The Nigerian Economic Summit Group
RC:303317

23rd Nigerian Economic Summit

SET SUPPORTING ECONOMIC TRANSFORMATION

LOCAL CONTENT POLICIES AND BACKWARD INTEGRATION IN NIGERIA

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October 2017

Acknowledgements

This report is prepared together with the Nigerian Economic Summit Group (NESG). We are very grateful for excellent support, guidance and comments received from Richard Ough from DFID. The views presented in this publication are those of the author(s) and do not necessarily represent the views of NESG, DFID or ODI. Errors are all ours.

Cover photo: An IITA researcher harvests a cassava root from a farm in Abuja, Nigeria. Cassava is the second most important food crop in the least-developed countries, and the fourth most important in developing countries. Over half of annual cassava production comes from Africa.

CONTENTS

ACRONYMS

BIP	Backward Integration Policy
CBN	Central Bank of Nigeria
CKD	Completely-Knocked-Down
CPDBEI	Centre for Policy Dialogue and Bangladesh Enterprise Institute
EPZ	Export Processing Zone
FGN	Federal Government of Nigeria
FTZ	Free Trade Zone
GDP	Gross Domestic Product
GPRB	Government of the People's Republic of Bangladesh
ICT	Information and Communication Technology
MANLOC	Manufacturers Association of Nigeria Local Content Group
MDAs	Ministries, Departments and Agencies
NCDMB	Nigerian Content Development and Monitoring Board
NESG	Nigerian Economic Summit Group
NIPC	Nigerian Investment Promotion Commission
NIRP	Nigeria Industrial Revolution Plan
NITDA	National Information Technology Development Agency
NNPC	Nigerian National Petroleum Corporation
NOTAP	National Office for Technology Adoption and Promotion
R&D	Research and Development
SKD	Semi-Knocked-Down
SMEs	Small and Medium-Sized Enterprises
TFP	Total Factor Productivity
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organisation
WBES	World Bank Enterprise Survey
WTO	World Trade Organization

EXECUTIVE SUMMARY

Prior to the recent recession, Nigeria experienced rapid but low-quality growth for a decade. This was accompanied by limited structural change and little economic transformation. The share of manufacturing in Nigeria's gross domestic product (GDP) is low relative to comparator countries and the country's heavy reliance on oil and gas exports has meant little attention has been paid to developing the manufacturing sector or diversifying into more complex products. Many of Nigeria's manufacturing firms are inward-looking, inefficient and uncompetitive, and levels of capacity utilisation in the sector tend to be low, even in prominent industries such as beverages, textiles, cement and tobacco manufacturing.

Boosting backward linkages could facilitate higher value-added in processing and manufacturing activities in Nigeria. If done well, this could have positive effects in terms of stimulating economic development; promoting the development of local industries; creating economic linkages; building local capacity, capabilities and technologies; developing skills within the workforce; boosting employment; and minimising capital flight.

Getting backward linkage policies right relies on a good understanding of the economics of local content. Theory suggests that addressing 'coordination failures' is important; this requires facilitating greater dialogue by actors in each value chain and agreeing on, and enforcing, mutual commitments. Similarly, positive 'externalities' can be exploited, for example by incentivising training by the private sector or the building of infrastructure with both public and private uses. Similarly, dynamic learning, leading to quality improvements and cost reductions, can be encouraged through targeted and strictly time-bound support. Such approaches are more likely to be effective than protection aimed at shifting the allocation of domestic resources toward currently less efficient parts of the value chain.

Nigeria has long experience of local content policy in the oil and gas sector. The Nigerian Oil and Gas Industry Content Development Act 2010 lists targets for progressive increases in local content. It sets minimum targets for Nigerian participation in 280 categories of oil services with the aim of fostering backward and forward linkages. The Nigerian Content Development and Monitoring Board enforces compliance with the Act, reviewing local content plans, dealing with applications, setting policies and guidelines and devising capacity-building initiatives. The evidence suggests these policies have helped deepen backward linkages in the sector, for example in fabrication and construction, well construction and completion, control systems and information and communication technology. One study estimates that local capacity utilisation grew by 400% in the six years following the introduction of the Nigerian Content Policy, while another estimates that local content policies in the sector have been responsible for attracting $5 billion into the local economy and creating 38,000 jobs.

Nigeria has also applied local content policy in other sectors. In the cement sector, Nigeria has achieved a significant level of backward integration, with more than 95% of the materials used for cement production in Nigeria sourced locally as a result of the industry's 2002 Backward Integration Policy. Similarly, there have been several policies to promote backward integration in food processing. For example, Nigerian Breweries sources sorghum and barley from Nigerian farmers; De United Foods Industries Limited is sourcing up to 45% of materials locally and looking to eventually produce its noodles using exclusively local content; Flourmills of Nigeria Plc is cultivating a sugar plantation to supply mills; and Dangote Sugar has developed an integrated sugar cane plantation, spanning the whole supply chain from milling through to sales and distribution. Nonetheless, imports are still the dominant source of inputs into food, beverages and tobacco in Nigeria, accounting for more than 70% of all raw materials.

Informality in the Nigerian economy makes ineffective many local content policies. In fact, the combination of very high trade costs and protectionist policies has contributed to incentivising a big and vibrant informal economy in Nigeria (Hoffmann and Melly, 2015). High tariffs, costly and lengthy customs procedures have increased smuggled trade across land borders.

The experience of other countries holds useful lessons for Nigeria. Norway successfully managed its transition from a country with no direct capabilities in the oil and gas sector in the late 1960s to a competitive producer of a variety of oil field services and equipment. This was not achieved by specifying local content requirements, but by giving priority to procuring from firms based in Norway that were *competitive* in terms of price, quality and delivery time. This approach developed local content by

gradually building domestic capabilities to compete internationally. By contrast, Brazil adopted a nationalistic approach to the development of its indigenous oil and gas sector, by closing out competition from foreign enterprises. Although this may have helped boost domestic capacity and capabilities, it resulted in higher costs and lower quality and productivity in the domestic industry. Ghana introduced regulations for local content in petroleum activities in late 2013, requiring a gradual increase in local sourcing up to the point where 90% of the goods and services required by the industry should be procured from local suppliers. However, some targets for local sourcing are unlikely to be achievable within the specified timeframe, as most local firms are simply unable to meet the standards demanded by foreign companies.

Outside the oil and gas sector, Indonesia has had a renewed focus on localisation in recent years, including using local content policies prohibited under World Trade Organization law, such as a duty exemption for imports of machines, goods and materials provided that 30% of the total value of machines used are sourced from local suppliers. Empirical evidence suggests local content requirements in Indonesian manufacturing have largely been ineffective in reducing Indonesian firms' dependence on imported inputs. By contrast, local content policies played a positive role in driving the expansion of the garment industry in Bangladesh, in part because policies were backed by efforts to build local capacity within the sector through the establishment of specialised institutions to boost garment industry skills, efforts to encourage technology transfer and the development of local technologies.

International comparison shows Nigerian firms are more backwardly integrated into world value chains. Nigerian firms present higher use of foreign inputs than Indonesia (roughly of similar size) and slightly less than in Kenya. A total of 30% of the inputs used by large firms in Nigeria are imported. These shares are smaller as the firm size decreases. Use of foreign inputs triples in the case of Nigerian exporting firms (from 12% to 38%), suggesting a link between international competitiveness and use of foreign inputs. Chemicals and pharmaceuticals, with 45% of foreign inputs, is the sector most internationally integrated. Non-metallic and plastic materials is the least internationally integrated sector, with just 14% of foreign inputs in production.

Our interviews with major Nigerian firms show the complexity of backward linkages in the economy. The level of local content varies not only with the sector in which the firm is situated but also with the size of the firm and the firm's position in the relevant value chain. Each final product, whether it be sugar, cement or cars, has a wide array of inputs both of goods and services. Some of these are already sourced locally; others are sourced from imports but could in principle be sourced locally; still others would be almost impossible to obtain within the country. The extent to which inputs fall into these three categories varies enormously because of the technicalities of each sector, not just because of the efforts of the actors within the sector.

Nigerian firms also face major challenges in strengthening backward linkages. These include difficulties in obtaining adequate and reliable energy and power supply; lengthy, costly and politically sensitive processes of gaining access to land; poor-quality transportation infrastructure; the high cost of capital; long lead times before backward integration efforts yield rewards; susceptibility of such efforts to shocks and unforeseen costs; inconsistency of policy implementation; lack of inter-sectoral policy coordination; inadequacy of knowledge and skills in the workforce; and lack of foreign exchange. Most of these challenges relate to the poor quality of the overall business enabling environment, rather than being specific to local content policies.

Firms have strong but sometimes opposing views on key local content policies. Most firms interviewed felt that specifying a mandatory local content share would be unhelpful, since the share of inputs that can be locally sourced depends on the sector and the point in the value chain. On tariffs, firms had mixed views. Firms that produced processed products for the domestic market using imported inputs were in favour of low tariffs on their raw material inputs and high tariffs on their final product; firms that used significant inputs of sophisticated imported manufactures were opposed to higher tariffs on such products. Several firms also pointed to the negative side-effects of tariffs, for example the knock-on impact on downstream sectors, the increase in corruption and smuggling and the concern that tariffs primarily benefit vested interests, particularly where quotas or bans have been used to create rents in specific sectors. At the same time, there was widespread support for efforts to boost skills and upgrade

technology, as well as for special tax and financial incentives for efforts to deepen backward linkages. Many firms expressed a desire for meaningful dialogue on local content policies and greater transparency in the policy-making process.

Senior officials have different visions of what local content policies mean. Some see backward linkages as a way of promoting self-sufficiency under the motto, 'We should grow what we eat and eat what we grow.' Others see local content policy as a way of saving foreign exchange and reducing pressure on the exchange rate. Another group promotes local content to boost productivity as part of a drive for greater export competitiveness. While these arguments have merit, they are not necessarily mutually compatible, since they suggest a focus on different sectors and different policy instruments. All officials agreed, however, that a key issue was not merely the formulation of policy but building the capacity to implement it effectively.

