵ While the United States of America, USA had a strong interest in the economic development of the East Asian countries, Africa was just a battle field for the Cold War (Arrighi, 2002).

These differences in the initial conditions (endowments, human capital, geo-political position, etc.) between East Asia and Sub-Saharan Africa were accentuated by the differences in their history of nation building. Indeed, the difference in the post-colonial economic heritage strongly contributed to the determination of the way the two groups of countries reacted to the oil-crises.²⁶

To explain the difference in the African and South East Asian industrialization experiences one should also consider several demand-side factors that help accelerate the post- World War II, East Asian development, not the least of which included the market access granted by the United States and the related US and Japanese investments in the region. Furthermore, these countries did not have to contend with Cold War influences, post colonial era political interference and the influence of bilateral “Francophone” and Commonwealth policies that impeded independent political action and economic planning in many African countries.

Finally, in the case of Africa the time period between African independence and the beginning of the global recession (about 15 to 20 years), was too short for any viable development policy to take shape. UNCTAD (2007) argues that, unlike the NICs – African countries had to abandon the ISI strategies too early for an entrepreneurial class to emerge. The SAPs indeed tended to marginalize domestic capital, with their focus being placed on foreign capital and on privatization (for fiscal reasons) rather than on building domestic productive capacity.

While all these elements concur to explain why the Developmental State and its ISI strategy failed in Africa, an additional important element should be considered. Robinson (2009a) proposes that the success of industrial policy depends on the politics of policy. His argument is that industrial policy has been successful when those with political power who have implemented the

25 For instance, the preferential access provided by the United States to its domestic market for its Asian allies was critical in the “take-off” of the region (Arrighi, 2002).

26 Quite ironically, what is not a difference between the NICs and the African countries is the absence of democracy, at least in the first phase of development. Lack of democracy cannot be the cause of the failure of the development state given the fact that most of the NICs had authoritarian regimes.

policy have had some reason to want industrialization to succeed, or been forced to act in this way by the incentives generated by political institutions. Apparently, these conditions were not met in Africa. While there are limits to the comparison that can be drawn between the NICs and Africa (UNCTAD, 2007), the latter share some similarities with the resource-rich Latin American countries. In particular, the Argentinean case is paradigmatic. In that case, the causes of the failure of government intervention were: (i) a bureaucracy unable to promote and coordinate industrial development; (ii) highly corrupted civil servants; and (iii) a highly unequal income distribution that made the implementation of any selective policy extremely difficult.²⁷

²⁷ Indeed, high inequality negatively affects the ability to implement industrial policies for two reasons. First, due to the low income level and to substantial credit constraint, the labour force cannot become more skilled (which is a pre-condition to innovation and development). Second, low income levels imply also a low saving rate (Amsden, 2001).

New World Dynamics and the Need for Africa to refocus Industrialization

The Globalization Process and New Rules in Trade and Industrial Policy

In the last decades, the world has dramatically changed. In particular, the globalization process has increased the dependence on the primary sector and the contraction of the manufacturing sector for most African countries (UNECA, 2010a). This has raised several concerns, in particular about the role of the raw material sector in Africa's development. While the resource-extractive sectors have been the major source of economic growth in Africa, up until now, they have been subject to extreme volatility caused by changes in world commodity markets. Indeed, the recent crisis has had a negative impact on African economies with the immediate effect of reducing its economic growth. Moreover, these extractive sectors are capital-intensive and, with few exceptions, have limited linkages on the domestic economies. Finally, these sectors are characterized by low employment and low employment elasticities.²⁸ The combination of small size and low employment elasticities implies that growth based on rapid expansion of these sectors will not generate high employment growth.

Not only has globalization impacted on African economies but it has also boosted the rise of new major actors such as China and India²⁹ and thus created new challenges and opportunities. Unfortunately, it seems that African countries did not take advantage of the opportunities and were consequently marginalized. This implies that the relative position of African countries *vis-a-vis* other developing countries is at risk of worsening even more if remedial actions are not undertaken. The main reason is that the constraints to the development of a competitive industrial sector are still too strong.

At the same time, the rules of the game in the world arena are rapidly changing (Haque, 2007; Di Maio, 2009). These changes have potentially large effects on the possibility to use industrial policy. There are at least two reasons for which past industrial policies cannot be simply applied to the African context. First, the global context in which governments and firms operate today is rather different from the situation that prevailed until two decades ago. Second, circumstances and conditions widely differ across countries. Thus no policy could be expected to work in all countries. As for the first point, the main difference between the current global environment and the one which characterised the "rise of the rest" (Amsden, 2000) may be listed as follows. First, WTO rules are becoming stricter even for LDCs. For instance, the new rules governing trade now also cover trade related measures with respect to foreign investments and intellectual property. At the same time, the number of bilateral agreements has enormously increased between developed and developing countries. Second, an increasingly large proportion of world trade today consists of intra-firm trade or trade within commercial networks. Producers from developing countries have to become part of a trade network or a (global) value chain. Indeed,

28 For instance, the mining sector employs less than 10 per cent of the labour force, while agriculture, manufacturing and services have a combined employment of over 80 per cent of the labour force (UNECA, 2010a).

29 The role of these two countries in Africa is extremely important from both an economic and political point of view. As the papers collected in Goldstein et al. (2009) show, the relation between the so-called Asian Drivers and SSA countries is much differentiated.

the kind of old fashioned outward oriented strategies at the country level would not generally be feasible or effective in today's environment.

Moreover, due to the increasing importance of fixed costs (advertisement, R&D expenses, etc.), large firms are becoming increasingly more important in world trade, and more able to influence economic and trade policy both at home and in host countries. Finally, the increasing importance of South-South trade raises a somewhat different set of industrial policy issues. This implies that African countries have given high priority to the request for reduction of tariff protection and increase in access to markets not only to developed countries but, perhaps more importantly, to emerging ones such as Brazil, China and India.

While the rules of the game have changed, industrial policy is still feasible and it would make a large contribution to foster economic growth (see for instance, Rodrik, 2004; Elhiraika, 2008; Chang, 2009; Di Maio, 2009). Nonetheless they need to be re-thought and adapted to the new context and challenges.³⁰ In particular, one should pay great attention that future trade negotiations and the economic partnership agreements (EPAs) do not constrain opportunities for industrial policy. The situation is complicated also because in addition to institutional changes, there have been also economic changes.

One such change is the increasing role of Information and Communication Technologies (ICTs) and of knowledge flows in production and trade. Another is the dramatic change in trade relations. One of the indirect effects of the new national and international regulatory frameworks is the increasing importance of global value chains (GVCs). Presently, GVCs are, in most cases, the only option for African firms to get access to larger (international) markets. Industrial policy should be shaped to take these novelties into consideration if it is to be effective. This will be discussed in the last section of the paper.

Industrial policy in Africa today

Industrialization currently figures among the highest policy priorities at the continental level. This is confirmed by the several initiatives, plans of action, development projects and calls to advance industrialization in Africa.³¹ In addition, several high-level meetings and numerous research studies have recently focused on issues of industrial development and industrial policy in Africa.³² While regional and subregional plans identify overall priorities, they also acknowledge the need to adapt industrial policies and incentives to national conditions. Indeed, government intervention is usually a mix of common practices and specific country-related policy measures.

³⁰ Nidal et al. (2008) notes that industrial policy has not changed much in North Africa during the 1980s and 1990s. While most of developing countries have abandoned direct government intervention in favor of an approach to industrial policy with a larger role for the private sector, North African countries have maintained much of the old style industrial policies and large state intervention in the economy. Paradoxically, the reasons for this are the persistent high oil revenues and the lack of a dramatic economic crisis which did allow governments to continue with the old-fashioned industrial policies.

³¹ Since the 1970s, a number of industrial development initiatives have been proposed at the regional and sub-regional level. (See for instance the Conference of African Ministers of Industry (CAMI), the First and Second Proposals for an Industrial Development Decade for Africa (IDDA), the New Partnership for Africa's Development (NEPAD), the African Productive Capacity Initiative (APCI) and the Plan of Action for Accelerated Industrial Development (AIDA).)

³² See, for instance, the World Bank Africa Finance and Private Sector Department (AFTFP) research programme on Africa's industrial competitiveness entitled, "Strategies to Leverage the New Global Economy."

Although the world has dramatically changed in the last three decades, governments are still largely engaged in industrial policy development. The following section presents a comparative review of the industrial policies implemented in recent years on the continent following the categorization presented in Di Maio (2009). Under consideration here are sectoral and competition, education and innovation and finally, trade policies.

Sectoral and competition policies

Several of the currently successful sectors in African economies have been the recipients of government support during the ISI period. For example, the automobile sector in South Africa is still the recipient, as it was during the ISI period, of a number of specific support policies. While the rules of the game have changed (see previous section), governments still support the sectors which are considered strategic to the country's development process. Table 5 reports the sectors which are considered priorities in the industrial development plan of a sample of African countries. They vary from country to country though some sectors such as agro-processing occur in most of the cases.

As it is clear from Table 5, the raw-material sector is central to African development. One important change that occurred in the last years is that it does not only produce for export but also started providing key inputs to other industries (i.e. cement and fertilizers). In some cases this created the conditions for positive spillover effects from heavy manufacturing – e.g. upstream and downstream linkages. Successful experiences include Ivory Coast (cement), Zimbabwe (wood products), South Africa (fertilizers) and Mozambique (aluminum). In all these cases, the institutional processes have played a central role. For instance, a government taskforce enabled Mozal (the large aluminum smelter in Mozambique) to be built in record time and under budget. Recently the tourism sector is increasingly becoming a strategic sector for a number of African economies, although the sector needs support to become more competitive. The World Bank has played a crucial role in this through the AFTFP projects in Madagascar, Zambia, Senegal, Mali, Gambia, Ethiopia and Cameroon.

Table 5: Sectoral Priorities of Industrial Policy in selected African countries

Country	Sectors
Botswana	automotive, beverages, textiles and clothing
Cameroon	textiles and clothing, wood, energy and hydrocarbons, agro-processing, pharmaceutical products, tourism
Cote d'Ivoire	agro-processing, building, civil engineering
Ghana	agro-processing, ICT, metal-based industries
Kenya	agro-processing, fertilisers, cement, fish, leather, pulp and paper, metals, plastics, textiles, clothing and footwear, ICT, electrics
Mauritius	ICT
Morocco	textile, clothing, tourism
Nigeria	pre-chemicals, machine tools, steel mills
Rwanda	agro-processing, ICT
Senegal	tourism
South Africa	automotive and components, textiles and clothing, pharmaceuticals, plastics, metals, pulp and paper, furniture, chemicals
Uganda	agro-processing, textiles and clothing

Sources: Harabi (2008), Marti and Ssenkubuge (2009), Soludo et. al. (2004), various national proposals, documents and declarations

Table 6 compares the sectoral and competition policies implemented in a sample of African countries. Competition policies are particularly important in the raw-material sectors. In the last ten years, government intervention in the form of a new regulatory environment has unleashed private investments in the sector (UNIDO, 2009). One such successful case is, for instance, Botswana. Still, there are critical elements related to improving governance of mining-related fiscal revenues and to avoiding the pronounced *Dutch-disease* effects that are preventing development of other industries. In the context of sectoral policies, of particular importance are the measures to attract investments to a selected sector. In Tanzania since the 1990s, there is a comprehensive investment promotion scheme, the National Investment Act. New investments in selected sectors receive a five-year tax holiday, waivers/drawback rights on imports and free long-term land leases. The response has been strong in several sectors, particularly tourism, industrial gold mining and fisheries.

Table 6: Sectoral and competition policies: comparative table, selected countries.

	Botswana	Cameroon	Cote d'Ivoire	Ghana	Kenya	Morocco	Mauritius	Nigeria	Rwanda	Senegal	Uganda	Zimbabwe
Facilitated credit for non-traditional manuf.	x		x			x	x			x		
Promotion of SMEs (non-traditional manuf.)	x		x	x	x	x					x	
Competition regulation						x						
Gov. procurement favouring local manuf.	x			x	x	x						

Sources: Harabi (2008), Marti and Ssenkubuge (2009), Soludo et. al. (2004), various national proposals, documents and declarations.

