



Developing upstream linkages in industrial commodities in Africa¹

Resource-based industries can be better harnessed for economic transformation in Africa

Building upstream linkages in industrial commodities presents a real opportunity for African countries to utilize primary commodity endowments for economic transformation. The impressive growth performance in Africa for over a decade has not translated into economic diversification, commensurate jobs or faster social development, and most economies are still dependent on commodity production and exports, with limited value addition and forward and backward linkages to the rest of the economy. Yet there is immense potential for the continent to both develop manufactured inputs for its primary commodity production and to add value to its natural resources, highlighting the role that resource-based manufacturing can and must play in a realizable industrialization strategy for Africa. Industrialization is vital for sustained growth and poverty reduction; industry – and manufacturing in particular – has traditionally been a source of substantial employment generation in developed and developing countries alike. Furthermore, it is now recognized that market forces alone will neither induce adequate economic diversification nor sustain increases in incomes, so concerted State efforts are needed to spur such value addition and industrialization.²

This topic is addressed by the Economic Report on Africa 2013, under the theme “Making the most of Africa’s commodities: industrializing for growth, jobs and economic transformation”, which notes that African countries have a real opportunity, individually and collectively, to promote economic transformation and to address poverty, inequality and youth unemployment. Drawing on nine country case studies, the 2013 Report argues that

commodity-based value addition can play a significant transformative role, given appropriate policies, to address challenges faced by firms in a variety of sectors. Key policy imperatives for shifting to higher value-added activities within global value chains and developing linkages in soft (agricultural) and hard (industrial) commodities are highlighted by commodity type.

This policy brief highlights select findings on upstream linkages in hard commodities in four countries and underscores opportunities for African countries to add value to their commodities and industrialize. A common message emanating from those case studies is that State intervention is needed to boost the capacity of domestic suppliers and to remove the binding constraints currently preventing local procurement and upstream linkages in industrial commodities in Africa.

Developing upstream linkages for Zambian copper mining

Copper has been a central element of the Zambian economy since the 1930s. In 2011, this subsector generated about 80 per cent of the country’s export earnings through \$6.8 billion of copper exports and accounted for 10 per cent of formal employment. However, increasing production following privatization from the late 1990s and rising global prices and demand for copper have not been matched by increases in employment.

Linking with other industrial activities has been difficult for the copper subsector for a number of reasons. Regarding upstream linkages, poor infrastructure networks make it difficult for local industries to contribute to copper production and low levels of industrialization, technical skills shortages, insufficient international management experience and financing constraints are limitations

¹ Research on the basis of the Economic Report on Africa 2013 on the theme “Making the most of Africa’s commodities: industrializing for growth, jobs and economic transformation” of the Economic Commission for Africa and the African Union Commission.

² Economic Report on Africa 2011 on the theme “Governing development in Africa – the role of the State in economic transformation” of the Economic Commission for Africa and the African Union Commission.

on the domestic sourcing of supplies for copper mining. With regard to downstream linkages, mining companies have made it clear that their expertise is in mining, not fabrication, although current investments are aiming to increase the capacity to process domestically.

A survey of the two largest copper producers in Zambia, both headquartered abroad but together accounting for more than half of total copper output, found that, while local procurement appears significant (with local operational spending at over 80 per cent of total spending), such spending is primarily through importing agents or locally registered suppliers, resulting in limited sourcing of locally manufactured goods and little domestic capacity development.

Given the constraints facing local upstream suppliers, better implementation and adherence to existing local content policies is necessary, via improved knowledge sharing and publicity of local content agreements, more involvement of the private sector in upstream linkages and improved capacity to assess supply chains and design support programmes. The capital intensive nature of copper mining means that upstream linkages and spillover effects for suppliers are vital for the job creation goals of value addition and transformation.

Local content development for gold mining in Ghana

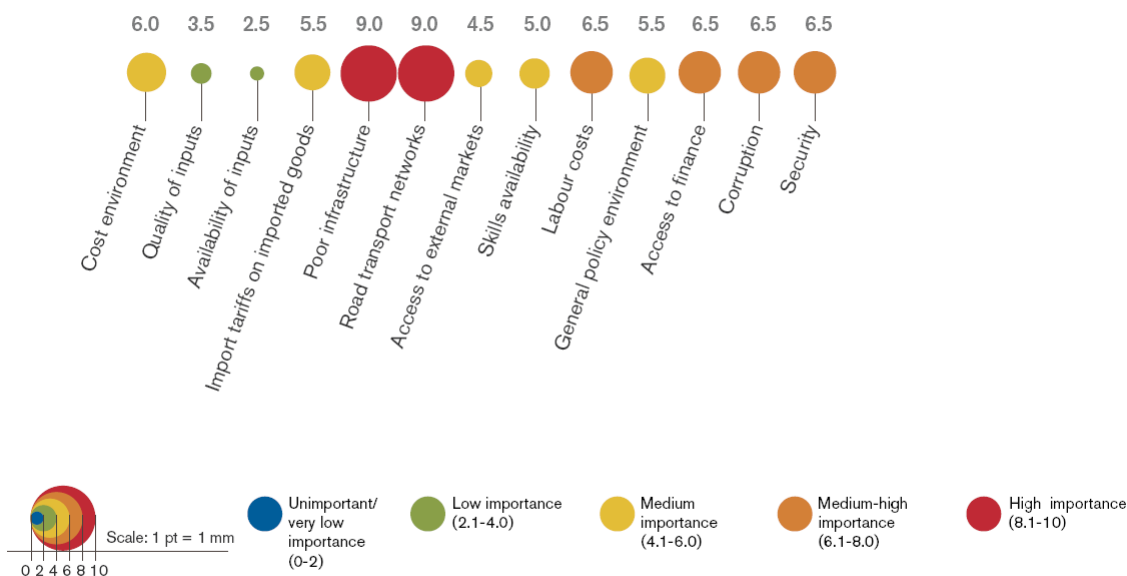
Ghana has been growing as a significant gold producer and is now the second largest producer in Africa,