Recommendations

Our review of the literature and the empirical evidence gathered from Nigerian firms leads to five recommendations for policy:

1. *Don't try and make one size fit all.* Backward integration policies should be nuanced by the circumstances of the sector, rather than blanket policies being applied.
2. *Do the maths.* Evaluation of backward integration should consider both whether it creates jobs and boosts investment and value added in the sector, but also the impact of local content policies on consumers. The government should avoid forms of backward integration policy that provide long-term benefits for a sector or a handful of firms while imposing much higher costs on consumers.
3. *Engage, facilitate and enforce commitments.* The government should act as a facilitator – bringing together key players in a sector to discuss the opportunities and challenges of backward integration and agreeing the investments that will be made and the benefits that will accrue. Once agreed, the government should hold the players to account for delivery.
4. *Focus on fundamental improvements to the business climate.* Many of the challenges to backward integration are challenges to doing business in general. Improving the business enabling environment is essential not only to the success of backward integration but also to the growth of Nigeria's economy overall.

1. INTRODUCTION

Nigeria has experienced rapid but low-quality growth over the past decade. This has been accompanied by limited structural change and little economic transformation (te Velde et al., 2016). The share of manufacturing in Nigeria's gross domestic product (GDP) is low relative to that in comparator countries, and the country's heavy reliance on oil and gas exports has meant little attention has been paid to developing the manufacturing sector or diversifying into more complex products. Many of Nigeria's manufacturing firms are inward-looking, inefficient and uncompetitive, and levels of capacity utilisation in the sector tend to be low, even in prominent industries such as beverages, textiles, cement and tobacco manufacturing (National Bureau of Statistics, 2014). Moreover, linkages from the extractive sector to labour-intensive manufacturing remain limited (Dalberg, 2016).

There is a clear need for greater diversification of the Nigerian economy to promote quality growth, economic transformation and employment. This can be aided by the development of value chains that facilitate higher-value added processing and manufacturing activities within Nigeria and make greater use of locally produced inputs and services in production through the creation of backward linkages. The latter can have positive effects in terms of stimulating economic development; promoting the development of local industries; creating economic linkages; building local capacity, capabilities and technologies; developing skills within the workforce; boosting employment; and minimising capital flight (Nwete, 2012; Otombosoba and Dosunmu, 2016). Greater use of local content and more extensive backward linkages can also help Nigeria avoid the resource curse (Ovadia, 2013a).

In this process, attention should be placed on the costs associated with the policy tools employed. Policy objectives can be achieved by means of different tools, and their selection and implementation should be guided by assessment of their respective economic costs. In this regard, use of local content policies that restrict or make more expensive the use of foreign inputs, with the aim of generating an advantageous atmosphere for local providers, requires particular caution. Such an approach will make current Nigerian users of these inputs less competitive internationally, which may be serious in a context where international value chains require maximised productivity and low costs at each stage. Even in domestic value chains these policies may be extremely onerous for local firms and consumers.

At the same time, other actions can be taken to enhance the productivity of input suppliers, reduce their costs and make them competitive locally and globally, increasing the value added generated. Moreover, economic transformation should lead to specialisation in more productive and high-value added activities within the chain, in a process of functional upgrading of the Nigerian firms and workers.

This report analyses the different local policies options to increase backward and forward linkages in the Nigerian manufacturing sector. This includes a review of the *status quo* in terms of the legislation that supports local content policies in the country, enabling presentation of a clear picture of actions currently adopted. In addition, a literature review of multiple sources identifies how local content policies have operated in different sectors in Nigeria as well as international experience in comparable countries such as Brazil and Indonesia. Firm data analysis quantifies backward integration in Nigeria and describes its main characteristics.

Special attention is given to evaluating perceptions of and attitudes towards local content and backward linkages among leading private companies and key government ministries and agencies in Nigeria. From this qualitative analysis, the report extracts a series of case studies that illustrate the experiences of these types of policies in specific Nigerian sectors.

The report is organised as follows. After this introduction, Section 2 provides a brief conceptual assessment of how local content policies operate. Section 3 presents the literature review of Nigerian and international experiences. Section 4 discusses information drawn from interviews with private companies, ministries and agencies and provides some relevant case studies. The concluding section summarises the lessons learnt from this work and puts forward some recommendations for the Nigerian government in moving forward on local content policy. The quantitative analysis and a review of the legal framework can be found in Annexes I and II, respectively.

2. THE ECONOMICS OF LOCAL CONTENT

Local content policies to increase backward linkages can address either the supply or the demand for intermediate products and services. The first type aims to increase the quantity, quality and variety of inputs available for use in production. Such policies can target specific products and services (e.g. specific tax incentives) or operate affecting the general context and enable the operation of these sectors (e.g. infrastructure). Policies affecting the demand for goods and services aim to make existing sectors more compatible with the sectors to develop as well as to reorient demand toward the domestic market (e.g. domestic buy-in schemes).

These policies operate under the premise that increasing domestic content is a desirable objective. Increasing the share of domestic value added in production and exports, in this view, should entail aiming for more domestic production and employment. This view is generally supported by approaches that consider international trade a zero-sum gain and that the benefits of trade come from achieving and expanding a trade surplus. Consequently, replacing imported inputs with domestic substitutes is a way to achieve micro and macroeconomic objectives.

Local content policies are frequently associated with trade restrictions, tariff and tax incentives, subsidies and other measures to increase the use of domestic inputs. In some cases, regulations entail quotas for the use of domestic inputs (e.g. domestically produced alcohol in petrol). Export taxes and restrictions, for example, can develop forward linkages by reducing the export supply and increasing the domestic supply of commodities (Mendez-Parra et al., 2016). Meanwhile, the tariff structure can be modified by increasing the tariff on the final product and reducing the tariff on intermediate goods, increasing the effective rate of protection. Finally, bank regulations can be enacted to increase the availability of credit to purchase domestic inputs and reduce the availability of credit for imported inputs. These constitute just a small sample of the type of measures that can be considered.

This policy approach is sometimes criticised from an economic perspective on two grounds. The traditional critique points to the inefficient allocation of resources that these measures generate. Although in the short run it is possible to employ some idle resources, an increase in the production of domestic inputs to supply downward industries, for example, is achievable only by subtracting resources from existing activities. Assuming these resources are currently employed in sectors with comparative advantage, the reallocation means a general reduction in efficiency. Moreover, the reallocation of resources is frequently associated with falls in output in the existing sectors; for a given demand, prices will tend to increase, reducing real wages and demand further.

This critique suggests that the use of measures that alter the allocation of resources will affect existing industries. Therefore, such measures will fail because they are economically too costly. However, it also suggests that they tend to fail in relation to generating globally competitive input sectors. Typical infant industry policies struggle to develop sectors that achieve efficiency and that are productive enough to remove the original protection. Consequently, the developed sectors tend to be expensive and frequently deliver poor quality, affecting the rest of the industries involved. In addition, from the political economy point of view, protection leads to the development of groups that lobby for maintenance of the protection, making its removal complicated.

In addition to the traditional critique is a more modern approach based on the idea of international value chains. The international fragmentation of production, whereby the different stages take place different countries, requires a global look at the value chain. The increase in specialisation in the production of specific components leads to economies of scale that maximise the productivity of the firms involved, the stages and the chain in general. Stages take place in countries based on their capacity to contribute to this process. As firms in each stage use the most efficient and cost-effective goods and services in production, they guarantee the same standards to the stages taking place downstream.

Any policy that aims to affect this international allocation, aiming to increase the number of stages taking place in a given country, will alter this configuration and affect the global productivity of the value chain. By affecting this allocation, productivity is expected to fall and inefficiency to rise. The reallocation of resources, explained above, will also operate. Regulations and taxes will tend to reduce output in the existing stages of the chain, reducing economies of scale. Moreover, it is unlikely that the uncompetitive

stage will manage to achieve economies of scale and productivity levels as high as those achieved in other countries.

It is expected that the value chain will reorganise the production by reallocating the now-inefficient stages into other countries. After the measures have been taken in the domestic economy, firms in other countries will become more competitive and will absorb the stages, cutting out domestic firms from the value chain. This suggests a fundamental misconception about value chains. Rather than aiming to increase the share of value added embedded in world production, policy should be oriented towards increasing the value added generated through value chains, regardless of how much they represent of the chain. Moreover, firms can participate in more than one chain, suggesting large room for increasing the value added, which will be revealed as productivity and efficiency grows.

Rather than increasing the stages taking place in the country, participation in value chains can be increased through upgrading of the tasks performed in the chain. Value chain upgrading suggests stepping into tasks and stages where the creation of value is higher. This implies a reconfiguration of the use of the same resources, increasing the capture of value added per unit. This frequently implies abandoning the previous stages of the chain rather than adding stages. 'Moving up' the value chain is more about being cooperative and increasing productivity than it is about aiming to conquer new stages of production.

In this sense, the policies that work to upgrade value chain participation tend to be those that alter the productivity of the resources employed. They include a wide range of policies working at different levels. Some horizontal policies aim to create the enabling context for the development of new products and services that contribute to global productivity. This includes improving infrastructure, actions to improve employees' capabilities, such as training, measures to increase credit and property rights enforcement, among many others. These measures tend to lift different constraints affecting the development of firms and sectors. Sometimes, when they hit the most binding constraint, they can be sufficient to generate development of the targeted sectors.

Other policies work at the sectoral level, aiming to address particular constraints. They tend to work more effectively when they are designed in consultation with actors in related sectors. Therefore, policies to increase agricultural output may require consultation with buyers of these products to ensure the right product is being incentivised. Rather than using quantitative restrictions and taxes, actions should aim to facilitate coordination between providers and users of inputs. Time-limited subsidies can be considered to facilitate the creation of the necessary production capacity.