Education and innovation policies

Education is essential for improving the productive capacities of countries through supporting technological progress, complementing capital accumulation and enhancing structural change (UNCTAD, 2006). Indeed, the education level of a population is a pivotal input into the economic growth path. Several scholars have suggested that there is a relationship between the lagging industrial development in SSA and its weak human capital base.

In the 1970s, SSA had the lowest figures in the developing world regarding educational enrolments at practically all levels of schooling, worker training and higher education. Unfortunately, this problem has not been considered in the design of SAPs. This has surely contributed to retarding the development of capabilities in the industry. However, Africa has improved its accumulated human capital during the last twenty years. As reported by UNECA (2010a), the result of these efforts is a more educated labour force as the proportion of the labour force with secondary and university education increased from 18 to 22 and 6.8 to 7.2 per cent respectively between 1990 and 2007.

Yet, all these effort seems not to yield the expected results in terms of unemployment reduction and higher growth. The increasing number of unemployed who hold a university degree suggests a mismatch between the skills African education systems are producing and those needed by the business sector. There are two possibilities. First, students graduate in subjects which have no practical use in the business sector.³³Second, there is a situation of over-education. In this case, unemployment is due to the characteristics of the production structure of African economies – characterised by the prevalence of agriculture and raw (capital-intensive) material sectors - which does not require the high skilled workers universities are producing.

In recent years, African governments have started giving education and technology development high priority. In particular, more attention is being paid to creating a close interaction between education and technology policies. Among the numerous documents on the issue, the most important is the Science and Technology Consolidated Plan of Action (STCAP) approved by the African Union (AU) and NEPAD in 2005. There has been a great effort by regional institutions and economics scholars to understand and evaluate the working of the innovation systems in African countries.³⁴As for technology, the situation for African firms is very difficult. In particular, SMEs are characterized by very low technological levels.³⁵ On the other hand, the few large African firms conduct practically no in-house research and development (R&D). There is very little interaction between the industrial sector and the technology infrastructure. The results of the research institutes are generally unimpressive and they do not reach the local firms. Also technology information services established by several governments to help local firms, especially SMEs, to locate and purchase foreign technologies have not performed well.

While the difficulties are enormous, nonetheless, most countries are making effort to implement measures that foster innovation and technology accumulation by firms (see Table 7). Many African countries have created institutions for promotion of science and technology in the last decade, (such as the Industrial Research Institute in Ghana, the Industrial Research and Development Institute in Kenya and the Tanzanian Industrial Research Organization).³⁶ In some cases, the ambitious government objective is to re-design the infrastructure of the country, as seen in Angola's Science and Technology Innovation Policy programme (UNIDO, 2008). Ogbu et al. (1995) observe that many countries now have full-fledged technology ministries, which are supposed to demonstrate an acknowledgement of the importance of technology to development. Although the evidence is of mixed value, it demonstrates – at best - that the ability of government to coordinate and evaluate technology acquisition and use has been very weak.

33 For example, while about 50 per cent of university students in the Republic of China and Korea major in science, engineering or business, only 20 per cent of African students do so.

34 The first NEPAD Ministerial Conference on Science and Technology called on the NEPAD Secretariat to initiate activities that would generate an African Innovation Outlook (AIO). The objective was to provide a detailed account of innovation in the African context. Another important initiative has been carried on by UNU-INTECH for NEPAD. Two distinct, but complementary surveys, one on science and technology and a second on innovation were designed (UNU-INTECH, 2004). The results from the surveys will be used to benchmark the innovative performance of respective countries, identify common problems and search for regional solutions. As for academic scholars, Muchie et al. (2004) coordinated a collection of papers on African countries within the framework of the national innovation systems. Enos (1995) analyses R&D investments in detail, both before and after SAPs in Ghana, Kenya, Tanzania and Uganda. Lall and Pietrobelli (2002) evaluated the system of innovation in Ghana, Kenya, Tanzania, Uganda and Zimbabwe and how they contributed to the competitiveness of each country. Oyelaran-Oyeyinka (2006) investigated the role of technology and institutions in supporting SMEs in African industries.

35 In the Maghreb countries (Algeria, Tunisia, Morocco), innovation takes place almost exclusively in SMEs, with very little experience in R&D-based innovation, suffering notably from high levels of obsolescence both in terms of human resources and equipment (Djeffat, 2004).

36 For a detailed analysis of the characteristics, activities and performances of R&D institutions in Ghana, Kenya, Tanzania and Uganda, see Enos (1995).

Table 7: Innovation policies: comparative table, selected countries.

	Botswana	Cameroon	Cote d'Ivoire	Ghana	Kenya	Mauritius	Morocco	Nigeria	Rwanda	Senegal	Uganda	Zimbabwe
Measures to attract FDI (manufacturing)	x	x		x		x						x
Finance to access industrial technology, equipment and machinery	x					x	x					
Industrial research and technology diffusion	x			x	x	x	x	x			x	

Sources: Harabi (2008), Marti and Ssenkubuge (2009), Soludo et. al. (2004), various national proposals, documents and declarations

Africa clearly needs a more effective technology policy. Lall and Pietrobelli (2005) suggest that government intervention in the sphere of technology needs a strong re-direction along the lines of the national innovation system perspective. Oyelaran-Oyeyinka (2004b) argue that government has a key part to play in promoting 'dynamic learning' in companies through supporting an increased export orientation of SMEs and the provision of training to the workers.

Diyamett (2009) indicates that the cluster is the best approach to build a system of innovation in Africa. The basic concept is that the cluster system better fits the characteristics of the African innovation system. The latter is characterized by two main weaknesses and one peculiar characteristic. The first weakness is the absence of a link between science and technology. The second weakness is the fact that African markets are small, fragile and underdeveloped. This dramatically reduces the incentive demand for innovative products. In addition to these difficulties, there is the fact that the system of innovation is characterized by several low-tech sub-systems, in which incremental innovation and learning by doing are much more important than radical innovation and R&D.

The African environment is indeed characterized by SMEs with little experience in the field of R&D, relatively weak industrial performances in terms of productivity and high levels of obsolescence both in terms of human resources and equipment. The main problem with SMEs is that they locked into repetitive routines of learning-by-doing and disconnected from both local and global knowledge flows (Oyelaran-Oyeyinka, 2004b). One interesting opportunity for fostering innovation in and creation and diffusion of SMEs is, following the NICs' experience, to create science parks. The science park is one form of cluster initiative; it is a geographical place where firms, universities and other research centers, spinoffs from companies and R&D units of existing companies are close in location and exchange technological knowledge thus taking advantage of geographical proximity.

Trade policies

The past fifty years have seen dramatic increases in the importance of trade in the world economy because trade has grown much more rapidly than output. The approach to trade policies has

dramatically changed as well. Traditionally, trade policies have been fundamental tools of the industrial policy toolkit. Protectionist trade policies were widely used between the 1950s and 1970s. By the 1980s, developing countries had to turn towards policies that involved more open trade regimes. By the end of the 1980s, in virtually all developing countries liberalizing trade and investment was a prominent piece of their development programmes (Martin, 2001).

Under the label of trade policies can be grouped a number of very different instruments that are available to governments to influence trade relations. Among the most important are tariffs, export subsidies, quotas and other non-tariff barriers. All these policies have the objective of modifying trade relations between the domestic country and the rest of the world. Some policies impact on the country as a whole, while others impact only on specific sectors or even individual firms.

As previously mentioned, the rules of world trade have significantly changed and this had had a large impact on the use of trade policies. Still, Chang (2004) argues that it could be overestimated. For instance, countries still have the possibility to increase tariff in cases of emergency (import surcharge).³⁷. Moreover, most African countries are LDCs and thus are still allowed to use export subsidies, which other countries cannot. In addition, they can use subsidies for agriculture, regional development, basic R&D and environment-related technology upgrading.

Table 8: Trade policies instruments: comparative table, selected countries

	Botswana	Cameroon	Cote d'Ivoire	Ghana	Kenya	Mauritius	Morocco	Nigeria	Rwanda	Senegal	Uganda	Zimbabwe
Incentives for export activities	x	x	x	x	x	x	x		x	x	x	x
Export processing zones (EPZs)		x	x	x	x	x		x	x	x	x	x
Export promotion (manufacturing)	x			x	x	x	x		x			
Standardisation/quality improvement for exports	x	x	x		x				x		x	
Measures to attract FDI for export activities	x	x	x	x	x	x		x	x		x	x
Facilitated credit for non-traditional manuf.	x		x			x	x			x		
Selective tariff protection (peak/high tariffs)	x	x		x	x	x	x		x			
Utilisation of other trade instruments	x						x					
Export duties to favour local manufacturing		x		x	x		x		x			

Notes: ^a antidumping, countervailing or safeguard measures.

Sources: Harabi (2008), Marti and Ssenkubuge (2009), Soludo et. al. (2004), various national proposals, documents and declarations.

³⁷ This can be done on two grounds. The first is a sudden surge in sectoral imports. The second is the overall balance of payment problem.

Finally, there are a number of domestic policies that can be used for fostering investment in strategic sectors, for instance, subsidies on equipment investments, support for start-up enterprises, subsidies for investment in particular skills, etc. For instance, governments may support export also by creating export credit agencies that offer trade financing, generate and provide information, and pool risks. Indeed, as shown in Table 8, African countries make a large use of trade policies.

In particular, export promotion policies are one of the many instruments of industrial policy available to the governments to promote economic growth.³⁸ Among the most used trade policies are the incentives to export activities and the creation of Export Processing Zones (EPZs). EPZs provide large incentives to attract foreign firms, similar to what happened in the NICs at the beginning of their development process. While this instrument has been long and widely used, it seems that more evidence is needed to empirically assess how successful these EPZs have been. This would inform governments on whether to proceed with this strategy or employ resources in other measures. For instance, studies carried out in Ghana and Kenya have shown that government could play a positive role in exporting by creating the skilled labour required by exporting firms (UNECA, 2010a). These projects have been quite successful and have shown that the coordination between different types of policies is key to their efficacy.

An important element in the discussion about trade policy as an industrial policy instrument is the attempt by African countries to increase regional integration.³⁹ The objective is to increase intra-regional trade which is supposed to create better conditions for industrial development and structural change. There is no doubt that intra-African trade holds promise as a driver for African industrialization. Nonetheless, while the number of regional agreements in Africa has enormously increased, their impact on growth, at the moment, is still disappointing.⁴⁰

In fact, there is currently a great debate on the pros and cons of regional agreements (see World Bank, 2000). In the case of Africa, UNECA (2010b) concludes that too many institutions were created to coordinate cooperation efforts at the sub-regional level and that this caused duplication of efforts and some confusion of mandates. Governments should therefore rationalize the institutional setting and improve its technical, legal and financial capacities. Moreover, several scholars have asserted that the multilateral approach has a number of advantages over regional approaches (see Martin, 2001).

Equally important in terms of its potential impact on the industrialization process is the approach by African countries to Economic Partnership Agreements (EPAs) (UNECA, 2004). EPAs are an important opportunity but they should be carefully managed. Two things should be considered. First, governments should be aware that countries are very different and thus EPAs cannot be expected to solve different problems at the same time. Second, governments

38 An interesting example of the use of export subsidies is Zimbabwe. In the 1990s, the government actively promoted the horticulture industry through the provision of export financing and an export retention scheme (while foreign exchange was still rationed for the domestic market). Suppliers of inputs were considered as indirect exporters for purposes of foreign exchange allocation. Growth in the industry in turn has stimulated the packaging and paper industry (Nziramasanga; 1995).

39 With the words of the UNIDO Director-General Yumkella “The benefits of enhanced regional integration in Africa include increased production competitiveness through economies of scale and scope, increased trade opportunities through larger markets, increased opportunities for larger investments, and increased bargaining power. Coupled with integration, industrial development will allow African nations to [...] accelerate the process of achieving stronger political and economic cooperation.” (Speech delivered at the Africa Industrialization Day, November 18, 2009).

40 There are two main reasons. First, the production and export of most African economies are mostly represented by primary commodities such as minerals, timber, coffee, cocoa, and other raw materials which are mainly directed to developed countries. Second, the infrastructure system is inadequate.

should be careful as EPAs could limit even more the room for decision-making. Grimm and Brüntrup (2006) warns that this process may also reach the point where it will be even more severely restricted than by the individual SAPs of the 1980s. Finally, governments should push for sufficiently long transitional periods and provision of specific measures that take into account the varying needs of each country. To minimize possible adverse effects of EPAs, the status of implementation should be constantly monitored.