after South Africa. This subsector was the Government's largest source of corporate tax revenue in 2010 and accounted for \$5 billion in exports in 2011, or 40 per cent of merchandise exports. Estimates from the Ghana Mineral Commission indicate an 85 per cent increase in gold production between 2004 and 2011. Large scale gold mining is dominated by foreign firms, while most small scale mining operations are Ghanaian. Mining policy must balance the growing needs of both types of firms and address the increasing scale of illegal mining activities.

A survey of three large foreign gold mining firms reveals similar results on local procurement as in the case of Zambia: between 67 per cent and 79 per cent of the firms' expenditures are local, but this may be to other foreign owned firms and is not in itself indicative of the building of local supply networks. When asked about the decision-making process in procurement, the firms responded that quality products are most vital, but that local suppliers underperform on quality, have weaker production flexibility and do less well in terms of learning and innovation. A number of issues adversely affect domestic linkage development (see Figure 1). Infrastructure and financing bottlenecks further hinder domestic suppliers.

The importance of developing linkages between mining and other sectors of the economy, so as to foster more inclusive growth, has been taken into account in a more comprehensive framework document for mining, which also addresses the pressing issues of creating skilled employment and encouraging upstream and downstream linkages. To address domestic supplier capacity gaps, exchanges are taking place between mineral firms and suppliers to help build local capabilities.

Figure 1: Rating of factors affecting linkage development in the Ghanaian gold industry



Source: Interviews with three firms, 2012.

Developing the domestic oil value chain in Nigeria

The difficulties encountered by Nigeria in linking the country’s vast oil endowments to other economic activities and moving up the global oil-based value chain are well documented. Nigeria is the world’s tenth largest oil producer. Over the period 1980–2010, oil contributed an average of 76 per cent of federal government revenues and 97 per cent of exports. Yet the knowledge and capital intensive upstream activities in oil prospecting and exploration, and manufactured input supply and extraction, are largely handled by multinational firms.

Oil companies that do source a broad variety of goods and services locally focus on links in fabrication and construction, well construction and completion, and control systems and information and communications technology.³ Regarding petroleum-based manufacturing, the 2013 Report surveyed five downstream firms involved in diesel, kerosene, lubricants, motor oil and jet fuel production. Of those five, three were domestic and two were foreign. In identifying the most important aspects of procurement decisions, those firms identified trust, both in meeting contractual obligations and in suppliers’ abilities to deliver, as most important (see Figure 2). The firms further noted that local companies tend to underperform on many critical success factors. In recording their interactions and capacity-building with local suppliers, those firms noted that cooperation was closest in terms of information exchange, monitoring production efficiency, facilitating access to finance, improving technical capabilities and reducing delivery times.

Numerous training programmes have been established over the years between the Government, local

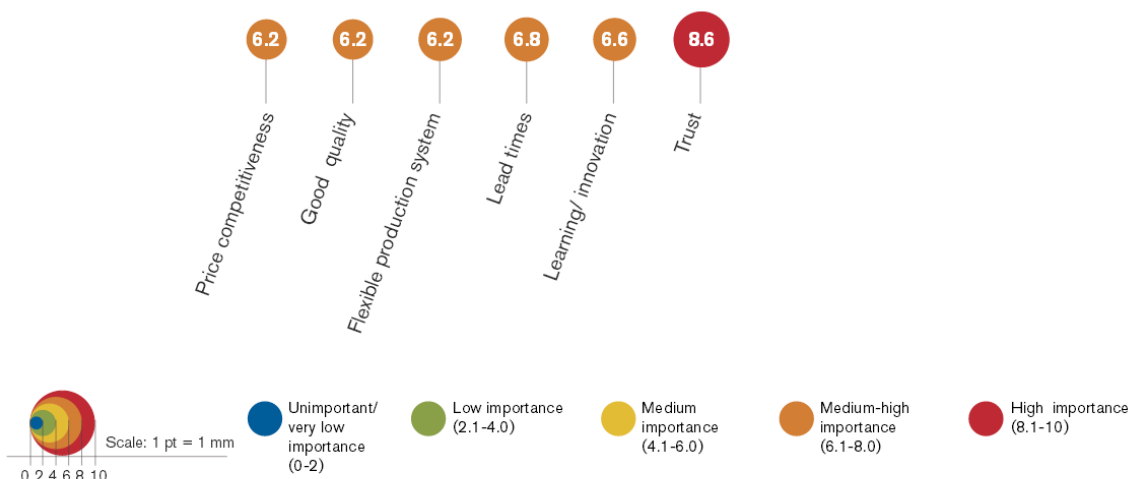
firms and oil companies to try to upgrade local skills and technology. A 2010 Nigerian content policy was enacted to promote the programmes and general local value addition and linkages with the economy at large. The policy includes a 70 per cent minimum local content target for all contracts with oil and gas companies operating in Nigeria. Minimal success has been recorded, owing to hindrances at the implementation level (ranging from insufficient supporting legislation to poor monitoring capabilities) and in terms of the capabilities of domestic firms to carry out upstream activities. Indeed, local content lags behind comparable developing country oil exporters and it is estimated that, by 2009, local content was around 40 per cent.⁴ Constraints in the areas of infrastructure, security, corruption and access to finance further hamper local supply-chain development. Responses from firms corroborate that well formulated policies on local content must be accompanied by political will to thoroughly implement and provide cross-sectoral complementary investments to ensure the realization of these domestic value-chain goals.