3. LITERATURE REVIEW

This brief review of the literature assesses the *status quo* together with prospects, constraints and promising policy approaches to generating greater backward linkages in Nigeria, with a particular emphasis on maximising linkages from manufacturing back into the economy. It looks at the size, extent and nature of backward linkages in the Nigerian economy, highlighting the main sectors currently providing locally produced inputs, examining the extent of internal value chain linkages within Nigeria, outlining the current use of foreign versus domestic inputs in particular sectors and noting promising sectors in which more locally produced inputs could be used (Section 3.1). Section 3.2 then summarises the key constraints identified to generating backward linkages in Nigeria, distinguishing where appropriate between general and sector-specific constraints. Section 3.3 describes the main policy approaches suggested in the literature to strengthen backward linkages in the Nigerian economy. Section 3.4 looks outside Nigeria at approaches employed to develop backward linkages in other countries in order to draw relevant lessons for the Nigerian context. Annex I presents the main results of a brief firm-level analysis of the extent of backward linkages and use of domestic versus foreign inputs in manufacturing using World Bank Enterprise Survey data.

3.1. Size, extent and nature of backward linkages in the Nigerian economy

The literature on backward linkages in the Nigerian economy concentrates mostly on the extent of, or potential for, linkages within a few broad sectors (agro-processing, oil and gas, minerals and metals and light manufacturing), with particular emphasis on linkages to the oil and gas sector. The focus on backward linkages in oil and gas reflects, in part, the emphasis placed on local content in the sector by the Nigerian government: this is the only sector for which local content provisions are currently in place, although the government is considering introducing provisions for other sectors (Warner, 2016).

Key observations drawn from the literature on the size, extent and nature of backward linkages in Nigeria's oil and gas, agro-processing, minerals and metals and light manufacturing and assembly sectors are presented separately in the sub-sections below. Thereafter, the final part of this section summarises the most promising industries and activities identified in the literature for developing and strengthening backward linkages in each of these sectors in the Nigerian context.

3.1.1. Oil and gas sector

Unsurprisingly given the dominance of oil and gas in the Nigerian economy, much of the focus in the literature related to backward linkages has centred on this sector. Nigeria has a long history of local content policies targeting deeper backward linkages in the sector, beginning with the Petroleum Act of 1969 and including regulations for Joint Operating Agreements and Production Sharing Contracts between the government and foreign oil companies, and directives mandating the use of certain local services. The focus on oil nationalism intensified in the 2000s, with policy emphasis on raising the levels of local participation in the sector, and a desire to boost the share of revenue from oil and gas accruing locally (Nwete, 2012). To aid these objectives, a local content division within the Nigerian National Petroleum Corporation (NNPC) was established (in March 2005), alongside creation of the Nigerian Content Consultative Forum (Morris et al., 2011; Adewuyi and Oyejide, 2012). Fabrication, engineering, manufacturing, banking and insurance, shipping and marine services, well and drilling and logistics services were among the key areas targeted for greater local content (Bakare, 2011).

The introduction of the Nigerian Oil and Gas Industry Content Development Act (2010) was a major policy development. The Act defines what constitutes Nigerian content and affords preferential treatment to companies qualifying as 'Nigerian'[1] (Nwete, 2012). It lists targets for progressive increases in local content from 45% in 2007 to 70% in 2010 and 80% by 2020 (Ihua et al., 2011). It also emphasises boosting backward linkages through procurement and utilisation of inputs produced locally (Adedeji et al., 2016). To this end, it sets minimum targets for Nigerian participation in 280 categories of oil services – including engineering, fabrication, materials and procurement, finance, research and development (R&D), shipping and logistics and other categories – with the aim of fostering both backward and forward linkages (Ovadia, 2013a, 2014, 2015). The Act also requires firms to contribute 1% of the value of energy contracts to a Content Development Fund designed to support local training and business support services (Ramdoo, 2015).

The introduction of the Act was complemented by the formation of the Nigerian Content Development and Monitoring Board (NCDMB) to implement local content policies. One of the NCDMB's core objectives is to ensure as much as possible of the manufacturing and services activities required for extracting resources in Nigeria is domiciled within the country (Ovadia, 2013b). It is also tasked with enforcing compliance with the Act, reviewing local content plans, dealing with applications, setting policies and guidelines and devising programmes to improve Nigerian content through capacity-building initiatives (Ovadia, 2013a).

The more recent legislative and policy commitments towards greater local content in the sector come as foreign oil companies continue to dominate oil and gas in Nigeria. The dominance of foreign participation in the sector – including in the upstream segments of the sector as well as in the supply of goods and services procured – is highlighted in a number of studies (see, for instance, Heum et al., 2003; Nwete,

[1] This is determined on the basis of whether or not the company is incorporated in Nigeria and has a minimum of 51% of issued shares held by Nigerian nationals.

2012). In turn, local content and domestic industrial capacity in the sector have reportedly been low for some time (Heum et al., 2003; Oyejide and Adewuyi, 2011). Moreover, linkages from the oil sector to the rest of the Nigerian economy are said to be limited (Ramdoo, 2015).

Despite this, there is evidence that Nigeria has gradually begun to localise and deepen backward linkages in the sector. Adewuyi and Oyejide (2012) present evidence of backward linkages involving manufacturing and knowledge-intensive service sectors – including fabrication and construction, well construction and completion, control systems and information and communication technology (ICT). Balouga (2012) explains how local companies are working in tandem with international counterparts to provide marine transport services for swamp and offshore operations. Ovadia (2013a) documents growth in the number and size of Nigerian companies providing services to the oil and gas industry, ranging from engineering design to specialised tools and equipment, and welding, fabrication and drilling services. He highlights a number of areas in which local content improvements were recorded after 2005, including in engineering person-hours, fabrication tonnage and the number of companies that fabricate pressure vessels or manufacture pipes (see Table 2 in Ovadia, 2013a for further details). Even so, he adds that still only a relatively small share (around 40%) of average spend for fabrication is domiciled in Nigeria. This is despite, according to Balouga (2012), fabrication being the most developed local manufacturing activity linked to Nigeria's petroleum industry. The equivalent percentage is even lower in the case of spending on engineering and installation.

Other studies present empirical evidence of growth in local content in the sector. Adewuyi and Oyejide (2012), for example, note that the share of local content in the sector grew from around 3–5% in the 1970s to 20% in 2004 and 39% in 2009. Bakare (2011) argues local capacity utilisation in the sector grew by 400% in the six years following the introduction of the Nigerian Content Policy. Adedeji et al. (2016) suggest the local content policy has had positive impacts on local value creation in Nigeria's oil and gas industry through greater participation of local firms and the development of backward linkages, although the overall effects have been below targeted levels. Their results also show backward linkages have helped create both direct and indirect jobs. In another study, the World Bank (2015) estimates local content policies in the sector have been responsible for attracting $5 billion into the local economy and created 38,000 jobs.

3.1.2. Minerals and metals

Outside of oil and gas, other extractive value chains also hold promise for developing local value chains in Nigeria. The Nigeria Industrial Revolution Plan (NIRP) emphasises tapping into the country's untapped mineral reserves to develop a strong industry around high-value, high-volume products further down the value chain (Government of Nigeria, 2014). The NIRP recognises the potential for Nigeria to become a major processing hub for solid minerals, with sufficient reserves of 44 solid minerals to potentially support mid and downstream industrial activities. This suggests there may be significant scope to develop backward linkages linked to downstream local processing activities within the minerals and metals sector. To this end, the NIRP targets the 'expansion of existing downstream processing and assembly capacity in the country, and then [to] gradually facilitate backward integration into midstream\upstream processing activities starting from solid minerals' (ibid.: 42). The Plan focuses specifically on the iron ore value chain, together with the cement, basic steel, aluminium and chemicals sub-sectors.

Presently, however, Nigeria's mining industry remains in its infancy, meaning there is a shortfall in the extraction of raw materials, currently made up by importing intermediate processed raw materials.

That said, the production of cement is one area in which Nigeria has already achieved a significant level of backward integration. More than 95% of the materials used for cement production in Nigeria are sourced locally (Government of Nigeria, 2014). This owes much to implementation of the industry's Backward Integration Policy (BIP) in 2002. The BIP was introduced to regulate imports of cement into Nigeria and stipulated that cement import licences would be granted (for a limited time period) only to importers that committed to building factories to manufacture cement locally using domestic inputs (primarily limestone and gypsum) (Ohimain, 2014; Ramdoo, 2015). The policy also provided incentives to local cement companies in the form of waivers of value added tax and customs duties on imported cement production equipment. According to Ohimain (2014), these policies were instrumental in facilitating the emergence of local and regional players in Nigeria's cement manufacturing industry. The

most successful among these is Dangote Cement Company, which is currently the largest cement producer in Nigeria and across Africa and boasts a fully integrated cement value chain, from quarry to depot (Ogunleye, 2014).

On the back of introduction of the BIP, which was complemented by rising demand for cement to support urbanisation, industrialisation and the demand for infrastructure development in Nigeria, the domestic cement industry has recorded sizeable increases in installed capacity. Data reported in Ohimain (2014) indicate that Nigeria's production of cement expanded from 2 to 28 million tonnes in the decade following implementation of the BIP, accompanied by the creation of around 2 million direct and indirect jobs.

3.1.3. Agro-processing

The Nigerian government's policy agenda emphasises the importance of developing value chain linkages with the country's agriculture sector. The NIRP looks to maximise the benefits from agricultural resources, including by building an end-to-end integrated agro-industrial value chain (Government of Nigeria, 2014). Similarly, the Nigeria Agriculture Transformation Agenda targets the use of agricultural inputs to feed industry, focusing on food processing (beverages, packaged food products), sugar, palm oil processing, cocoa processing, leather and leather products, rubber products, textiles and garments (ibid.). Food processing is regarded as especially important and is already the largest manufacturing group in the economy. However, there is great potential to source more raw material inputs for food production locally (Moses-Ashike, 2012). Imports are still the dominant source of inputs for the production of food, beverages and tobacco in Nigeria, accounting for more than 70% of all raw materials (National Bureau of Statistics, 2014).