Successful country examples

There are a number of industrial success stories in the continent. Among these are Mauritius, Tunisia, Botswana, South Africa, Lesotho, Kenya, and others including Ghana, Cape Verde and Mozambique. All these have made significant strides in developing a viable industrial base – thus offering useful lessons on African best practices.

The Mauritius experience has attracted attention since the mid 90s becoming a well-known example of how a well designed industrial policy may bring about structural change, export growth and development. The study by Lall and Wignaraja (1998) shows that part of this success is due to the change in the specialization pattern resulting from a set of dedicated industrial policies. The quality of the incentive regime and of the policies for FDI promotion, the support for skill, technology and information development and the available physical infrastructures are all above the standards in developing countries. In the last decade, Mauritius has achieved a considerable success in exporting manufacturing products. Notably, this happened through a change in the specialization pattern of the country. To achieve this, the Government has invested in creating export-related skills and information and support institutions. Moreover, the increase in exports is mainly due to domestic producers increasing both quantity and quality of their exports. An efficient system of technology support has largely contributed to induce firms to improve the characteristics of their products. In the country, there are several institutions involved in productivity improvement support and training for SMEs. Among these, is the agency for export firms (EPZIDA) and the SME support agency (SMIDO). In both cases the results of their activities are highly positive. Mauritius' good governance allowed the country to adopt a non-orthodox trade regime: some relevant import restrictions coupled with the promotion of exports through export processing zones (EPZs). Subramanian (2009) argues that the explanations of the impressive growth experience since the mid-1970s cannot be ascribed solely to openness to trade and FDI. Instead, the peculiar history of the country, its institutional development and the ability of the government to manage the peculiar characteristics of the Mauritius population are all ingredients of this success. Frankel (2009) adds that the high investment in education is another crucial element of this success story.

Tunisia's recent growth has been very high in comparison to both African countries and countries at a similar level of development in other parts of the world. Tunisia has successfully implemented the economic reforms started in mid 80s, improving its competitiveness, diversifying its economy, reducing economic volatility and improving living standards. Data on GDP, export and FDI growth all show remarkably positive results. Most importantly, in recent years the industry's share in GDP increased to almost 30% with more than 80% of total exports being industrial products, 90% of which are manufactured goods. There is little doubt that this is indeed a successful case of industrialization. According to Balamoune-Lutz (2009), the key to Tunisia success is a development strategy that aimed at increasing the diversification level of domestic production and export. An important element in this strategy has been a strong investment in

the development of human capital, particularly of women. Erdle (2009) argues that the good economic performance is the result of a compressive industrial policy which is characterized by several key strategic elements. First, the government has tried to create an attractive and enabling institutional and regulatory environment to favour private enterprises. This primarily meant reducing state intervention and bureaucracy. For instance, the government introduced a single investment code with significant incentives for private investors while maintaining special provisions for strategic sectors. At the same time, there has been an increasing fading-out of government direct intervention in production and a growing adoption of public-private partnership PPP models and practices. Finally, a number of direct and indirect support mechanisms have been designed to facilitate restructuring and upgrading processes and access to foreign markets. In particular, dedicated credit lines in the Tunisia Export Market Access Fund (FAMEX) supporting exporting activity by domestic firms have shown to be very effective (López-Cálix et al., 2010).

Robinson (2009b) argues that the economic success of Botswana can be explained by the historical development of its political institutions. The peculiar historical evolution of the country created the conditions for a more stable and accountable government than elsewhere in Africa after independence. As a consequence, the Botswana's government is now characterized by its adoption of exceptionally good economic policies. Robinson derives two main lessons from Botswana's experience. First, even following simple and orthodox policies may bring positive results if the country's institutional setting is well functioning. Second, economic development could come from effective policy reforms and the development of efficient institutions. Most notably, as the Botswana case shows, African countries may develop their own version of political institutions as long as they are able to build a national identity and to continually modernize and adapt institutions.

The case of South Africa is interesting because it shows that industrial policy sometimes needs time to bring positive results. Since the end of apartheid in 1994, there has been an effort by the government to foster the country's industrialization as evidenced by a number of major policy documents, dealing with issues ranging from poverty reduction to stabilization, trade and competition and investment strategies (Lundahl and Petersson, 2009). The current country's success is the cumulative result of the policy making efforts since the start of the *Growth, Employment and Redistribution* (GEAR) programme. At the moment, South Africa has a number of instruments and agencies formulating and implementing industrial policies (Hausmann et al., 2008). The industrialization success of the country also depends on the well functioning of these agencies, their actions as well as programmes. Among them, the Motor Industry Development Program (MIDP) plays a central role in providing a wide range of incentives to different sectors. Particularly effective has been in these recent years, the Department of Public Enterprises which supports the development of local suppliers' capacity. The Department of Trade and Industry (DTI) administers the Motor Industry Development Program (MIDP) which provides a wide range of incentives to the sector. While there is considerable debate about the extent to which the MIDP has been successful, several indicators suggest that the programme achieved some of its objectives, e.g. exports have increased (Barnes et al., 2003). In addition to these programmes, industrialization has been facilitated by the activity of the Southern African Development Bank. The Bank has shown that it has the technical expertise, the required knowledge of the producers' needs, a sufficient degree of autonomy from the political sphere and the financial resources to be able to play an important role in funding the creation of new enterprises. The South Africa case shows that effective industrial policy may be the results of trial and error and could manifest its effects only in the long run.

The case of Lesotho is particularly interesting because looking at its geographical and economic conditions; one would be tempted to conclude that Lesotho is condemned to stay out from international trade. But government intervention made a difference to this situation when, in the early 2000s, in order to exploit the opportunity given by the AGOA, it took a series of actions to support the industrialization of the apparel sector. First, it provided subsidies for starting new firms. Second, it developed public-private collaboration to develop internationally acceptable standards on labor rights and wages. It also started programs aimed at improving the skills and capabilities of domestic workers. Third, it developed, again in strict collaboration with the private sector, a number of business and infrastructural services for the apparel value chain, including transport and logistics, and customs procedures. The result of this comprehensive intervention is that the Lesotho apparel industry has grown to the point where it has become an engine of growth in the country's development process (Shakya, 2010). The impressive growth of the apparel industry - and in particular of its export - has made contributions to employment growth as well as created significant backward and forward value chain linkages. The case of Lesotho's apparel industry presents some interesting lessons that could be useful for countries with a similar development profile. First, it shows that public-private collaboration is central to any successful industrial strategy. Second, it provides an example of how developing countries may use the opportunities offered by international trade agreements in a strategic way.

Another remarkable example of best practice in Africa is Kenya. In the last decades, Kenyan firms have sensibly increased their presence in regional markets. This has been possible also because the participation in exports has been facilitated by government intervention through the establishment of the Export Promotion Council (EPC) in 1992. The mission of the EPC is to enhance diversification of export markets and products and to facilitate identification and removal of obstacles to rapid development of the export sector. Another important ingredient of export success has been the activity of the trade associations that form the Kenya trade network such as Kenya Association of Manufacturers, Kenya National Chamber of Commerce and Industry and the Fresh Produce Exporters Association of Kenya. The Government export strategy is based on two objectives: 1) targeting of investment in specific sections; 2) attracting FDI and increasing the output of manufactured exports of higher value added. In order to achieve these objectives, the EPC support export development through a number of activities and instruments (ITC, 2001). These are: 1) *Sector Specific Panels*. These are fora where people from both the public and private sector elaborate recommendations for the EPC Board of Directors which would then submit them to the relevant authorities. The Panels cover a vast range of topics such as banking and finance, infrastructure, and issues related to specific sectors (i.e. coffee and tea, horticulture, textiles and garments); 2) *Export Market Development*: the EPC identifies market opportunities and formulates appropriate market strategies; 3) *Product Development and Adaptation*: the EPC's activity has the objective to facilitate the development and adaptation of products to suit specific market requirements, i.e. provide firms with technical assistance and knowledge related to issues like quality and packaging; 4) *Trade Information Delivery Services*: the EPC provides traders with necessary information to facilitate trade. Finally, particularly effective has also been the set of policies devoted to attract FDI to the country (Gachino, 2009).

While these are the most commonly known examples of industrial success stories in the African continent, other countries have also recorded remarkable results in recent years. One of this is Ghana whose success story is described in Fosu (2009). Also the case of Cape Verde and Mozambique are interesting success stories in the context of SSA. Braga de Macedo and Pereira (2009) argue that Cape Verde and Mozambique are two cases of countries which have been able to face globalization by introducing effective changes in both economic policies and institutional

arrangements. Notably, both are part of sub-regional cooperation agreements, which show the importance of exploiting the opportunities the regional trade agreements offer to industrialize.

All these case studies show that there are different ways to achieve high growth and structural change. There are a number of African best practice countries in terms of their industrial policy which other countries can emulate in their quest to pursue successful industrialization and sustained economic growth.

Which are the main Industrial Policy Options for African Countries?

The industrialization experience of Africa in the last few decades is very different from that of the fast-growing emerging countries. For the latter, the manufacturing sector has become increasingly more important while agriculture still contributes about a quarter of the GDP. Moreover, even if agriculture's share of GDP decreased during last decade, the share of mining rose by a similar percentage. Thus, instead of a structural change towards other sectors, there has been a shift from one primary activity to another (UNECA, 2010a). While this may have short run positive effects, it certainly did not lay the basis for a more diversified and dynamic economy. Mineral and other natural resources are non-renewable and commodity prices tend to be highly volatile: both these factors introduce additional elements of uncertainty into the already fragile African growth trajectory. Indeed, if employment is to grow fast enough to absorb the growing labour force in African economies, the structure of these economies will have to be transformed from almost exclusive reliance on growth in natural resource extraction to increased growth in manufacturing, service and agro-industry, where employment elasticities are much higher.

The context for the formulation of industrial policies has changed. The global economy and global industrial production patterns have evolved, and policies therefore need rethinking with a solid anchorage in national circumstances (UNIDO, 2009). Recent research suggests that for most low income countries, long term growth, job creation, and poverty reduction depend on a competitive and increasingly diverse and sophisticated industrial production and export structure. Thus, if structural transformation and diversification is the objective, a set of industrial policies have to be established (UNECA, 2007).

Lall (1995) argues that the poor industrial performance of African countries indicates that some policy reform is necessary. Though, it is clear that the adoption of the ISI strategy is of the past, its limitations within the African context is evidently obvious.⁴¹ Also the new role of the Asian Drivers in the continent calls for a new set of policies and policy measures (see Goldstein et al., 2009).

According to Elhiraika (2008), there are a number of industrial policies that may help the process of production diversification in Africa. Among the most important are measures to promote entrepreneurship skills, in particular management skills and the ability to perceive and take advantage of profitable opportunities. Moreover, providing incentives to risk taking by entrepreneurs would ease the decision to search for technological change and to enter foreign markets. Governments could also promote product diversification by addressing market failures, in particular imperfect information and coordination externalities (Hausmann and Rodrik, 2003; Haque, 2007).

Rodrik (2004) points out that the key to development is discovery of new activities. For industrial policy to be effective, it needs to have certain characteristics. First, incentives should be provided only to new activities with clear rules to determine successes and failures. Second,

⁴¹ Still it is important to note that even if several countries have failed, there also have been some successful cases of government intervention. Acemoglu et al. (2003), for instance, attribute most of Botswana's success to large public investment in education, health, and infrastructure and efficient and meritocratic bureaucracy during the Developmental State period.

government intervention and public support must be phased out by default to avoid subsidizing failing industries and support should target activities rather than sectors. Third, subsidized activities must have the clear potential of providing spillovers and also a cycle of discovery. Fourth, implementing agencies must have demonstrated competence, be monitored by bodies that have a stake in outcomes as well as political authority at the highest level and in addition, maintain channels of communication with the private sector. Finally, there needs to be mechanisms for correcting the possible mistakes about “picking the loser”.

Increasing trade integration and promoting regionally integrated value chains may enhance industrial competitiveness and regional economic transformation and increase production diversification in Africa (UNECA, 2010b). However, the process of liberalization should be gradual. Moreover it should be accompanied by a strategy of industrial restructuring and upgrading in order to allow firms to prepare for new challenges. In this context, is important to consider that there are clear limitations to what trade policy, or outward orientation, can accomplish (Rodrik, 1999). An excessive emphasis on trade liberalization could divert energies and political resources of government from growth fundamentals (education, capital accumulation, infrastructures, etc.). Economic policy should focus on growth not on trade, since increasing trade should be an instrument not an objective *per se*.