A summary of the findings on linkage development for hard commodities in Ghana, Nigeria and Zambia, including the most pressing issues to be addressed through policy intervention, can be found in Table 1.

Importance of South African manufactured mining inputs for the continent

In the case of South Africa, upstream linkages to mining have been well developed and serve not only the domestic market but offer inputs to mining across the continent and worldwide. South African mining supply

Figure 2: Processing and marketing firms’ views on critical success factors in the Nigerian oil industry



Source: Interviews with five downstream firms, 2012.

3 Oyejide, A.T., and Adeolu O. Adewuyi. “Enhancing linkages of oil and gas industry in the Nigerian economy”. MMCP Discussion Paper No. 8, March 2011.
 4 Ibid.

Table 1: Summary comparison: Nigeria, Zambia and Ghana

Nigeria (oil)	Zambia (copper)	Ghana (gold)
Deep linkages and upgrading	Broad but shallow linkages and no real upgrading	Growing linkages, but from a low basis
<ul style="list-style-type: none"> • Buyer cooperation • Local content policy • CSFs: trust, lead times • Constraints: poor infrastructure, safety, corruption 	<ul style="list-style-type: none"> • Buyer cooperation varies • Employment linkages are more important • CSFs: trust, lead times, price, consistency • Constraints: skills, finance, infrastructure 	<ul style="list-style-type: none"> • Buyer cooperation • Skills development • CSFs: quality, technical standards, innovation • Constraints: infrastructure, finance, corruption
Strong local content policies	No policy framework	New local content policy

industries and services have competitive advantages in four main areas: mine safety, ventilation, shaft sinking and tracked mining. Mining equipment made up 8.5 per cent of South African exports and over half of all capital equipment exports over the period 2005–2009. This has been increasing by 20 per cent per year, fuelled by demand from across Africa and Latin America, in particular. Indeed, South Africa maintains a trade surplus with the rest of the continent (excluding North Africa) owing to its mining machinery exports. In 2011, nearly 90 per cent of expenditures of mining supply firms were spent locally, as the country has a dense set of supply networks, raw materials and skilled labour.

Yet the competitive advantage of South Africa has been slowly declining, mainly owing to skills shortages and limited investments in research and infrastructure, at a time when skills training and improved energy and transport are mainstays of development strategies in rival developing and mining supply countries. While the mining supply industry has received little direct government support, owing to its competitiveness, critical interventions are needed in infrastructure, human capital and other areas to enable South Africa to retain its upstream mineral linkage competitiveness. Those investments should be coordinated with the needs of other manufacturing sub-

sectors to promote inter-industry linkages and spillovers and spur greater diversification. A possible mechanism for promoting the lateral spread of technology would be the creation of a challenge fund to support firms using existing technology to adapt or develop new products and enter non-mining markets. Regarding local content, mining equipment exports utilize far less procurement within South Africa, owing to cost effectiveness abroad. Yet firms have said that they still desire to procure locally and the government has mandated that firms receiving export credit finance must use at least 65 per cent local product.

Overall, a policy gap must be addressed to maintain South African mining input linkages, ranging from critical interventions to more innovative local content policies. Such upstream linkages can be seen as an area for future exploration for all African manufacturers, though requiring significant know-how for the machinery and scientific and other inputs to mining.⁵

Contributed by
John Robert Sloan
Macroeconomic Policy Division
Economic Commission for Africa

ECA Policy Briefs are produced by the United Nations Economic Commission for Africa (ECA) based on various analytical work and research on social and economic development of Africa carried out at, or in collaboration with, the Commission. ECA's mandate is to promote economic and social development in Member States as well as foster regional integration in Africa. For more information, please contact the Macroeconomic Policy Division, ECA, Addis Ababa, Ethiopia at +251-11-544-3264 or write to policybriefs@uneca.org.

⁵ Economic Commission for Africa and the African Union Commission. *Minerals and Africa's Development*, 2011.