According to the United Nations Industrial Development Organisation (UNIDO) and the Central Bank of Nigeria (CBN) (2010), there are few formal backward linkages in Nigeria involving small-scale farmer groups, cooperatives or associations and agro-industries. The same study notes that out-grower schemes and contract farming are relatively limited.

In addition, certain agro-industrial processing initiatives devised by the government with the intention of improving linkages between farms and processing facilities are yet to be implemented (Dalberg, 2016). These include the federal government's plan to acquire 10 integrated rice mills and six cassava mills, and the mechanisation projects devised by the Federal Ministry of Agriculture and Rural Development, which aim to distribute tractors to hiring centres with the intention of increasing harvest volumes to supply local processing facilities (ibid.).

More encouragingly, however, UNIDO and CBN (2010) cite some examples of large multinationals contracting local suppliers to source inputs. These include:

- Breweries (Guinness Nigeria, JIB) sourcing sorghum and barley from Nigerian farmers through contracting arrangements;
- A British American Tobacco out-grower scheme involving tobacco farmers in Oyo state;
- Nescafe's strategy to source cocoa, sorghum and soya beans locally from contracted farmers.

Furthermore, a recent study by Chigozie and Chinasa (2016) points to evidence that producers in the Nigerian food market are adopting backward integration strategies to develop their supply chains. They describe examples of De United Foods Industries Limited sourcing up to 45% of materials locally and looking to eventually produce its noodles using exclusively local content, and Flourmills of Nigeria Plc cultivating a sugar plantation to supply mills. Similarly, Ogunleye (2014) explains how Dangote Sugar has developed an integrated sugar cane plantation, spanning the whole supply chain from milling right through to sales and distribution. However, despite Dangote's efforts at developing backward linkages, the overall level of backward integration in the sugar industry still appears to be low, with the government suggesting this is a result of a shortage of capital investments in processing sugarcane to raw sugar (Government of Nigeria, 2014).

In other areas, products are mostly exported in raw form while the majority of processed products consumed in the domestic market are imported. For example, most crude palm oil for industrial use is imported, although local production is expected to grow significantly by 2020 on the back of efforts to expand plantations, improve yields and conversion rates and raise processing capacity (Government of

Nigeria, 2014). Additionally, while the production of cocoa is widespread across Nigeria, it is mostly exported in raw form, with limited local processing (Ogunleye, 2014). That said, the presence of a large domestic market for products produced using cocoa (e.g. chocolate, beverages) suggests there is significant scope to develop a local value chain with backward linkages.

3.1.4. Assembly and light manufacturing

Outside of agro-processing, there are few studies in the literature focused on backward linkages in Nigeria's manufacturing sector. The available work suggests backward integration in light manufacturing remains limited. The NIRP reports that many raw materials required for manufacturing particular types of consumer goods (e.g. electronics) need to be imported. Similarly, Usman (2015) notes there is currently limited scope for backward integration in light manufacturing, given Nigeria's heavy reliance on imported inputs. He adds that, where locally sourced inputs are used, it is mostly for low-value manufacturing activities. Heum et al. (2011) argue that, whereas other countries have succeeded in developing local content on the back of a solid manufacturing sector, this is limited by the small scope and extent of the manufacturing sector in Nigeria.

That said, there is some evidence to suggest local raw materials are increasingly being used as inputs into certain manufacturing activities in Nigeria. According to the latest available manufacturing sector report (2010–2012) published by the National Bureau of Statistics (2014), between 2010 and 2012 the value of locally sourced raw materials for the manufacturing sector exceeded the value of those imported, although the relative share of local raw materials declined over this period. The report also notes that, in the case of some manufacturing sub-sectors – basic metals, iron and steel, chemical and pharmaceuticals[2] – the majority of raw materials are sourced locally.

Looking ahead, automotive assembly is identified as a promising sector in which to boost backward linkages. There is potentially a very large market in Nigeria for manufacturing and supplying local parts and accessories, given the large number of cars – estimated at 10 million – on Nigerian roads (Government of Nigeria, 2014). The National Automotive Council (2014) estimates that up to 210,000 indirect jobs could be created in small and medium-sized enterprises (SMEs) supplying assembly plants in the Nigerian automotive industry. Projections from PwC (2016) suggest Nigeria could undertake actual manufacturing of vehicles using locally sourced components by 2050, potentially building more than 6 million new cars.

While the Nigerian Automotive Industry Development Plan envisages that vehicle assembly will initially entail most vehicle parts being imported, it anticipates that, over time, as local suppliers develop capabilities, specific parts will be manufactured locally (Jalal, 2014). The Plan focuses on increasing local content in the following areas:

- Welded parts (exhaust systems, seat frames);
- Electric parts (batteries, traffic indicators, wiring harnesses);
- Plastic and rubber parts (tyres, tubes, fan blades, seat foam, oil seals, hoses, radiator grills);
- Radiator, cables, filters, brake pads/linings, windscreens, fibre-glass parts, paint.

In addition, the National Automotive Council (2014) argues there are already strong opportunities to increase local content in the tyre industry. Whereas local producers in the past met around 75% of total tyre demand, and many producers sourced rubber from their own plantations located within Nigeria, significant reductions in tariffs (e.g. from 40% to 10% on imported truck tyres in 2005) have exposed local producers to competition from Asian and European imports and they have struggled. The majority of tyres used in Nigeria are now imported.

3.1.5. Promising areas for generating further backward linkages in Nigeria

Table 1 summarises the most promising areas identified in the literature for extending backward linkages in Nigeria's oil and gas, metals and minerals, agro-processing and light manufacturing sectors.

[2] Although the share of local materials used for chemicals and pharmaceuticals declined between 2010 and 2012 (National Bureau of Statistics, 2014).

Table 1. Promising areas for generating/extending backward linkages, selected sectors

Broad sector	Potential activities for local content/backward linkages	Source
Oil and gas	Industrial and knowledge-intensive service inputs	Adewuyi and Oyejide (2012)
	Fabrication	Heum et al. (2003); Heum (2008)
	Well construction and completion	Ibid.
	Modification, maintenance and operations	Ibid.
	Transportation	Ibid.
	Control systems and ICT	Ibid.
	Design and engineering	Ibid.
	Manufacturing of steel pipes for transporting oil and gas	Ovadia (2013a); MANLOC
	Manufacture of chemicals, nails and wires, cables, compressors, cranes and hoists, galvanised steel	MANLOC
	Supply of paints and varnishes	Ibid.
	Electric generator assembly	Ibid.
	Welding	Ibid.
	Production of flanges, connections, pumps, valves, and other common spares	Ibid.
	Manufacture of sub-sea equipment and structures	Ovadia (2013a); MANLOC
	Substations and transformers	MANLOC
Minerals and metals	Use of solid minerals to support midstream and downstream industrial activities in the iron ore, basic steel, aluminium and chemicals value chains (e.g. iron ore for smelting, production of hot and cold rolled steel products, blooms, billets, sheet metal, plates, bars, rods, wire and structural frames)	Government of Nigeria (2014)
Agro-processing	General food processing	Moses-Ashike (2012)
	Production of tomato paste	Te Velde et al. (2016)
	Local sugar cane as input for processing into raw sugar	Government of Nigeria (2014)
	Production of crude palm oil	Ibid.
	Processing of cocoa to produce products (e.g. chocolate, beverages) for the domestic market	Ogunleye (2014)
	Use of locally produced cassava as an input into the production of food staples (e.g. bread)	Chigozie and Chinasa (2016)
	Use of local cassava as a commercial input for the production of starch-based products (e.g. textiles, adhesives, paper), ethanol or animal feed	Ogunleye (2014)
	Fruit processing	Te Velde et al. (2016)
Assembly and light manufacturing	Leather	Ibid.
	Supply of local parts and accessories for automotive assembly – welded parts, electrical parts, plastic and rubber parts (incl. tyres), radiators, cables, filters, brake pads/linings, windscreens, fibre-glass parts, paint	Government of Nigeria (2014); Jalal (2014); National Automotive Council (2014)
	Vehicle manufacture using locally sourced components	PwC (2016)

Note: MANLOC = Manufacturers Association of Nigeria Local Content Group.

3.2. Fundamental constraints to generating backward linkages in Nigeria

Previous studies have highlighted the limited success of local content policies in Nigeria (Oladele, 2001; Shirley 2005). In addition, the NIRP acknowledges that poor backward linkages from industrial sub-sectors have plagued Nigeria's manufacturing sector for many years. In part, this owes to a number of structural barriers and problems in the investment climate that dis-incentivise companies from sourcing

local inputs from Nigeria and localising value adding activities within the country. These include poor infrastructure (especially energy infrastructure), high costs of finance (owing to high interest rates), low standards for intermediate and finished goods, security concerns (especially around the Niger Delta) and pervasive corruption and bureaucracy, which raises the cost of doing business (Heum et al., 2003; Government of Nigeria, 2014).

In addition, a host of supply issues affect the quality, quantity and availability of local inputs, thereby further dis-incentivising downstream processors from procuring local inputs and establishing backward linkages in Nigeria. These include low productivity in manufacturing, lack of local capacity (in many different areas), limited options for sourcing locally, limited access to technology and a lack of technological know-how, poor infrastructure, fragmented local supplier bases and poor coordination between suppliers and downstream purchasers, financial constraints, inconsistent policies and poor implementation of existing policies. Table 2 summarises the main constraints the literature highlights in each of these areas. Some constraints are general in nature (affecting backward integration across the board); others affect backward integration and efforts to boost local content in specific sectors.