At the same time, it should be acknowledged that a novelty in recent years has been the role of regional industrial policy formulation. For instance, AIDA interventions have been envisioned at regional and continental levels incorporating the potential roles to be played by the African regional economic communities, and at the continental level, the African Union. In this sense, the establishment of improved networks between states and between the existing RECs is another key element for any successful industrial strategy.

All the strategies previously discussed imply some form of government intervention and thus, pose the question of government failure. Because of the lack of capability, one should be cautious about the ability of government to implement interventions in support of industrialization. Some pre-conditions are required to make government intervention effective. Pietrobelli (2008) argues that the ability of African countries to design and implement policies to support local suppliers and producers is usually very weak and should be supported by international cooperation. Lall (1995) emphasizes that improving government capabilities should be the first objective.

Indeed, without the necessary government capacity, any type of government intervention is doomed to fail. This position remains valid irrespective of whatever policy the government is called upon to design: the (supposedly) market-friendly policies or the more interventionist ones. For this same reason, African governments should not even attempt the kind of pervasive interventions practiced in a country such as South Korea in the 1970s. It also follows that the degree and form of selectivity that each government could sustain depends on the specific country. A clear policy priority is, therefore, to improve capabilities for strategic policy design, formulation and policy implementation. At the same time, governments should explore ways of making the necessary private-public collaboration most effective.

An effective technology infrastructure is invaluable for upgrading the competitive capabilities of industry. This is one of the main lessons from the experiences of East Asian governments, which provide a range of technological and information services to their enterprises. Strong efforts should be also devoted to development of technology infrastructure. Consultancy assistance to

firms to obtain quality and standard certification, especially to small and medium enterprises (SMEs) should be provided. Moreover, interventions have to be selective. Efforts should be concentrated on improving services to industries that are of strategic importance in terms of international competitiveness and growth potential.

Industrial policy should be designed to minimize the possibility of rent-seeking, corruption and waste of resources. Elhiraika (2008) suggests that this can be done if the policy focuses on the process rather than the outcomes of industrial restructuring. Sometimes reducing government intervention may help. For instance, in the mid- 1990s, the major constraint for the horticulture industry in Kenya and Zimbabwe was freight charges, related to the inefficiencies of the State-owned freight airlines. The elimination of the monopoly in freight handling stimulated the sector (Humphrey et al. 2004). Consequently, resources became available to the government, as it engaged in other growth activities.

As mentioned, there are three main measures to support industrial restructuring and upgrading: a) skills development, (b) technology support, and (c) finance support. In particular, attention should be paid to the quality of training and how it can respond to the needs of industrial technology. Analysis of the current African experience suggests that more selective intervention would be useful in this context. More effort should be concentrated on activities in which countries can become internationally competitive. Policies should provide incentives for firms to increase in-house training and create training institutes. The priority is to solve the technical problems related to provision of inputs to the firms in the industry. This is in line with what Oyelaran-Oyeyinka (2006) suggested should be done first: simple measures such as providing electricity.

In many SSA countries, the environment for business activities is unattractive and constitutes an obstacle to local and foreign investment. The *Doing Business Report* of the World Bank shows that time spent and the costs associated with regulation is greater for businesses in SSA than in other regions of the world. Business-development services must be provided by the public sector (von Drachenfels and Altenburg, 2006), though the private sector should also offer them. The positive externality stemming from increased entrepreneurship (see also Hausmann and Rodrik, 2003) implies that business-development services should provide targeted training courses, strategic further education particularly at university level and an environment conducive for the inculcation of the entrepreneurial spirit. Innovative ventures require identification of market opportunities with deliberate efforts made to use them.

For this to happen, entrepreneurial spirit and management skills are required, thus implying the need for training and investment in research to be improved upon as well as increased (von Drachenfels and Altenburg, 2006). In the context of Africa, Botswana provides an encouraging example of active State involvement in the development of domestic enterprises (Elhiraika, 2008).⁴² Excessive emphasis is sometimes placed on the growth potential of an improved busi-

⁴² Botswana has a number of State-funded institutions involved in enterprise development. These include the Botswana Development Corporation (BDC) that provides financial support to medium- and large-size businesses and also monitors their performance; the Citizen Entrepreneurial Development Agency (CEDA), which provides funding and technical assistance for the development of enterprises in various sectors; the Local Enterprise Development Authority (LEA), which facilitates entrepreneurship and small- and medium-enterprise development through targeted interventions, to achieve economic diversification through business development services, access to technology, finance and infrastructure, networking and R&D. CEDA and LEA often work together to provide training to potential entrepreneurs and to help them develop business plans. Finally, the Hospitality and Tourism Association of Botswana (HATAB) provides assistance for business development in its area.

ness environment, a measure necessary to expand infrastructure and enhance the rapid integration of SSA into the liberalized world trade (von Drachenfels and Altenburg, 2006).

One of the major changes in the approach to industrialization in the last decades has been the increasing acknowledgment of the role of the private sector which has, in recent times, been increasingly partnering with government in the economic development process. Investment promotion agencies (IPAs) in Africa, whether established as autonomous agencies or departments/units within government ministries, have been given specific mandates to promote investment, both foreign and local, in their respective countries. Recently, efforts have been made by AfrIPANet⁴³ to put investment issues onto the Agenda of the Conference of African Ministers of Industry CAMI since investment promotion is perceived as a key to the development of Africa through industrialization (Regional Programme for Investment Promotion in Africa, 2009⁴⁴). In this context, the role of government should be to provide incentives for private enterprise (domestic and foreign) to attract investment. This strategy is likely to be more successful if sufficient attention will be paid to coordinating the different initiatives being undertaken to promote industrialization in Africa.

Another crucial issue is the role of technology and innovation for development in African countries. While everybody agrees that innovation is a necessary condition for improving economic performance, views on how to proceed with technology and innovation abound. For instance, Kim (1999) suggested that African countries should focus on adopting mature technologies where products and processes have been standardized and operations can be based on turn-key operations from imported plant and machinery, patented technologies, blueprints and codified procedures. In contrast, Enos (1995) argued that directing R&D efforts towards new sectors would best serve the development needs of Africa.

In the last part of this section, two particularly promising strategies for fostering industrialization and growth are considered, namely promoting industrial clusters and upgrading along the agricultural value chain. In the last part of the section, a typology of African countries is proposed, to identify which is the best industrial policy mix for each country.

Promoting industrial clusters

Industrial clusters play a central role in fostering the industrialization and development process. Pietrobelli (2008) argues that the cluster level is often where it is appropriate to design and implement new policies. In particular, there are important economies of scale in service delivery and in the development of local systems to address standards, which help to make policy implementation at the cluster level more efficient. Oyelaran-Oyeyinka and McCormick (2007) produced a collection of studies showing that the role of governments in industrial development has been large in Africa in recent years, particularly in supporting clusters.

An important element in industrial development is the system of linkages among industrial units and firms. Ogbu et al. (1995) suggest that the absence of a dynamic capital-goods sector in SSA countries constitutes the most serious obstacle to dynamic industrial linkages. Often, suppliers

⁴³ As expressed at its launch in 2001, AfrIPANet is motivated by “The need to have a common platform where Sub-Saharan African IPAs can meet to deliberate on issues affecting the region and to work together with UNIDO, the donors and other international agencies to find solutions to address the common problems of the region.”

⁴⁴ http://www.unido.org/fileadmin/user_media/UNIDO_Worldwide/Africa_Programme/CAMI/AfricaStrategy_English.PDF

in distant lands are a poor substitute or no substitute at all for local suppliers. This is particularly true in the case of agricultural production. This is one of the reasons the cluster approach may be particularly effective in the case of African countries. Another advantage of industrial clusters is that they enhance enterprise performance by reducing transaction costs to reach traders. Moreover, as shown for the tailoring sector in Kenya by Akoten and Otsuka (2007), linking up with traders increase tailors' production capabilities and thus contributes to the transformation of the mode of industrial production in developing economies.

There are several reasons for supporting cluster development. Based on her extensive research, McCormick (1999) argues that governments, donors, and the business community should support existing clusters and create the conditions necessary to develop new ones because they facilitate the industrialization process. In particular, governments should offer improved infrastructure and other incentives to producers to locate in the cluster, and create a policy environment that facilitates business activity (i.e. easing borrowing, reducing bureaucracy, etc). Finally, business associations and chambers of commerce should create opportunities for small enterprises to communicate with larger firms, which is a first step in the direction of possible cooperation.

Oyelaran-Oyeyinka and Lal (2006) analyses the role of institutional infrastructural and collective learning in the adoption of new technologies in African clusters. The study considers the Suame cluster in Ghana and the Kamukunji and Kariobangi clusters in Kenya. The authors suggest that an intervention by the governments and a greater participation of the private sector is required in setting up training and information service centers within clusters. The objective is indeed to provide need-based skills for better usage of new technologies, i.e. ICT technologies such as e-mail and the Internet. Another interesting case illustrating the benefit from inter-firm collaboration and clustering comes from the experience of rice farmers in the Mbarali district in Tanzania. The Private Enterprise Support Activities program (PESA) - supported by the United States Agency for International Development USAID - assists farmers in forming producer associations and to strengthen existing groups that pool resources and improve their sales position.⁴⁵ The associations serve as vehicles for training in marketing, bargaining, and financial management skills. The program also created a micro-credit system to support farmers' investment projects. This allowed them to significantly improve their production technique.

Zeng (2008) argues that there cannot be general policy suggestions for cluster development. As shown by her collection of cluster studies, there is an enormous variety of situations and hence no policy that can be uniformly applicable to all clusters in Africa. To meet the needs of clusters' diverse contexts and industries, policy design and implementation must be carefully set at the local level. Still, government measures should always include efforts to: a) encourage further knowledge acquisition, adaptation, and diffusion; b) strengthen educational institutions and technology institutes and their link with the business sector; c) strengthen and upgrade skill training and d) provide sound infrastructure. Interestingly, similar conclusions are also supported by case-studies in Oyelaran-Oyeyinka and McCormick (2007).

One interesting piece of evidence about policies that foster cluster growth is provided by Diyamett (2009).⁴⁶ The preliminary results of the cluster initiatives in Tanzania suggest that there have been improvements in several dimensions, namely: visibility of the firms involved in the project, trust and linkage formation, and collective efficiency. There are also some indications of

⁴⁵ See: http://www.dai.com/work/success_stories_detail.php?stid=25.

⁴⁶ The project included eight clusters: metal work and engineering, mushroom, vegetable seed, seaweed, tourism and cultural heritage, pharmaceuticals, sisal, and vegetable and food.

the beginning of a process of product diversification and quality improvement. This is an interesting experience since it demonstrates a cluster forming as the outcome of collaboration, in this case, between SIDA that founded the initiative and the University of Dar es Salaam. In fact, the whole project has been coordinated by the College of Engineering and Technology (CoeT) of the University of Dar es Salaam.⁴⁷

The analysis of the cluster initiative suggests some interesting conclusions and policy advice. The cluster approach works well when (at least) three actors take part in the initiative: the university, the government and the private sector. In particular, the author suggests that the cluster initiative should be coupled with the creation of a science park. Moreover, the key should be to combine the availability of natural resources and exploit the capabilities present in the University. Indeed, African countries do not lack excellence or expertise in the academia: what is missing is instead a way of bringing them closer to the needs of their country's economic development.

Clusters may also be particularly effective because they create conditions to improve product quality through spillover effects and imitation. The shoes cluster in Ethiopia analysed in Sonobe et al. (2009) is a clear example of this. The industry had a dramatic contradiction due to the entry of China in the market around 2000. It followed a period of massive entry of new enterprises established by former employees of the existing shoe factories. Soon after, the industry started to grow again thanks to improvement in the quality of products, and improved marketing and management, which led to an increase in size of the shoe firms. This has been possible because of improvements introduced by highly educated entrepreneurs, which were then followed by others. The ingredients for this success point to: the absorption of technological and management knowledge and the positive effect of better marketing. It follows that the government should a) support investment in managerial skills; b) promote knowledge spillovers through infrastructure, industrial zoning, and marketplace construction; and c) ease the access to credit for innovative enterprises.

Similarly, in their study of Kenyan micro- and small-enterprise clusters, McCormick and Kinyanjui (2007) note that having to produce for high-quality demand customers such as supermarkets, hospitals, schools and governments can enhance productive capacity. It follows that governments should design and implement policies to support clusters in this process of improving their supply in terms of characteristics, quality and timing. Also enterprise associations, non-government organizations, research institutions and larger private-sector actors should cooperate to realize this objective. Another interesting example of cluster support is documented in Morris and Robbins (2007). They describe the active involvement of the South African Government in supporting the automobile clusters. In this case, support measures are provided by the Department of Trade and Industry and include access to credit and market information, provision of training and labour-market reforms.

Mytelka (2007) emphasizes that government intervention may nurture the emergence of clusters but cannot, in general, create it from scratch. Instead, policies should be designed to create an environment conducive to the conditions under which a cluster can emerge. Moreover, it is important to emphasize that clusters are not necessarily innovation systems. This implies that providing support to the cluster does not necessarily mean improving firms' innovation performance. Instead, transforming clusters into innovation systems requires sustained and focused policy support.

⁴⁷ The important role played by the CoeT is also described in Mwamila and Temu (2006).

For instance, natural resources (NR) clusters have specific characteristics that require specific forms of government intervention (Pietrobelli and Rabellotti, 2006). In the case of NR-based clusters, it is often the case that research is concentrated in the leader of the chain. It follows that, more than for other clusters, SMEs need public and local research institutions to support them in adapting and internalizing the leader research advancements in their production process. In addition, public policy programmes should be designed to disseminate research to SMEs and to induce them to collaborate with research institutions.

While examples of active interventions are numerous and successful cases are not exceptions, still more has to be done, especially for the diffusion and adoption of information and communication technologies (ICTs) within clusters. Oyelaran-Oyeyinka et al. (2007) analyzing the Suame cluster in northern Ghana and the Kamukunji and Kariobangi clusters in Kenya show that no policies are in place to support ICTs even though it is very likely that they would deliver high payoffs. Because ICTs are an important means to increase competencies and collective efficiency, they suggest adoption of policies that increase private-sector participation in setting up training and information service centers within clusters. In addition, governments should provide subsidies and financing schemes to support the adoption of new technology.

Upgrading along the agricultural value chain

For a number of the poorest countries, developing an agro-industry may be the key to take-off (Humphrey and Memedovic, 2006).⁴⁸ However, while agriculture is crucial for the growth of African countries, it has to be considered that not all agricultural sectors provide the same opportunities for export-led growth. Over the past quarter-century, there has been a significant transformation of global trade in agricultural products. Indeed, there is a now marked differentiation in world product demand, away from traditional tropical products (coffee, cocoa, tea, sugar, spices and nuts) and towards non-traditional agricultural exports, particularly horticulture (fruit, vegetables and flowers).⁴⁹

The rapid expansion of global demand for and trade in horticultural and seafood products has created attractive export opportunities, while the relative decline of traditional tropical products, combined with the entry of new competitors for some products, most notably coffee, creates problems. International trade in horticultural products has increased markedly and some African countries have been able to benefit from this trade. In particular, agri-business holds great promise for Africa and the horticulture industry is potentially extremely important for growth in the region.

There are several reasons why the government should intervene in the promotion of agribusiness and agro-industry in Africa and to support firms in upgrading along the global value chain (UNECA; 2009; Wilkinson and Rocha, 2009). For instance, Elhiraika (2008) argues that government intervention in the promotion of horticulture in East Africa is justified in terms of solving a coordination problem. Indeed, for the sector to develop a simultaneous investment in farms, energy, transportation and marketing facilities are required. Humphrey and Memedovic (2006)

48 For instance, the UK Government's Department for International Development (DFID) argues that: "agricultural growth and increases in agricultural productivity may be a prerequisite to broader-based sustained economic growth and development" (DFID, 2002: p. 9).

49 In the 1980s, traditional tropical products accounted for around 39 per cent of all food exports from developing countries. Twenty years later, this had fallen to around 19 per cent. Conversely, the share of horticultural products in developing-country food exports rose from around 15 to 22 per cent (Humphrey and Memedovic, 2006).

argue that government intervention is justified by the fact that meeting the market requirements for agribusiness products has become more challenging in recent years. This is one of the effects of the increasing importance of GVCs in agricultural trade (see below).

The importance and complexity of standards has increased and the policy issues for developing-country governments are numerous and challenging. For instance, as global buyers become more demanding, successful agri-business exporting needs physical and informational infrastructure that will support coordination between enterprises and traders. Luckily, the type of technology needed is not too sophisticated and even a simple ICT infrastructure would bring large benefits.

Still, given the weakness of the private sector, government support will be needed. Moreover, the governments should develop efficient marketing organizations or private-sector institutions. At the same time, since the issue of the control of standards has become particularly important for success in global agribusiness markets, government should support the development of local consultancy and certification companies. Finally, government could increase the efficiency of firms by fostering collaboration between export enterprises or providing business-oriented extension services to farmers. Since trade in agricultural commodities increasingly depends on industrial capability and capacity, the government should provide services for the agricultural sector. The private sector in sub-Saharan Africa needs more than a deregulated business environment (von Drachenfels and Altenburg, 2006).

There are a number of government projects and plans of action to support the agriculture sector in Africa.⁵⁰ Nonetheless, the sector still faces difficulties in its growth and in international competitiveness. One of the reasons is that the international context has changed and this is not always taken into account in the design of policies to support agriculture. UNECA (2009) indicates the increasing importance given by international agencies and public and private actors to the development of agribusiness and agro-industry in Africa. The report notes that while the process of creating a regional value chain system is still at the beginning, some steps forward to support it have been decided. UNECA (2009) also acknowledges the importance of strengthening information exchange and knowledge management.

To this end, governments should intervene to protect property rights and brands and facilitate the creation of links between producers as a means of creating value addition. Second, governments should design policies to make SMEs play a prominent role in this process. Third, governments should intervene to link the informal credit systems to the formal in order to develop the possibility for financing innovation and production up-grading. Finally, governments should cooperate in order to reduce the restrictions to trade in goods and services within and between countries in the region in order to create a stable trade environment for promoting agribusiness. There are also a number of development programmes from donors focusing on developing agro-business. For instance, the World Bank AFTFP⁵¹ supports agribusiness competitiveness through financing infrastructure investment, government extension services; research and development capacities; disease control; phyto-sanitary and certification systems; custom and fiscal issues; regulatory framework and building capacity and public-private partnerships at local and national levels.

⁵⁰ Among these the most important are the NEPAD's Comprehensive Africa Agriculture Development Programme (CAADP) (2005), the Alliance for a Green Revolution in Africa (AGRA) (2006) and the UN, World Bank, and IMF High Level Task Force on the Global Food Crisis (2008).

⁵¹ See the website <http://go.worldbank.org/NGPCAFWBJ0>

As said, one of the major changes that occurred in world trade in recent years has been the increase in the importance of Global Value Chains (GVCs) for agricultural firms in developing countries. One should thus evaluate which are the best policies to support firms in this new context. The agriculture sector is most often characterized by a hierarchical structure (Dolan and Humphrey, 2001). Given the position of African firms in the agricultural GVCs and the characteristics of world trade, Gibbon and Ponte (2005) suggest that African firms should increase specialization, and focus on simple and labour-intensive technologies, trying to access large markets via large-scale retailers. In other words, they should consolidate their role as suppliers of the GVCs. This is what they call “trading down” strategy. On the contrary, Pietrobelli (2008) notes that, while buyers and chain leaders are becoming increasingly more demanding, they often do not transfer knowledge and technological capabilities. Thus local firms need to invest on their own, in learning and building capabilities to innovate and up-grade. Indeed, the value-addition of African agricultural products is often low.

Yet the search for specific market niches to exploit advanced capabilities always offers potential benefits.⁵² It follows that a priority of the governments in the regions should be to facilitate agribusiness development, modernizing agriculture along the value chain (from the input markets, through agro-processing to the distribution systems and output marketing). To reach these objectives, a set of policies are necessary. For instance, to overcome the obstacles relating to the small domestic market for agricultural products, UNECA (2009) suggests creating regionally integrated value chains.

There are clearly two opposing views.⁵³ While some authors argue that African firms should focus on improving their performance as suppliers, others state the need for continuous innovation as a way to upgrade and remain competitive, even in the agricultural sector. In the second case government intervention is necessary but a pre-requisite for policy intervention is the development of the necessary government capabilities to design, formulate and implement strategic policies. In this, international cooperation can play a useful role. Thus, the main objective of policy intervention should be the provision of technical assistance to SMEs to meet with sanitary, environmental and industrial standards which characterize both international trade and inter-firm operations within GVCs. Pietrobelli (2008) suggests that this type of intervention is particularly effective if administered at the cluster level and in the form of joint actions involving small growers together with buyers and chain leaders.⁵⁴

More specifically, to induce such beneficial behaviour, the access to loans and grants for SMEs should be made conditional to the effective implementation and maintenance of quality and sanitary standards. There are already positive experience of policy intervention to support the development of national standards and agencies from which inspiration can be drawn. For instance, in the mid-1980s, the Cote D’Ivoire National Standards and Certification Body (CODI-NORM) was created by the government to set the standards for Ghanaian products and exports (Oussou et al., 2004). Another interesting case is the policy support to a local certification firm in Kenya, the AfriCert. GTZ was responsible for training AfriCert agents, who offer growers in

52 Fresh vegetables are a good example of a non-traditional agricultural export crop, and they illustrate the potential for agricultural diversification and production of high-value crops.

53 Kaplinsky and Farooki (2010) discuss how the evolution of the recent financial and economic crisis in the global economy may impact on the African firms inserted in the GVCs. They predict that African firms will be forced into lower levels of value added activities.

54 Particularly active in this area are Swedish International Development Agency (SIDA) and the Norwegian Development Cooperation Agency (NORAD) with several programmes developed to target the promotion of African exports through quality and product safety.

Kenya and the region affordable certification in line with internationally recognized standards. These are experiences that should be taken as examples of successful and useful government intervention to sustain agricultural development along the GVCs.

Interestingly, Humphrey and Memedovic (2006) oppose the view that SMEs may play a positive role in developments that ensure policies to support them are optimal. While there are still some niches for small farmers in global markets (i.e. Fair Trade), major trends in global agribusiness appear to undermine their competitive ability to survive. In this view, not too much emphasis should be placed on sustaining SMEs and their access to developed countries' markets. Rather, one should devise policies to allow SMEs to increase their presence in the local and regional markets.

Gibbon (2001) argues that the optimal policy in the presence of a GVC is difficult to determine because of the trade-off options. His argument is based on the evidence that African firms belonging to the Fresh Fruit and Vegetable (FFV) value chains have experienced significant upgrading without any government intervention but solely due to their spontaneous organizational learning. It follows that the optimal policy intervention is to promote firms in those sub-sectors where global chains are driven by developed-country leaders. Because it is the interaction between African firms and leaders in developed countries that brings about improvements for local firms, this learning and up-grading process should be further accelerated.

Governments should therefore intervene to selectively assist local enterprises, help strengthen their links with lead firms in world markets, and support local institutions which could generate joint projects. This strategy poses a problem because it creates a trade-off between upgrading and exclusion. The reason is that (at least in some GVCs) the upgrading of a few (larger-scale) producers implies the marginalization of many (smaller-scale) ones. It follows that, *a priori*, one cannot exclude the possibility that the involvement in GVCs which are not driven by developed countries' retailers/traders may have more positive implications for broad-based growth.

A typology of African countries and industrial policies

In this section, a methodology to determine the most appropriate industrial policy for African countries is outlined. To this end, as a first step, a new categorization of African countries based on their economic feature is presented. Drawing on the previous discussion concerning the available options for industrial policy in Africa and on the perspective for new approaches to industrialization (i.e. cluster initiatives and policies to upgrade along the agricultural value chain), the typology will be used to determine which industrial policy best fits a specific country.