Table 2. Constraints to generating backward linkages in Nigeria

Constraint to backward integration	Specific issues	Sectors in which backward linkages are most affected	Source(s)
Low productivity	Low total factor productivity in certain sectors (e.g. textiles and garments)	Manufacturing	Te Velde et al. (2016)
	Low product yields (e.g. rubber, cocoa), including because of poor framing practices, inadequate/poor quality inputs, insufficient use of technology (e.g. for sugar production)	Agro-processing	Dalberg (2016); Government of Nigeria (2014)
Lack of local capacity	Under-developed SMEs	All	Oladele (2001); Shirley (2005)
	Lack of diverse production capabilities and low levels of productive knowledge, reflected in low economic complexity	All	Te Velde et al. (2016)
	Lack of human capacity and skills mismatches	All	Ovadia (2013b); Ramdoo (2015)
	Lack of manpower and production capacity in local firms		Nwete (2012)
	Inability to meet minimum targets for local content	Oil and gas	Ovadia (2014); Warner (2016)
	No strategy to build local capacity in a sustainable and targeted way	Oil and gas	Bakare (2011)
	Underdeveloped upstream smelting capacity to process iron ore into basic steel inputs	Steel	Government of Nigeria (2014)
Limited options for sourcing locally	Few and poorly capitalised local and indigenous upstream and service companies and an underdeveloped supply chain	Oil and gas	Nwete (2012)
	Inability for local companies to compete with multinational suppliers of goods and services	Oil and gas	Heum et al. (2003); Ovadia (2013b)
	Failure of local contractors to fulfil basic prerequisites for contracting (e.g. legally-binding quotations, agreed delivery deadlines)	Oil and gas	Adebola et al. (2006)
	Lack of quality produce to supply agro-processors and industrialists (e.g. poor-quality hides and skins for leather production; inadequate quality cotton supplied to ginneries)	Agro-processing and light manufacturing (esp. leather and textiles)	Government of Nigeria (2014)

Constraint to backward integration	Specific issues	Sectors in which backward linkages are most affected	Source(s)
	Raw materials (e.g. scrap aluminium and metal) exported rather than being used for processing in local plants	Metals and minerals	Ibid.
Lack of technology and technological know-how	Low technological capacity	All	Aneke (2002); Heum et al. (2003)
	Limited technology transfer	Oil and gas	Government of Nigeria (2014); Senoo and Armah (2015)
	Lack of technical expertise in management	Oil and gas	Nwete (2012)
Poor infrastructure	Weak local infrastructure (esp. power and water infrastructure)	All (esp. manufacturing)	Oladele (2001); Shirley (2005)
	Limited storage facilities (e.g. for cocoa) and no proximity to processing facilities, leading to high post-harvest losses	Agro-processing	Adewuyi and Oyejide (2012); Esteves and Barclay (2011); Dalberg (2016); Government of Nigeria (2014)
	Poor road infrastructure affects access to processing facilities	Agro-processing	Dalberg (2016)
	Insufficient pipeline infrastructure supplying key inputs for downstream oil and gas projects	Oil and gas	Adegbite and Erhimona (2008); Ovadia (2013b); Government of Nigeria (2014)
Fragmented local supplier base and poor coordination between suppliers and downstream purchasers	Difficulty for downstream processors (e.g. leather producers) to source inputs from a highly fragmented sector dominated by smallholders	Agro-processing (esp. leather)	Government of Nigeria (2014)
	Lack of effective coordination between farmers, farm gate buyers, processors and sellers	Agro-processing	Ogunleye (2014)
Financial constraints	Underdeveloped capital market and difficulty accessing funding from commercial banks and financial institutions	All	Ogiemwonyi (2001);Oladele (2001); Olorunfemi (2001); Aneke (2002); Heum et al. (2003); Shirley (2005)
	High cost of borrowing, low equity base of contractors and lack of access to foreign currency	Oil and gas	Adebola et al. (2006); Adegbite and Erhimona (2008)
Inconsistent policies and poor policy implementation	Policy reversals (e.g. on requirements to use locally grown sorghum in beer production; on import tariffs for barley and malt concentrates)	Agro-processing	Akinyoade et al. (2016)
	High customs duties on products used for fabrication, making locally produced items more expensive	Manufacturing	Heum et al. (2003)
	Non-compliance with local content rules and use of Nigerian firms to 'front' for foreign firms	All	Bakare (2011); Ovadia (2013b)
	Lack of political will to bring about change	All	Balouga (2012)

Constraint to backward integration	Specific issues	Sectors in which backward linkages are most affected	Source(s)
Political economy constraints	Complacency and lack of awareness at highest policy levels	All	Te Velde et al. (2016)
Sheer scale of informality	Informality and smuggling undermining the effect of policies and incentives	All	Hoffman and Melly (2015)

3.3. Policies to strengthen backward linkages in Nigerian manufacturing

A range of possible policy interventions are proposed in the literature to strengthen backward linkages and raise the level of local content in manufacturing in the Nigerian economy. These include general horizontal interventions (cutting across a range of different sectors) and targeted, sector-specific interventions designed to raise backward integration in sectors that have some linkages to manufacturing activities. The main proposals in terms of horizontal interventions to strengthen backward linkages are to:

- Improve access to infrastructure to support linkages and the development of large-scale indigenous firms (Adewuyi and Oyejide, 2012; Adedeji et al., 2016);
- Improve vocational training and standard education to enhance local skills and raise the competency of local entrepreneurs (Adedeji et al., 2016).

Table 3 summarises the key targeted, sector-specific policy proposals presented in the literature to strengthen backward linkages. The proposed interventions cover a range of different sectors, from extractives (oil and gas, iron, steel, other metals and minerals) to agriculture and agro-processing and a number of different light manufacturing activities related to the production of automotive parts and components, textiles, leather and leather products and rubber products. The NIRP outlines a significant share of the interventions across the different sectors, and thus they are already enshrined in the government's policy objectives. Others are proposed by academics, researchers and other stakeholders and include a variety of interventions to better link local raw materials and intermediate input providers and processors (e.g. through situating them in closer proximity, improving transport and logistics costs, enhancing storage and warehousing infrastructure, introducing out-grower and bulk buyer schemes); to review incentives to export raw materials versus those available for further local processing; to improve local technical and quality standards (e.g. through certification); to address skills shortages and capacity needs; and to boost the yields of local input producers.

Table 3. Targeted, sector-specific interventions to strengthen backward linkages

Sector	Proposed interventions	Source
Agriculture and agro-processing	Devise supportive national agricultural policy to ensure widespread and proper use of locally produced high-yield sorghum	Akinyoade et al. (2016)
	Situate factories and production plants close to raw material sites (farms) to reduce transportation and logistics costs	Chigozie and Chinasa (2016)
	Boost product yields through out-grower models (providing inputs and technical assistance through agriculture extension programmes) and support to improve farming practices	Dalberg (2016)
	Fast-track the implementation of agro-industrial processing initiatives designed to improve linkages between farms and processing facilities	Ibid.
	Introduce bulk buyer schemes for agricultural produce to bridge the gap between smallholder farmers and large industrial processors; encourage bulk buyers to invest in facilities (e.g. storage) to support the agribusiness value chain	Government of Nigeria (2014)

Sector	Proposed interventions	Source
	Facilitate cocoa warehousing investments, including through schemes to encourage public–private investments	Ibid.
	Review the Export Incentives Scheme to ensure cocoa bean supplies are available for domestic processing	Ibid.
	Identify and facilitate public–private interventions in rural road infrastructure (especially feeder roads that get products to central market areas)	Ibid.
	Provide working capital funding for out-grower schemes for sugar	Ibid.
	Enhance industrial standards for agro-inputs	Ibid.
	Provide tariffs and incentives to encourage backward integration into the production of raw sugar from sugar cane	Ibid.
Oil and gas	Improve accountability and transparency in the way Nigerian content is implemented (e.g. in awarding oil blocks; in the bidding process for indigenous contractors)	Ovadia (2013a)
	Provide project financing and funding for local firms and improve access to banking services	Arizona-Ogwu (2008); Bakare (2011)
	Agree guidelines on domestic supply obligations for gas-based manufacturing	Government of Nigeria (2014)
	Include practical regulations to aid compliance with ambiguous provisions in the Nigerian Oil and Gas Industry Content Development Act	Nwete (2012)
	Establish a local content fund that is easily accessible for local companies	Ibid.
	Undertake a survey of available capacity to identify needs and inform training in targeted areas aligned to industry needs	Bakare (2011); Nwete (2012)
Iron and steel	Encourage established players in the steel industry to integrate backwards in hot-rolled steel and smelting	Government of Nigeria (2014)
	Further develop iron ore and coal deposits for exploitation	Ibid.
	Develop bulk freight network infrastructure for moving large volumes of material	Ibid.
	Engage existing downstream steel players through investment packages to link proven deposits to their existing operations	Ibid.
	Review government enforcement of the existing restrictions on export scrap steel; work with other ministries to ensure the restrictions are properly implemented	Ibid.
Other metals and minerals	Prove-up key mineral deposits to international measurement standards	Ibid.
	Review incentives given to export scrap aluminium	Ibid.
Leather	Promote large single-owner cattle ranches or the establishment of grazing reserves for multiple small-scale herders	Ibid.
	Improve the technical standards of local producers of hides and skins as well as tanneries, including through better integration between tanners and abattoirs to reduce damage to animal skins	Ibid.
	Commercialise local tannery technology	Ibid.
Rubber products	Raise raw rubber output by increasing cultivations, improving yields and standardising harvest procedures	Ibid.
	Review export incentives to encourage exports of value-added rubber products rather than raw rubber	Ibid.
Textiles	Provide support to cotton farmers to improve packaging and bagging with a view to reducing contamination	Ibid.
	Provide support to cotton farmers to raise standards of cotton lint and increase their cotton grade level, including for supply to local markets	Ibid.
Automotive	Promote local component manufacturing	Ibid.
	Implement a conducive tariff regime to promote backward integration by encouraging dealers/manufacturers to build up assembly and component manufacturing capacity in Nigeria (e.g. concessionary rates on imports to fill	Ibid.

Sector	Proposed interventions	Source
	supply gaps for companies demonstrating strong commitment to assemble and manufacture certain quantities locally)	
	Establish world-class auto skills centres in partnership with international technical skills institutions	Ibid.
	Promote collaboration between the National Automotive Council and original equipment manufacturers to fill skills gaps in local automotive operations through manpower development programmes	Jalal (2014), citing actions in the Automotive Industry Development Plan
	Encourage and assist local component manufactures to obtain ISO 9001 certification	Ibid.

3.4. Approaches to developing backward linkages in other countries

This final section scours the international literature to document experiences and outcomes of various approaches (both successful and unsuccessful) to developing backward linkages in other countries. In general, analyses of the effectiveness of backward integration programmes and local content policies are quite limited (Esteves et al., 2013). Furthermore, the analyses that are available focus mostly on local content and backward linkage policies in the extractive sectors. Hence, much of the discussion in this section concentrates on examples of backward linkage policies in different extractive sectors (especially in oil and gas, but also in other areas of mining), although some attention is given to policy approaches in light manufacturing.

3.4.1. General lessons from experiences in developing local content across extractive sectors in different countries

Focusing generally on the extractive sector, and drawing on experiences in several different countries (including Brazil, Ghana, the Kyrgyz Republic, Madagascar, Malaysia, Mozambique, Nigeria, Norway, Russia, South Africa and Zambia), Ramdoo (2015) highlights a range of factors that determine the success of local content policies. These include:

- Clearly defined policy objectives;
- Effective implementation and monitoring of local content policies;
- Well-focused policies that can be realistically implemented by the extractive sector;
- Flexibility in regulations, enabling them to be adapted to changing circumstances;
- A balance between mandatory regulatory measures to achieve local content objectives and maintaining competitiveness;
- Strategic collaborative partnerships with private companies to support the implementation of local content policies;
- Ensuring protectionist policies are temporary, performance-based and phased out when local industries achieve the necessary levels of competitiveness; and
- Promoting innovation, R&D, capability upgrading and technology transfer as key elements in building a competitive local supplier base.

3.4.2. Experiences in backward integration and developing local content in oil and gas

Norway

Norway successfully managed the transition from a country with no direct capabilities in the oil and gas sector on the discovery of oil in the late 1960s to become a competitive producer of a variety of oil field services and equipment. Today, more than half of the capital inputs used in the sector are sourced locally, along with 80% of the sector's operational and maintenance inputs (Ramdoo, 2015). The gradual introduction of local content policies was a key factor in this transition. A local content law, which was in effect until 1994, enabled domestic firms serving the indigenous oil and energy sectors to develop to the

point where they were globally competitive. This was not achieved by specifying local content requirements, but rather by stipulating that priority should be given to procuring from firms based in Norway in cases where they were *competitive* in terms of price, quality and delivery time (Nordås et al., 2003; Oil and Gas IQ, 2010). This approach took into account the reality that the capabilities of local firms were not yet sufficiently developed to be competitive, and sought to facilitate the development of local content by gradually building domestic capabilities to compete internationally.

In order to build domestic capabilities gradually, the Norwegian government initially introduced specific requirements for international oil companies to play a role in building local capacity. For instance, the inclusion of Norwegian firms was a compulsory requirement for international oil companies looking to bid on contracts, and international oil companies were required to undertake local capacity-building (e.g. through mentoring of domestic firms) as a condition of operating in Norway, and offered tax rebates as an incentive to do so (Ogunleye, 2014). These measures allowed for a gradual improvement of local capacity and knowledge along with the transfer of technological know-how (Senoo and Armah, 2015). The requirements were gradually dismantled – and completely phased out by 1994 – as the indigenous firms supplying the sector became more competitive.

At the same time, the government prioritised knowledge development through a significant emphasis on R&D to support the local oil and gas value chain. A key focus was on creating strong research capacity (e.g. through the establishment of the RF-Rogaland Research Institute) to support the development of local technologies and expertise in oil and gas. Foreign firms were also encouraged to form R&D partnerships with local suppliers and institutions (Oil and Gas IQ, 2010).

Efforts to gradually build domestic capacity and competitiveness in the sector also focused on skills development and transfer (McKinsey Global Institute, 2013). International firms were required to commit to transferring technology to their local counterparts in order to be allocated licences (Oil and Gas IQ, 2010). A range of different skills transfer and training programmes were also introduced through collaborations between international and national oil companies and local oil field services and equipment firms (ibid.). In addition, the University of Stavanger – widely known as a 'petroleum university' – was established with a view to raising the number of oil and gas professionals in Norway. The national oil company, Statoil, was also tasked with training and skills development. According to Jourdan et al. (2012), Statoil has trained more than 80,000 people since its establishment in the 1970s.

It is important to note when analysing the factors underpinning the development of local capacity and backward linkages in Norway's oil and gas industry that the country was already an industrialised company prior to the discovery of oil and gas. Crucially, this meant a considerable degree of industrial capacity had already been developed in other areas within the economy, and this provided a platform from which these capabilities could be transformed and extended to the oil and gas industry (Heum et al., 2011). In addition, the policies described above were implemented within a conducive economic and political context characterised by a well-governed economy, strong institutions and favourable macroeconomic conditions (Ramdoo, 2015). These conditions are markedly different from the current context in Nigeria.

Brazil

Brazil adopted a nationalistic approach to the development of an indigenous oil and gas sector. This sought to develop local content by closing out competition from foreign enterprises (Heum et al., 2011). High import duties were imposed on specific products, thereby making it easier for local suppliers to compete. At the same time, backward linkages were made an important element of procurement and tendering legislation. Specifically, oil and gas firms operating in Brazil were awarded more points when tendering for contracts if they demonstrated commitment to purchasing higher shares of goods and services from local Brazilian suppliers (Nordås et al., 2003). Specific local content targets were set for onshore projects (70%) and offshore projects in shallow (51%) or deep (37%) water (Ramdoo, 2015). The Brazilian government also made it mandatory for foreign firms to contribute to R&D and technology transfer as a condition for obtaining a licence, and introduced penalties for non-compliance (ibid.).

Estimates suggest as many as 875,000 jobs have been created in Brazil since the implementation of the local content regulations (Mendoza, 2016). In addition, purchases of domestically produced equipment and supplies have reached a value of around $14 billion (ibid.).

However, while the protectionist policies described above may have helped boost domestic capacity and capabilities, they have also resulted in higher costs and lower quality and productivity in the domestic industry (e.g. by limiting access to the use of foreign technology) (Nordås et al., 2003). As a result, the outcome of Brazil's attempts to build an internationally competitive sector has been mixed (Heum et al., 2011). The Brazilian government has also struggled to enforce compliance with minimum local content targets, given the high cost they impose on participating companies. Warner (2016) reports that in 2014 as many as 14 oil and gas companies operating in Brazil opted to incur fines for failure to meet minimum legal targets rather than face the cost of meeting the targets themselves.

That said, recent efforts to improve infrastructure and allow foreign competition in the domestic market show promise in helping boost the competitiveness of the local oil and gas sector. Ramdoo (2015) identifies the following policy-related factors that are contributing to the emergence of competitive local suppliers and a world-class hydrocarbon sector in Brazil:

- The introduction of a supplier development programme, with emphasis on the development of SMEs (through capacity support and training, and matching SMEs with industry requirements);
- Collaborative partnerships in the form of licensing agreements wherein multinationals allow local firms to 'develop advanced technologies, promote national suppliers and diversify into other industrial activities such as petrochemicals, fertilizers and distribution';
- The creation of a local supplier database to facilitate linkages;
- Efforts to make the state oil company, Petrobras, more globally competitive, including by ensuring the company gives preference only to *competitive* local suppliers.

Ghana

Ghana's oil industry is still in its infancy. Following discovery of commercial quantities of offshore oil in 2007, the government introduced Regulations for Local Content and Local Participation in Petroleum Activities in late 2013, seeking to gradually increase local control over the country's oil resources. These regulations require a gradual increase in local sourcing up to the point where 90% of the goods and services required by the industry should be procured from local suppliers by 2020 (Mendoza, 2016). They also contain local staffing requirements; Amoako-Tuffour et al. (2015) report that Ghana has already made good progress in raising the level of employment of local workers in the industry.

But Ghana's efforts to extend backward linkages and enhance local content in the industry face a number of challenges. Some targets for local sourcing set in the legislation are unlikely to be realistically achievable within the specified timeframe (Senoo and Armah, 2015). For example, the legislation sets a target for 100% of drilling risers used in the industry to be manufactured locally within 10 years, even though no manufacturing of these products currently takes place within Ghana. Similarly, it stipulates that local firms should provide between 60% and 80% of detailed engineering and other engineering services, even though only one wholly owned Ghanaian firm is currently providing these services.

More generally, most local firms are simply unable to meet the standards foreign companies demand, with limited capacity, a lack of technical know-how and high costs meaning they cannot compete with foreign suppliers (Amoako-Tuffour et al., 2015). The capacity constraints facing these local firms are exacerbated by a lack of access to finance, which serves as both a barrier to entry for new firms and a constraint on purchasing the sophisticated equipment necessary to improve product standards and competitiveness (ibid.).

Encouragingly, however, there are some indications that the situation is improving. Senoo and Armah (2015) note that there is now greater willingness among international oil companies to do business with suitable SMEs and to mentor them. This is reflected in a greater number of joint venture partnerships within the industry and generally more extensive collaboration between them and local subcontractors.