While most African countries are agricultural based (World Bank, 2008), there are important differences across countries that suggests the need for different types of government interventions. As previously argued the choice of the most appropriate industrial policy to foster economic growth is context-specific and, ultimately, has to be shaped at the individual country level. Yet, the advantage of a typology is to highlight and emphasize the importance of the key features that influence the development paths of different categories of countries sharing relatively similar conditions.

Based on previous studies⁵⁵ and on the domains of industrial policy analyzed in the previous section, a categorization of African countries based on three elements is proposed:

- 1) *Endowments* (resource-rich vs. resource-poor countries: a country is defined resource-rich (resource poor) if more (less) than 10% of the country's GDP comes from the primary commodity value added.)
- 2) *Geographical location* (landlocked vs. coastal countries)
- 3) *Population level* (large vs. small: country is defined as large (small) if its population is larger (smaller) than the African mean population)

The starting point of the typology is Ndulu et al (2008) which categorize SSA countries based on two criteria: a) *endowments* (resource-rich countries⁵⁶ vs. non-resource rich); and b) *location* (coastal or landlocked, based on the idea that coastal countries have higher opportunities than landlocked economies). Interestingly, they argue that the geographical aspect is not important when the country is resource-rich because the endowment element outweighs the geographical element. It follows that their categorization yields three groups: resource-rich (does not matter if coastal or landlocked), resource-scarce landlocked and, resource-scarce coastal countries.

In the categorization here proposed, the two dimensions discussed in Ndulu et al. (2008) are adopted and – as in their paper - the geographical location dimension is excluded when categorizing resource-rich economies. The novelty of the proposed categorization is the inclusion of an additional dimension to *Endowments* and *Geographical location*.

The new dimension is the *Population level*. The population dimension of a country gives some indications on how much – at least in theory – the industrialization process can be driven by domestic demand. The larger the population the more likely it is that domestic demand could be an engine for industrialization. Obviously, the population level is only a necessary condition since per-capita purchasing power would also be crucial in determining the dimension of domestic demand. Notwithstanding, the population is the pre-condition for any domestic driven development. Small states, independent of their economic development can hardly aim for a development strategy focused on the domestic market.⁵⁷ Table 9 categorizes all African countries⁵⁸ according to the three dimensions.⁵⁹

55 Other categorizations have been proposed by Ndulu et al (2008) (AERC typology), Diao et al, (2008) (the IFPRI typology), World Bank (2008) (World Development Report typology) and Thorbecke (2009).

56 To be classified as resource-rich at least ten per cent of the country's GDP has to come from primary commodity value added).

57 As an alternative measure to total population, one could consider to use per-capita income. But the very high inequality that characterizes African countries could make the conclusion biased. Finally, one could overcome this problem using a dispersion measure but the lack of reliable data make this possibility not feasible at the moment.

58 The list includes a number of countries which are currently in a situation of high political and economic instability (i.e. Somalia and Cote d'Ivoire). Those were not excluded because, when the minimal conditions for the functioning of the economy will be met again, the best industrial policy would still be the one indicated in the proposed categorization.

59 Note that one may also consider demand related elements in the taxonomy. Among these particularly, relevance could be given to the Diaspora communities in prospective target markets which could surely be a lever that can be pursued to create market pull. This later factor has played a significant role in the growth, development and industrial development of China, India, Korea and even Israel. African Diaspora could indeed be a catalyst to industrial development.

Table 9: A categorization of African countries

		SMALL	LARGE
Resource Poor	Coastal	Benin	Cote d'Ivoire
		Cape Verde	Ghana
		Chad	Kenya
		Comoros	Mozambique
		Congo	Tanzania
		Djibouti	
		Eritrea	
		Gambia	
		Guinea-Bissau	
		Liberia	
		Madagascar	
		Namibia	
		Rwanda	
		Senegal	
		Seychelles	
		Somalia	
Togo			
Tunisia			
	Landlocked	Burkina Faso	Ethiopia
		Burundi	Uganda
		Central African Republic	
		Lesotho	
		Malawi	
		Mali	
		Niger	
		Swaziland	
		Zimbabwe	
		Resource Rich	
	Botswana		Cameroon
	Equatorial Guinea		Dem. Rep. of Congo
	Gabon		Egypt
	Guinea		Morocco
	Libya		Nigeria
	Mauritania		South Africa
	Mauritius		Sudan
	Sao Tome and Principe		
	Sierra Leone		
	Zambia		

Source: Author's elaboration. Population data are from US Census Bureau and refer to year 2009. Note: *Resource-rich (Resource poor)* if more (less) than 10% of the country's GDP comes from the primary commodity value added. *Large (Small)* if population is larger (smaller) than the mean population of African countries.

The next step would be to outline which is the industrial policy that best fits each category in Table 9. This will form the basis for identifying the country's best industrial policy mix. This could constitute a new direction of research. One possible approach to achieve this result is the methodology proposed based by Lo (2010) (see box 1).

Box 1: Methodology to identify the best policy mix for a country

1. Consider three discriminating Criteria for the Countries:

- (i) Resources (Rich (RR)/Poor (RP)),
- (ii) Population (Large (LP), Small (SP)),
- (iii) Geography (Coastal (C), Landlocked (L))

Then **eight possibilities (eight groups)** exist:

Group A: RR/LP/C; **Group B:** RR/LP/L; **Group C:** RR/SP/C; **Group D:** RR/SP/L;
Group E: RP/LP/C; **Group F:** RP/LP/L; **Group G:** RP/SP/C; **Group H:** RP/SP/L

- 2. Take a broad **sample of African, American, Asian and European Countries** that were industrially under-developed in 1960 and put each of them in the relevant group (among the 8 identified above) depending on its situation.
- 3. Compare the **industrial performances** of the countries in the sample in 1960, in 1980, in 1995, and in 2005. Show the wide and progressive variability of results in each group and for the whole sample. Identify the top and the low performers globally and in each group.
- 4. Design a Synthetic **Quality of Industrial Policy Index (QIPI)** aggregating Three Sub-indexes:
 - (i) Sub-Index 1: Quality of Sectoral and Competition Policies
 - (ii) Sub-Index 2: Quality of Education and Innovation Policies
 - (iii) Sub-Index 3: Quality of Trade Policies

For each Sub-Index, appropriate variables will be identified. The weight of the variables will vary among the groups, some of them being critical or very important for the Group due to the conditions it faces (eg.: Trans-borders roads or rail facilities for landlocked countries).

- 5. Give a **Score** to each country for the variables, sub-indexes and for the QIPI, using Data Analysis techniques (Multiple Factor Analysis): in 1980; 1995 and 2005. Verify that there is continuous **correlation** between scores for QIPI and industrial performances of the countries.
- 6. Have a **ranking of the countries** in the sample and identify which variables are the most important in each group to increase its QIPI (discriminating variables).
- 7. Draw **conclusions and lessons** for African Countries, depending on the Group where they are.

Source: Lo (2010)

Each country's characteristic (endowment, geographical location, population) indentified in Table 9 is relevant to industrial policy. For instance, the population level not only influences competition polices but is also relevant for education and trade policies. A small country needs to trade more because it is not efficient to produce domestically for a very small internal market.

The first dimension is *Endowments* which is related to sectoral policies. Resource-rich economies should devise sectoral policies aimed at favoring their resource sectors. There are different possibilities in this sense (see for instance, Pietrobelli and Rabellotti, 2006) which range from cluster-based initiatives to credit facilitation. One of the main objectives of these policies should be the creation of the financial condition for the development of other sectors. Indeed, a full set of industrial policies could be implemented using the resources coming from the natural resource sector.

The second dimension is *Geographical location* which is related to trade policies. Given their disadvantaged location, landlocked countries should push for increasing regional trade integration, because they are the ones more likely to gain most from it. At the same time, they should devise policies to foster infrastructure investment and all the set of incentives to attract foreign firms and facilitate domestic export (i.e. through export promotion agencies). Given that they are among the poorest economies in the continent, they most likely would need external technical and economic aid. Coastal countries enjoy a better geographical position in terms of trade opportunities. Given their advantage in terms of transportation cost, their process of trade liberalization could be pursued with some more flexibility, leaving more policy space to governments in determining trade relations. For these countries, policies aimed at creating and improving physical and immaterial infrastructure that support export would be less expensive, most effective and thus more rewarding.

The third dimension is *Population level* which is related to competition policies. Only countries characterized by a large population could consider the possibility of reducing domestic firm competition with the objective of creating the opportunities to exploit economies of scale and prepare them for foreign competition. In other words, a large market is the necessary condition for implementing a controlled creation of economic rent in the domestic market as was done in the NICs (see Di Maio, 2009). As can be understood, the necessary condition is that the domestic market is sufficiently large. But it also requires a strong monitoring capacity by the government. In the case of small countries, the domestic market cannot be the main objective of domestic firms and that access to foreign markets becomes the priority.

The main advantage of this proposal is that it directly links the economic characteristics of the country to industrial policy⁶⁰. Based on the success-stories of countries facing similar natural conditions, it shows a simple way to determine how to combine government intervention in the different domains (education, trade, technology, etc.) with a coherent and successful industrial policy.

⁶⁰ Some important clarification and warning are in order. The objective of the typology is not to rank countries. Indeed, this would be impossible since the combination of the characteristics does not in itself provide an obvious combination of best country conditions. For instance, the fact that a country is resource poor does not necessarily suggest a negative situation. Consider, for example, the case of Tunisia. The fact that in the taxonomy it results to be a resource-poor country is merely due to the fact that in this country the primary sector is small and industry and tourism represent a larger share of GDP. Thus the table should be carefully read and interpreted.

Conclusion

Industrial policy considerations have recently become very topical in the international development agenda. African countries need to re-evaluate their industrial policy since it holds the key to the structural transformation of their economies. The fact that the discussion is again about which are the best industrial policies to be implemented by governments rather than if governments should intervene or not, creates the conditions for improvement of economic management in African countries.

The aim of this Report is to contribute to this discussion and to provide a tool able to inform policy makers and industrialization stakeholders about what should and can be done on the continent to buttress current industrialization initiatives and plans.

A number of important issues have been analysed in this Report. The starting point has been a careful description of the current situation of industry in the continent. The analysis has shown the numerous weakness of a small manufacturing base and an increasing role of primary production and export. This poses a number of doubts about future growth prospects for many African countries. The current characteristics of the economic structure of African countries are, among other elements, the result of the industrial policies implemented since independence. To evaluate their impact, the paper has provided a comprehensive overview of industrial policy in Africa - in terms of history, current characteristics and perspectives. In particular, the similarities and differences with other emerging regions concerning both the Developmental State period and the following structural reform era have been discussed. The central role of the external factor in determining the difficulties of the Developmental State and the consequent advent of the SAPs were emphasised. It has also been argued that the poor performance of the SAPs is one of the reasons for the renewed interest in industrial policy in the continent.

The current situation is also characterized by the increasing importance of world trade and by changing rules of the game. To evaluate how well African countries are facing the new challenges, a survey of the industrial policy instruments adopted by African governments has been provided. The result shows that governments are employing a vast range of policies, from sectoral policies to education and trade policies. Moreover, new instruments are increasingly being employed to foster industrialization, namely policies to support industrial clusters and firms' upgrade along the agro-industry value chains. To complement the description of the current situation with some policy recommendation, the paper suggests a way to identify the best industrial policy mix for each African country.

The first step is the definition of a new taxonomy of African countries based on their main economic characteristics. Based on this, the best industrial policy mix for adoption is proposed for each group of countries. It is argued that trade, education and innovation, sectoral and competition policies should be used in different combinations depending on the characteristics of the specific country. In this way, the peculiarity of each country is taken into consideration and the objective of each policy is clearly targeted.

The main contribution of the present report is a novel taxonomy of industrial policy for African countries. The aim is to provide a tool able to indicate which industrial policies govern-

ments should implement given the country's characteristics but also able to give indication about which policy should be followed in a dynamic perspective. Although in need of refinement, this taxonomy is arguably a useful instrument in helping to choose the best industrial policy mix in each African country.

The Report has suggested some possible elements of such a typology. Yet, more work would need to be done to identify other possible characteristics to be included in the typology and to determine how they could be related to the optimal industrial policy mix. This indicates the need to construct a database containing information and data related to industry in Africa in order to situate this analysis on a solid empirical base. The database would ideally also contain the detailed description of the industrial policies currently implemented in Africa. The design of effective industrial policies needs a strong empirical foundation.