Even so, Ghana is likely to face further challenges related to the enforcement of local content legislation. The legislation cannot be applied retroactively, meaning it does not apply to foreign oil firms already

operating in Ghana. This makes it difficult to impose the regulations on existing companies (Senoo and Armah, 2015). In addition, as a middle-income developing country, Ghana's local content legislation is potentially in breach of both the World Trade Organization (WTO) Agreement on Trade-Related Investment Measures and its General Agreement on Trade in Services, and there is a possibility that companies will refuse to comply with the legislation on this basis (Suleman, 2012).

3.4.3. Experiences in developing backward linkages in light manufacturing

Indonesia

Indonesia's manufacturing sector has for a long time depended heavily on imported inputs (both intermediate inputs and raw materials). This is despite a long history of policies aiming to promote local content and backward integration in particular manufacturing sectors. For example, a number of different local content programmes have been utilised in the automotive sector, mostly with little success in reducing reliance on imported inputs.

The 'deletion programme' running from 1974 to 1993 sought to progressively raise the level of manufacturing assembly undertaken in Indonesia using locally produced parts and components. But it had little impact in terms of developing support industries for automotive assembly, because local suppliers had limited technological capabilities, were largely unable to finance their substantial investment needs and operated in a small and fragmented market that hampered the achievement of economies of scale (Thee, 2012).

The deletion programme was replaced in 1996 by the National Car Programme, which provided fiscal incentives to automotive manufacturers in exchange for the use of locally produced parts and components. The programme set targets for automotive manufacturers to consecutively increase local content from 20% to 40% and then 60% within three years in order to quality for lower import duties (Aswicahyono et al., 2000). But the onset of the Asian financial crisis meant the programme was short-lived, and local content was given less priority in the years that followed.

However, there has been renewed focus on localisation in Indonesia in recent years, including through the use of discriminating local content policies prohibited under WTO law. These include a duty exemption announced in late 2009, and later extended to the automotive industry, for imports of machines, goods and materials provided that 30% of the total value of machines used are sourced from local suppliers (Negara, 2016). Regulations were also introduced in 2014 encouraging the use of local components in the production of motor vehicles as well as local sourcing of welding, painting and assembly services (ibid.).

Despite this renewed emphasis on localisation, Negara (2016) presents empirical evidence that local content requirements in Indonesian manufacturing have largely been ineffective in reducing firms' dependence on imported inputs. He speculates this could owe to weak enforcement of local content laws.

Bangladesh

In contrast with the experience in Indonesia, in Bangladesh, UNIDO (2016) argues that local content policies played a positive role in driving the rapid expansion of the garment industry in the post-independence period.

Examples of successful policies designed to encourage the use of locally produced fabrics in the Bangladeshi garment industry include:

- Access to subsidies of 5% of the free on-board export price conditional on meeting local content requirements (UNCTAD, 2012);
- Cash compensation and duty drawback facilities for export on the condition that local raw materials are used in garment production (CPDBEI, 2001);
- Garment exporters given (limited) subsidies from the Bangladesh National Bank if products manufactured locally use 100% local raw materials or duty-paid imported raw materials (UN, 2004).

Importantly, these measures were backed by efforts to build local capacity within the sector. Specific measures included the establishment of specialised institutions (e.g. the National Institute for Fashion Technology) to boost garment industry skills within the labour force, and efforts to encourage technology transfer (e.g. through partnerships with foreign investors) and the development of local technologies (e.g. through stronger collaboration between domestic machinery manufacturers and local technology institutes) (GPRB, 2010, 2016; Yunus and Yamagata, 2012; UNIDO, 2016).

3.5. Key lessons for Nigeria

The experiences outlined above document a variety of approaches to developing backward linkages in different country and sectoral contexts. These experiences provide a number of potentially useful lessons for Nigeria:

- Targets for local content should be set in line with what can be realistically implemented given the capacity and capabilities of local suppliers.
- It is important to ensure there is a balance between the regulatory requirements imposed to boost backward linkages and maintaining competitiveness. Requirements should not be so onerous that they discourage compliance or raise costs to the level that they discourage investment and render the local industry uncompetitive.
- Similarly, it is critically important to ensure any protection provided to local suppliers is temporary and does not affect their long-term competitiveness in terms of cost, quality and productivity. Policies designed to generate backward linkages should be implemented gradually alongside efforts to build domestic capabilities to compete internationally; and protection for local suppliers should be disbanded gradually as they improve their capacity and competitiveness. Priority in procurement should be given only to *competitive* local suppliers.
- Skills development through both targeted training programmes and skills transfer initiatives along with supplier development programmes that include capacity-building and training can be effective in raising the capabilities of local firms to compete effectively with their international counterparts.
- Prioritising R&D and innovation that improve local technologies and expertise is important for enhancing the competitiveness of the local supplier base.
- Collaborative partnerships with the private sector and appropriate incentives (e.g. tax rebates) can be effective in encouraging multinational firms to support local capacity-building and to transfer knowledge and technology to domestic suppliers.

4. THE EXPERIENCE OF NIGERIAN FIRMS AND POLICY-MAKERS

4.1. Methodology and firm characteristics

To gain a deeper understanding of local content policies in the Nigerian context, it was decided to undertake both quantitative and qualitative analysis of Nigerian firms. Unfortunately, Nigeria does not have a publicly available sample frame of firms, making it impossible to select a representative sample of firms for analysis. However, it does have some major business associations. Key among these is the Nigerian Economic Summit Group (NESG), a grouping of some of the leading firms in the Nigerian economy. We therefore partnered with NESG to conduct a series of interviews with NESG firms about their perspectives on local content and backward linkages. Specifically, we asked about:

- The scope and nature of backward linkages that exist (and the reasons why they are not stronger);
- The challenges associated with implementing greater backward linkages; and
- The impact of backward linkages policies and their attitude towards such policies.

These interviews were conducted in strict confidence to allow respondents to speak freely about their views. As a result, we do not present a list of respondents and do not refer to the names of any individual companies in our findings, except where the firm in question granted permission to do so.

In addition to these qualitative interviews, we collected quantitative data via a questionnaire sent to all NESG members. Again, the information provided was confidential and so we do not present the figures or responses for any individual firms but rather draw on the information provided to give a sketch of the typical characteristics and responses that we received.

Box 1. Firm characteristics

The sample list for the questionnaires was drawn from the NESG membership list of 73 firms operating in various sectors of the economy, including 24 from financial services, 17 from professional and educational services, 10 from manufacturing and construction, 9 from energy and mining, 8 from agriculture and processing and 5 from commerce and trade. The firms were classified as big (32), medium (17) or small (24) depending on annual turnover and labour force, to capture the scope of their operations relative to competitors in the sector.

Over 90 percent of the firms we interviewed had their operational base in Lagos. Typically, firms in the manufacturing and agriculture sectors tended to have production facilities at other locations apart from Lagos, including Niger, Anambra, Ogun, Benue, Cross River, Edo, Imo, Oyo, Kano, Kaduna and Kwara states. For the firms that had production facilities in other locations, Lagos contributed on average close to 60% of total production capacity. Approximately 30% of respondents said they were located in an export promotion or industrial zone.

In terms of ownership, about 80% of questionnaire respondent firms were wholly owned by Nigerians while 20% had part foreign ownership to the tune of approximately 55%. Foreigners made up less than 1% of the total staff strength of the responding firms and less than 20% of the management cadre.

4.2. Findings

4.2.1. The scope and nature of backward linkages

Above we indicated the difficulties associated with making general claims about the level of backward linkages in the Nigerian economy. Level of local content varies not only with the sector in which the firm is situated but also with the size of the firm and its position in the relevant value chain. As a result, it is difficult to make generalisations about the scope and nature of backward linkages in Nigeria.

This said, the detailed firm-level interviews presented a revealing picture about some aspects of backward integration. In all cases, the firms being interviewed were lead firms with a key role in the governance and management of the relevant value chain. They are the key to backward integration since they have the ability and resources to make the necessary investments in their suppliers or supply chain. Understanding the circumstances and constraints they face is therefore important to devise local content policies that are likely to be effective.

The first finding from our firm interviews related to the enormous complexity and variety of the value chains associated with even seemingly simple sectors. Each final product in the economy, whether it be sugar, cement or cars, has a wide array of inputs, both goods and services. Some of these are already sourced locally; others are sourced from imports but could in principle be sourced locally; others still would be almost impossible to obtain within the country. Moreover, the extent to which inputs fall into these three categories varies enormously by sector, because of the technicalities of each sector rather than the efforts of the sector actors.

For example, sugar production is a relatively straightforward process: sugar cane needs to be grown (with all the attendant inputs that this entails) crushed to produce raw sugar and then refined to produce the sugar used by households and industry. Since the Nigerian climate and geography are conducive to growing sugar cane, one would expect that this industry would have a high share of local content. However, this is not what we observe. Whilst the three main sugar companies are clearly making

significant investments in sugar production (see Box 2), it is still the case that a significant share of raw sugar is imported. The reason for this is two-fold:

1. Raw sugar from Brazil is extremely cheap. Brazil has the best-adapted climate in the world for growing sugar and a well-established sugar cane industry. It is very difficult for Nigeria to compete with the prices at which Brazil can sell raw sugar.
2. The costs of setting up and managing sugar plantations in Nigeria are significant. Access to land is difficult and time-consuming; power is insufficient and unreliable; and transportation costs are significant owing to poor infrastructure.

As a result, progress on backward integration in this, perhaps one of the easier sectors for deepening integration, has been slower than anticipated, despite significant protection.

Box 2. Local content in Nigeria's sugar industry

With an estimated consumption level of about 1.5 million tons, Nigeria ranks as the second largest sugar-consuming nation in Africa after South Africa. In 2008, the federal government directed the National Sugar Development Council to develop a road map for the attainment of self-sufficiency in sugar because local sugar production was able to meet only 2% of local demand. According to the-then Minister of Trade and Industry Olusegun Aganga, sugar importation cost the country N101.9 billion of foreign exchange in 2011. The Nigerian Sugar Master Plan is designed to explicitly encourage the development of local content in the sugar industry. It aims to achieve this in two ways: the imposition of a significant duty and levy on refined sugar; and the gradual imposition of levies and tariffs on raw sugar imports.