The proposed taxonomy clearly needs to be linked to micro-level studies and analysis, possibly at the level of government decision making. The topic for further research here is how to build a bridge between the different levels of analysis. Since both micro-and macro level perspectives are relevant to industrialization, the issue is how to consider them together. Another important aspect that needs to be considered in the analysis is how industrial policies are to be related to other policies which affect economic growth, namely macroeconomic policies such as monetary or fiscal policies. Since between these policies there are feedback mechanisms and each one imposes constraints on the other, their simultaneous consideration is fundamental.

This paper has considered several important elements relating to discussions about industrial policy in Africa. One of its main conclusions is that African economies need to refocus on industrial policy in order to induce structural transformation which is the key to economic growth. Among the elements for a successful industrial policy are the understanding of the political equilibrium of the society, of the actors and their interests and the political institutions. Once the best industrial policy mix for a given country has been identified, the next step is to understand how to make its implementation possible. In other words, normative industrial policy always requires to be complemented by positive industrial policy. Moreover, it has to be acknowledged that industrial policy has to take place in a complex environment where other economic variables have to be taken into consideration. Industrial policy success also depends on the level and dynamism of domestic savings and investment, on the strength of the technology accumulation process and on the ability of the government to satisfy the budget constraint. These are all key drivers of a country's ability to pursue industrialization. But their consideration and interaction with the domain of industrial policy need further research. Finally, it has been argued that once the need for industrial policy is acknowledged and the political, institutional and economic context is correctly considered, the difficult task of finding the best policy mix begins. This paper aims to be a contribution to this valuable effort.

References

- Acemoglu, D., Johnson, S. and Robinson, J.A. (2003). An African Success Story: Botswana, in Rodrik, D. (ed.), *In Search of Prosperity: Analytical Narratives on Economic Growth*. Princeton, N.J.: Princeton University Press.
- Akoten, J.E. and Otsuka, K. (2007). From Tailors to Mini-Manufacturers: The Role of Traders in the Performance of Garment Enterprises in Kenya. *Journal of African Economies*, vol. (4):564-595.
- Alcorta, L. and Peres, W., (1998). Innovation system and Technological Specialization in Latin America and the Caribbean. *Research Policy*, vol. 26, 857 - 881
- Amsden, A. (1989). *Asia's next giant: South Korea and late industrialization*. New York and Oxford: Oxford University Press
- Amsden, A. (2000). Industrializing under the new WTO law. Mimeo, UNCTAD
- Amsden, A. (2001). *The Rise of the Rest. Challenges to the West from Late-Industrializing Economies*. Oxford University Press
- Arrighi, G. (2002). The African crisis: world systemic and regional aspects. *New Left Review*, 15: 5–36, May-June.
- Aryeetey, E. and Nissanke, M. (2003) *Comparative Development Experiences of Sub-Saharan Africa and East Asia: An Institutional Approach*. UK: Ashgate.
- Baliamoune-Lutz, M. (2009). Tunisia's development experience: a success story? WIDER Research Paper 2009/32. Helsinki: UNU-WIDER.
- Barnes, J., Kaplisky, R. and Mike Morris, M. (2003). Industrial Policy in Developing Economies: Developing Comparative Advantage in the South African Automobile Sector. IDS Working Paper
- Braga de Macedo, J. and Luís Brites Pereira, L., (2009). Cape Verde and Mozambique are clear as development successes in Sub-Saharan Africa. Paper presented at the NBER Project on African Successes Conference, December 11-12
- Chang, H.J. (2004). Institutional Foundation for effective design and implementation of trade and industrial policies in least developed countries, in Soludo et al. (2004) (eds.) *The Politics of Trade and Industrial Policy in Africa: Forced Consensus?* Africa World Press/IDRC
- Chang, H.J. (2009). Economic History of the Developed World: Lessons for Africa. Lecture delivered in the Eminent Speakers Program of the African Development Bank, February, 26 2009

- Cimoli, M., Dosi G. and Stiglitz, J.E. (Eds.), *Industrial Policy and Development: The Political Economy of Capabilities Accumulation*. Oxford University Press
- DFID (2002), *Better Livelihoods for Poor People: The Role of Agriculture*. London, DFID.
- Di Maio, M. (2009). Industrial Policies in Developing Countries: History and Perspectives, in Cimoli, M., Dosi G. and Stiglitz, J.E. (Eds.), *Industrial Policy and Development: The Political Economy of Capabilities Accumulation*. Oxford University Press, pp.107-143
- Diao, X., Hazell, P., Resnick, P., D. and Thurlow, J. (2008). The Role of Agriculture in Development, Implications for Sub-Saharan Africa. International Food Policy Research Institute Research Report 153.
- Diyamett, B.D. (2009). Building systems of innovation in an African setting: The Cluster Initiative Development Approach. *African Journal of Science Technology, Innovation and Development*, vol.1 (1), 173-195
- Djeflat, A. (2004). Local Innovation Dynamics in Maghreb Countries: Harnessing Local Knowledge in the Wake of New Institutional Reforms, 2nd. Globelics Conference, Beijing, China.
- Dolan, C. and Humphrey, J. (2001). Governance and trade in fresh vegetables: The impact of United Kingdom supermarkets on the African horticultural industry. *Journal of Development Studies*, 37 (2): 147–76.
- Dosi, G., Freeman, C. and Fabiani, S., (1994). The process of economic development. Introducing some stylized facts and theories on technologies, firms and institutions. *Industrial and Corporate Change*, vol. 3 (1), 1 - 45
- Elbadawi, I. A., Ghura, D. and Uwujaren, G. (1992). Why structural adjustment has not succeeded in Sub-Saharan Africa. WPS 1000 (Washington, DC: World Bank)
- Elhiraika, A.B. (2008). Promoting manufacturing to accelerate economic growth and reduce volatility in Africa. Paper presented at the African Economic Conference: Globalization, Institutions and Economic Development of Africa, 12-14 November 2008, Tunis, Tunisia.
- Enos, J. L. (1995). *In pursuit of science and technology in Sub-Saharan Africa*. UNU/INTECH Studies in New Technology and Development.
- Erdle, S. (2009). The case of Tunisia. Paper presented at the DIE International Conference, Industrial Policy in Developing Countries, DIE Bonn, 18 – 19 November 2009
- Fosu, A. K. (2009). Country Role Models for Development Success: The Ghana Case'. WIDER Research Paper 2009/42. Helsinki: UNU-WIDER.

- Frankel, J. (2009). Mauritius: African success story. Paper presented at the NBER Project on African Successes Conference, December 11-12
- Gachino, G. (2009). Industrial policy, institutions and foreign direct investment: The Kenyan context. *African Journal of Marketing Management*, vol. 1(6) pp. 140-160
- Galal, A. (2008). Comparative assessment of industrial policy in selected MENA countries (2008). *Industrial policy in the Middle East and North Africa: rethinking the role of the State*, Galal, A. (Ed.), American University in Cairo Press, pp. 1-10
- Galal, Ahmed and Nihal El-Megharbel, N. (2008). Do Governments Pick Winners or Losers? An Assessment of Industrial Policy in Egypt, in *Industrial policy in the Middle East and North Africa: rethinking the role of the State*, Galal, A. (Ed.), American University in Cairo Press, pp. 11-34
- Gibbon, P. (2001). Upgrading primary commodities: A global commodity chain perspective. *World Development*, vol. 29 (2): 345–363.
- Gibbon, P. and Ponte, S. (2005). *Trading Down: Africa, Value Chains and the Global Economy*. Temple University Press, Philadelphia.
- Goldstein, A., Pinaud, N., Reisen, H. and McCormick, D. (2009). The Asian Drivers and Africa: Learning from Case Studies. *World Economy*. Vol. 32 (11), 1538-1542
- Grimm, S. and Brüntrup, M. (2006). EU Economic Partnership Agreements (EPAs) with ACP Regions, in Klingebiel, S. (ed.), *Africa Agenda for 2007: Suggestions for the German G8 and EU Council Presidencies*. German Development Institute Working Paper No.4, Bonn
- Hammouda, H.B., Karingi, S.N., Njuguna, A.E. and Sadni-Jallab, M. (2006). Diversification: towards a new paradigm for Africa's development. ATPC Work in Progress, No. 35
- Haque, I. (2007). Rethinking Industrial Policy. *UNCTAD Working Paper*, No.183
- Harabi, N. (2008). An Empirical Analysis of Industrial Policy in Morocco, in *Industrial policy in the Middle East and North Africa: rethinking the role of the State*, Galal, A. (Ed.), American University in Cairo Press, pp. 51-80
- Hausmann, R., Hwang, J. and Rodrik, D. (2007). What you export matters. *Journal of Economic Growth*. 12 (1): 1–25.
- Hausmann, R., Rodrik, D. (2003). Economic Development as Self-Discovery. *Journal of Development Economics*, 72(2): 603-633.
- Hausmann, R., Rodrik, D. and Sabel, C. F: (2008). Reconfiguring industrial policy: A framework with an application to South Africa. Center for International Development and HKS Faculty Research Working Paper Series 168
- Helleiner, G. K., (1994). From adjustment to development in Sub-Saharan Africa. *UNCTAD Review* pp. 143-154.

- Humphrey J. and Memedovic O., (2006). Global Value Chains in the Agrifood Sector. UNIDO, Vienna: United Nations.
- Humphrey, J., McCulloch, N. and Ota, M. (2004). The impact of European market changes on employment in the Kenyan horticulture sector. *Journal of International Development*, Vol. 16 No 1: 63-80.
- International Trade Center (2001). Kenya's Export strategy. Paper presented at the regional Executive Forum of the ITC in Nairobi, Kenya
- Jalilian, H., Michael A. Tribe, M.A. and Weiss, J. (2000). *Industrial Development and Policy in Africa*. Edward Elgar, Cheltenham, UK.
- Kaplinsky, R. and Farooki, M., (2010). What are the implications for global value chains when the market shifts from the north to the south? World Bank Policy Research Working Paper Series, No. 5205.
- Katz, J. M. and Kosacoff, B., (1998). Aprendizaje tecnol'ogico, desarrollo institucional y la microeconomia de la sustitucion de importaciones. *Desarrollo Economico*, vol. 37, 483- 503
- Kim, L., (1999). *Management of Technology in Developing Countries: Lessons for Africa*. Mimeo, the Economic Commission for Africa, Addis Ababa, Ethiopia.
- Krueger, A. O., (1990). Government failures in economic development. *Journal Economic Perspective*, vol. 4 (3), 9-23
- Lall, S. (1995). Structural adjustment and African industry. *World Development*, vol. 23 (12), pp. 2019-2031
- Lall, S. (2000). Selective Industrial and Trade Policies in Developing Countries: Theoretical and Empirical Issues. *QEH Working Paper Series*, 48
- Lall, S. (2003). Reinventing industrial strategy: The role of government policy in building industrial competitiveness. Mimeo
- Lall, S. and Pietrobelli, C. (2002). *Failing to compete. Technology development and technology systems in Africa*. Edward Elgar
- Lall, S. and Pietrobelli, C. (2005). National Technology Systems in Sub-Saharan Africa", *International Journal of Technology and Globalization*. Vol.1 No.3-4.
- Lall, S. and Wignaraja, G., (1998). Mauritius, dynamizing export competitiveness. Economic Paper N.33, Commonwealth Secretariat
- Lall, S., Weiss, J. and Zhang, J. (2006). The "sophistication" of exports: A new trade measure. *World Development*, vol. 34 (2), pp. 222-237
- Lo, M. (2010). Proposal for the work on "typology of African countries and industrial policies, presented during the Joint ECA/AUC/UNIDO Experts Group Meeting on the Imple-

mentation Strategy for the Accelerated Industrial Development of Africa, Addis Ababa, 4-7 October 2010

- López-Cálix, J.R., Walkenhorst, P. and Ndiame Diop, N. (Eds.) (2010). Trade Competitiveness of the Middle East and North Africa: Policies for Export Diversification. The International Bank for Reconstruction and Development / The World
- Lorentzen, J., Robbins, G., Barnes, J. (2007). The Durban auto cluster: Global competition, collective efficiency and local development, in Oyelaran-Oyeyinka, B. and McCormick, D. (eds.), *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*, Chapter 9.
- Lundahl, M., and L. Petersson (2009). 'Post-apartheid South Africa: an Economic Success Story'. WIDER Research Paper 2009/56. Helsinki: UNU-WIDER.
- Marti, D.F. and Ssenkubuge, I. (2009). Industrialization and industrial policy in Africa: is it a policy priority? South Centre Research Papers no.20.
- Martin, W. (2001). Trade Policies, Developing Countries, and Globalization. World Bank Research Group Working Paper
- McCormick, D. (1999). African Enterprise Clusters and Industrialization: Theory and Reality, *World Development*, vol. 27, No. 9, pp. 1531-1551
- McCormick, D. and Kinyanjui, M. N. (2007) Industrializing Kenya: Building the productive capacity of micro and small enterprise clusters, in Oyelaran-Oyeyinka, B. and McCormick, D. (eds.), *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*, pp.63-80
- Mkandawire, T. (2001). Thinking about developmental state in Africa. *Cambridge Journal of Economics*, 25 (3): 289–313, May.
- Morris, M. and Robbins, G. (2007) Government support and enabling environment for inter-firm cluster cooperation: Policy lessons from South Africa, in Oyelaran-Oyeyinka, B. and McCormick, D. (eds.), *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*, pp. 243-262
- Mosley, P. and Weeks, J. (1994). Adjustment in Africa. *Development Policy Review*, Vol. 12, No. 3. pp. 319-327.
- Muchie, M., Gammeltoft, P. and Lundvall, B.A. (2004) (Eds.). *Putting Africa First: the making of African Innovation Systems*. Aalborg University Press, Denmark
- Mwamila, B.L.M., Trojer, L., Diyamett, B. and Temu, A.K. (2004) (Eds.). *Innovation systems and innovative clusters in Africa*. Proceeding of the Regional Conference, February 18-20, Bagamoyo, Tanzania

- Mwamila, B.L.M., and AK Temu, A.K. (2006). *Academia-Industry-Government Relationship: Experience of the College of Engineering and Technology, University of Dar es Salaam Tanzania*. Mimeo.
- Mytelka, L.K. (2007) From clusters to innovation systems in traditional Industries, in Oyeleran-Oyeyinka, B. and McCormick, D. (eds.), *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*, pp. 39-62
- Nabli, M.K., Keller, J. Nassif, C. and Silva-Jáuregui, C. (2008). The political economy of industrial policy in the Middle East and North Africa, in *Industrial policy in the Middle East and North Africa: rethinking the role of the State*, Galal, A. (Ed.), American University in Cairo Press,. pp. 109-136
- Nadvi K., Schmitz H. (Eds.), (1999). Industrial Clusters in Developing Countries. *World Development*, Vol. 27, No.9.
- Ndulu, B., O'Connell, S., Azam, J. P., Bates, R., Fosu, A.K., Gunning, J.W. and Njinkeu, D. (Eds.) (2008), *The Political Economy of Economic Growth in Africa, 1960-2000* Volume 2, Cambridge University Press
- Noland, M. and Pack, H., (2002). Industrial Policies and Growth: Lessons from the International Experience, in *Economic Growth: Sources, Trends and Cycles*, Loayza, N. and Soto, R. (Eds.). Central Bank of Chile, Santiago de Chile, 251-307
- Nziramasanga, M. (1995). *Formulating industrial policy in Africa: 2000 and beyond*. UNIDO
- Ogbu, O.M., Oyeyinka, B., and Mlawa, H.M. (Eds.) (1995). Introduction, in *Technology Policy and Practise in Africa*. International Development Research Centre Ottawa, ON, Canada
- Oussou, K., Pegatienan, J. and Ngaladjo, B. (2004). Côte D'Ivoire: Policy Making and Implementation: Examples of Selective Trade and Strategic Industrial Policies, In Soludo et al. (eds.), *The Politics of Trade and Industrial Policy in Africa: Forced Consensus?* Africa World Press/IDRC, pp- 315-340
- Oyeleran-Oyeyinka, B. (2004a). Determinants of inter-organizational collaboration in Africa's system of innovation. Proceedings of the 2nd Globelics Conference, Beijing, China, October 16-20
- Oyeleran-Oyeyinka, B. (2004b). Learning, knowledge and skills: implications for firm-level performance in African industry. *International journal of technology management & sustainable development*, v. 3, no. 2, pp.91-113
- Oyeleran-Oyeyinka, B. (2006). *Learning to compete in African industry: institutions and technology in development*. Ashgate, UK
- Oyeleran-Oyeyinka, B. and Lal, K. (2006). Institutional Support for Collective Learning: Cluster Development in Kenya and Ghana. *African Development Review*, Vol.18 (2), pp258-278

- Oyelaran-Oyeyinka, B. and McCormick, D. (Eds.). (2007) *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*. United Nations University Press
- Oyelaran-Oyeyinka, B., Kaushalesh Lal, K. and Nyaki Adeya, C. (2007). Institutional support for collective ICT learning: Cluster development in Kenya and Ghana, in Oyelaran-Oyeyinka, B. and McCormick, D. (eds.), *Industrial Clusters and Innovation Systems in Africa. Institutions, markets and policy*, pp. 269-293
- Pack, H. and Saggi, K. (2001). The case for industrial policy: a critical survey. *The World Bank Research Observer*, vol. 21 (2), pp 267-297
- Pietrobelli, C. (2008). Global value chains in the least developed countries of the world: threats and opportunities for local. Producers. *International Journal of Technological Learning, Innovation and Development*, Vol. 1, No. 4, 2008
- Pietrobelli, C. and Rabellotti, R. (2006). Upgrading in Clusters and Value Chains in Latin America. The Role of Policies. Inter-American Development Bank, Washington, D.C.
- Reinert, E., (1999), The role of the state in economic growth. *Journal of Economic Studies*, vol. 26 (4/5), 268 - 326
- Riddell, R.C. (Ed.) (1990). *Manufacturing Africa: performance and prospects of seven countries in Sub-Saharan Africa*. ODI and James Currey; London
- Robinson, J. A. (2009a). Industrial Policy and Development: A Political Economy Perspective. Paper presented at the World Bank ABCDE Conference in Seoul, June 22-24.
- Robinson, J. A. (2009b). Botswana as a Role Model for Country Success. WIDER Research Paper 2009/40. Helsinki: UNU-WIDER.
- Rodrik, D. (1999) Trade Policy and Economic Performance in Sub-Saharan Africa. *NBER Working Paper No. 6562*
- Rodrik, D. (2001). *The Global Governance of Trade as if Development Really Mattered*. Background paper commissioned by UNDP as part of the Trade and Sustainable Human Development Project, October.
- Rodrik, D., (2004). Industrial policy for the twenty-first century. Mimeo, UNIDO
- Shakya, M. (2010). The State's Role in Building A Critical Mass for Competitiveness in Apparel Exports. Paper prepared for the World Bank Yes Africa Can Project.
- Sindzingre, A.N. (2004). Bringing the developmental state back in: contrasting development trajectories in sub-Saharan Africa and East Asia. Paper presented at the 16th Annual meeting of the Society for the Advancement of Socio-Economics (SASE), Washington DC: George Washington University.
- Soludo, C., Ogbu, O. and Chang, H.J (Eds.) (2004). *The Politics of Trade and Industrial Policy in Africa: Forced Consensus?* Africa World Press/IDRC

- Sonobe, T., Akoten, J.E. and Otsuka, K. (2009). An Exploration into the Successful Development of the Leather-Shoe Industry in Ethiopia. *Review of Development Economics*, vol.13 (4), pp.719-736
- Stallings, B. and Peres, W. (2000), *Growth, Employment, and Equity: The Impact of the Economic Reforms in Latin America and the Caribbean*. Brookings/ECLAC, New York,
- Stein, H. (1992). Deindustrialization, adjustment, the World Bank and the IMF in Africa. *World Development*, Vol. 20, No. 1, pp. 83-95.
- Stein, H. (1994). The World Bank and the application of Asian industrial policy to Africa: Theoretical considerations. *Journal of International Development*, Vol. 5, No. 1, pp. 1-19.
- Stein, H. (Ed.) (1996). *Asian Industrialization and Africa*. Palgrave Macmillan
- Stiglitz, J. (2003). Whither reform? Towards a new agenda for Latin America. *CEPAL Review*, vol. 80, 7-37
- Subramanian, A. (2009). The Mauritian Success Story and its Lessons. WIDER Research Paper 2009/36. Helsinki: UNU-WIDER.
- Thorbecke, E. (2009). The Anatomy of Growth and Development in Sub Saharan Africa. Paper Prepared for the African Economic Research Consortium (AERC) Collaborative Project on Growth and Poverty to be presented at the Conference in Accra, April 20-22, 2009.
- UNCTAD (2006). *The Least Developed Countries Report 2006: Developing Productive Capacities*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNCTAD (2007). *Economic Development in Africa. Reclaiming Policy Space: Domestic Resource Mobilization and Developmental States*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNCTAD (2008a). *Handbook of Trade Statistics*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNCTAD (2008b). *Economic Development in Africa Export Performance Following Trade Liberalization: Some Patterns and Policy Perspectives*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNCTAD (2009). *The Least Developed Countries Report 2009. The State and Development Governance*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNCTAD (2010). *Economic Development in Africa. South-South Cooperation: Africa and the New Forms of Development Partnership*. United Nations Conference on Trade and Development, Geneva, Switzerland
- UNECA (2004). *Assessing regional integration in Africa*. United Nations Economic Commission for Africa, Addis Ababa, Ethiopia

- UNECA (2007). *Economic Report on Africa 2007: Accelerating Africa's Development through Diversification*. Addis Ababa, Ethiopia: UNECA.
- UNECA (2009). Expert Group Meeting on Promoting Agro-Industry and Agribusiness Development in African Countries with Emphasis on Promoting Regional Value Chain Approach, Addis Ababa, Ethiopia 22-24 July 2009
- UNECA (2010a). *Economic Report on Africa 2010. Promoting high-level sustainable growth to reduce unemployment in Africa*. United Nations Economic Commission for Africa, Addis Ababa, Ethiopia
- UNECA (2010b). *Assessing Regional Integration in Africa IV. Enhancing Intra-African Trade*. United Nations Economic Commission for Africa, Addis Ababa, Ethiopia
- UNIDO (2007). *Statistical Yearbook*. United Nations Industrial Development Organization, Vienna, Austria
- UNIDO (2008). *Science, Technology and Innovation Policy (STIP) Review of Angola*. United Nations Industrial Development Organization, Vienna, Austria
- UNIDO (2009). *Industrial Development Report. Breaking In and Moving Up: New Industrial Challenges for the Bottom Billion and the Middle-Income Countries*. United Nations Industrial Development Organization, Vienna, Austria
- UNU-INTECH (2004). Design a policy relevant innovation survey for NEPAD. Maastricht, UNU-INTECH
- von Drachenfels, C. and Altenburg, T. (2006). Strengthening the dynamism of private-sector growth in sub-Saharan Africa, in Klingebiel, S. (ed.), *Africa Agenda for 2007. Suggestions for the German G8 and EU Council Presidencies*. German Development Institute Working Paper no.4, Bonn
- Wade, R. (1990). *Governing the market. Economic theory and industrialization*. Princeton University Press.
- Wilkinson, J. and Rocha, R. (2009). Agro-industry trends, patterns and development impact, in Da Silva, C., Baker, D., Sheperd, A.W., Jenane, C. and Miranda-da-Cruz, S, *Agribusiness for development*. FAO and UNIDO
- Wood, A. and Mayer, J. (2001). Africa's Export Structure in a Comparative Perspective. *Cambridge Journal of Economics*, vol. 25(3), pages 369-94
- Wood, E. and Kaplan, D. (2005). Innovation and performance improvement in the South African wine industry. *International Journal of Technology and Globalization*, Vol.3-4, p.381 – 399
- World Bank (1993). *The East Asian Miracle*. Public Policy and Economic Development. The World Bank, Washington, D.C.

World Bank (1994). *Adjustment in Africa: Reforms, Results, and the Road Ahead*. Oxford University Press.

World Bank (2000). *Trade Blocs*. Oxford University Press.

World Bank (2008). *World Development Report 2008*. The World Bank. Washington D.C:

Zeng, D.Z. (Ed.) (2008). *Knowledge, Technology, and Cluster-Based Growth in Africa*. IBRD and World Bank.