Table 4. Approved sugar tariff plan

Year	Raw sugar		Refined sugar		Local production as % of demand
	Duty %	Levy %	Duty %	Levy %	
2012	5	0	20	10	2.1
2013	10	50	20	60	5-10
2014-2015	10	70	20	75	20-30
2016-2018	10	80	20	85	40-75
2019-2020	10	30	20	75	80-102

Source: Government of Nigeria (2012).

The imposition of a large duty and levy on refined sugar has meant that 90% of the refined sugar consumed in Nigeria is now processed domestically. However, in practice, the scheduled increases in duty and levy on raw sugar have not been put in place. Rather, the three main players in the Nigerian sugar sector – Dangote Sugar Plc, Golden Sugar Plc (owned by Flour Mills of Nigeria Plc) and BUA Sugar – are permitted to import raw sugar into the country at a low concessionary rate of 5% on the basis of a plan to invest in local sugar production. At the time of the interviews, two firms – Dangote Sugar Plc and Savannah Sugar Plc – had processing facilities with a combined capacity of 53,000 metric tonnes. However, the managing director of Dangote Sugar Refinery is on public record as saying, 'In the next five years we should be able to produce 1.5 million metric tonnes locally, from around 50,000 metric tonnes now.'[3] Currently, Nigeria still imports 90% of its raw sugar.

The Nigerian Sugar Master Plan estimates that Nigeria's demand for refined sugar will reach 1.75 million metric tonnes by 2020. To meet this projected demand level, 28 sugar factories of varying sizes will need to be brought on stream and 250,000 hectares of land brought into sugar cultivation over the next 10 years, with the bulk of the capital required coming from the private sector. The sector faces significant challenges in achieving this expansion. For example, one major firm stated that the biggest challenge lay in getting suitable land for cultivation, pointing to

[3] http://thenationonlineng.net/overcoming-challenges-in-sugar-production/

restrictions in the availability of suitable land and lengthy and difficult negotiations. Other respondents pointed to the inconsistency of government policy, creating uncertainty that dis-incentivises investment. Several respondents bemoaned the lack of technical capacity for mill construction and the lack of specialist knowledge in sugar processing. Another respondent claimed the gap between demand and local production capacity had led to an increase in smuggling activities.

If progress is difficult in the sugar sector, it is even harder in some other sectors. For example, Nigerians consume a considerable amount of dairy products, overwhelmingly obtained from the rehydration of imported milk powder products. At first sight, this may seem to be another candidate for backward integration. However, for the most part Nigeria does not have the climate and geography for raising cows that are highly effective at producing milk.[4] As a result, despite substantial and costly efforts to try and boost backward integration by major producers, it is not realistic for any commercial firm to expect more than a relatively low share of local content in Nigerian milk production.

The same may be true for some elements of car production (see Box 3). Nigeria already assembles cars from completely-knocked-down (CKD) or semi-knocked-down (SKD) inputs. Backward integration would entail manufacturing these inputs. For some items this may be possible, but for others it would present a considerable challenge. Even for items where backward integration may seem easy, it is rarely simple. For example, tyres may seem like an obvious choice, since Nigeria can produce rubber. But modern tyres are not just made of rubber; they consist of a complex array of components that need to be combined in a precise fashion into a modern high-quality tyre. This in turn requires invariably imported, specialist machinery and building up capacity in the relevant productive techniques. This does not make backward integration impossible – but it does make it costly, and many of the firms interviewed were concerned about the prospect of such costs being imposed on them, particularly if this was done suddenly or without an understanding of the nuances of the sector. In general, the clear message from all the firms interviewed was that it is extremely important to understand each value chain in a detailed, granular way before making policy on local content, since the cost and feasibility of backward integration varies so widely, not only between sectors but also between individual components of selected value chains.

Box 3. The Nigerian auto industry

Nigerian auto policy is embodied in the National Automotive Industrial Development Plan, introduced in 2013, which provides fiscal guidelines and a development programme for the industry. The main objective is to resuscitate domestic vehicle assembly operations and to increase local content in the automotive industry. The Plan also aims to reduce the amount of forex spent on importing vehicles into the country in the hope that the availability of local raw materials such as rubber and steel will aid the development of a local auto industry.[5] In 2012, annual spending on vehicle imports was projected at over N550 billion ($6.3 billion), making it the second largest consumer of foreign exchange.[6]

Table 5. Value of Nigeria's automotive imports (US$ millions)

Year	2008	2009	2010	2011	2012	2013	2014
Vehicles*	5,407	4,012	5,592	4,082	6,364	6,212	5,691
Tyres and spare parts	883	895	1,132	1,051	1,005	1,313	1,383

[4] Nigeria does, of course, have a long and proud tradition of cattle-rearing, particularly in the north. However, such cattle are primarily raised for meat, not for commercial milk production, and the structure and conduct of the industry – primarily smallholders with cattle often moving significant distances – is incompatible with large-scale industrialised dairy production.

[5] In its market report for 2015, XCOM Africa group reported that Nigerian Customs had revealed that 400,000 cars had been imported into the country in 2012, of which 300,000 were used while 100,000 were new: http://www.subsahara-afrika-ihk.de/wp-content/uploads/2015/06/2015_The-African-Nigerian-Automotive-Industry-2015.pdf

[6] http://www.naddc.gov.ng/pdf_files/NAIDP.pdf.

Motorcycles, cycles and agricultural machinery	908	493	731	980	1,137	1,216	1,521
Total imports	7,198	5,400	7,455	5,113	8,506	8,741	8,595

Note: *This includes road motor vehicles, tractors, trailers and semi-trailers, civil engineering and contractors plant and equipment. Source: Figures for 2008 to 2013 were obtained from the National Automotive Industrial Development Plan while figures for 2014 were obtained from: http://www.nigeriamanufacturingexpo.com/uploads/Pages/site160_32338_en_file1.pdf.

The National Automotive Design and Development Council was established to initiate, recommend and supervise policies and programmes for locally manufactured vehicles and components. The first step in this plan was to encourage private players to set up assembly plants through the use of an incentive scheme: CKD and SKD vehicles were allowed to be imported at lower rates than fully built vehicles (see Table 5). Any firm that set up an assembly plant was allowed to import two fully built vehicles for every one vehicle locally assembled (and at half the rate as would have been paid if the firm did not set up an assembly plant).

This incentive scheme has had some successes. By December 2014, existing assembling plants had commenced operations, including PAN (former Peugeot), ANAMMCO in Enugu and Leyland-Busan of Ibadan, while Innoson Vehicles Manufacturing had added cars to its commercial vehicle assembly operation. Hyundai, Nissan, Volkswagen and several others are now assembling their vehicles in Nigeria. Eleven new companies have been given *bona fide* manufacturing status to start assembly operations.[7]

However, the policy also had some perverse effects. For example, theoretically the Nigerian automotive industry has an installed capacity of 108,000 cars, 56,000 commercial vehicles, 10,000 tractors, 1,000,000 motorcycles and 1,000,000 bicycles annually. However, capacity utilisation is very poor, at 10% for vehicles and about 40% for motorcycles, bicycles and component parts.[8] Our respondents suggested one of the reasons for this was that some of the capacity was not real, allegedly because some firms had taken advantage of the incentives to set up fake assembly plants that were, in effect, no more than large warehouses, to obtain the lower duty rate on imported cars. Compliance is weak because the Standards Organisation of Nigeria does not have sector specialists to monitor implementation. These challenges resulted in the government stopping issuance of licences for new assembly plants in October 2015.

Table 6. Import duties under the Nigerian Automotive Industry Development Plan

Category	Duty	Levy
CKD for vehicle assembly	0%	0%
SKD1 for vehicle assembly	5%	0%
SKD2 for vehicle assembly	10%	0%
Fully built vehicle (within auto programme)	35%	0%
Fully built vehicle (outside auto programme)	35%	35%
Automotive assembly operation equipment	0%	0%

Source: Nigerian Automotive Design and Development Council[9] and CBN.[10]

High tariffs also encouraged smuggling. One respondent said that, in 2014/15, when the duty rate on imported cars was increased from 20% to 70%, import of cars into Nigeria fell from 400,000 to 200,000, but car imports into Benin increased from 75,000 to 250,000. The Nigerian market simply moved to Benin; Nigerians would buy their cars in Benin, clear them there and drive into Nigeria.

4.2.2. The challenges of implementing backward integration

Our respondents provided numerous examples of the challenges faced in implementing backward integration policies. Key challenges mentioned by firms included the following:

Energy: Top of the list for many firms were the difficulties associated with adequate and reliable energy and power supply. In many cases, firms are compelled to build and operate diesel-generated power supplies for their factories. Thus, power costs are extremely high. While the challenges of extending and

[7] http://naddc.gov.ng/index.php/achievements

[8] https://tradingeconomics.com/nigeria/imports-by-category

[9] http://www.naddc.gov.ng/pdf_files/NAIDP.pdf

[10] https://www.cbn.gov.ng/out/2014/ted/ted.fem.fpc.gen.01.003.pdf

improving the provision of reliable power are a much broader issue, the high cost of power suggests backward integration is likely to be harder in industries with energy-intensive inputs and those dependent on reliable power. For example, sectors that require an effective cold chain cannot risk unreliable power; backward integration in these sectors therefore entails the additional cost of ensuring uninterrupted power availability. However, backward integration also presents opportunities for the energy sector. For example, the waste products from backward-integrated industries, for example crushed sugar cane, palm sheath, used tyres, can be used as fuel for local renewable energy generation. However, to make this more commercially viable, there needs to be an opportunity to sell excess power to the grid. Current policies do not facilitate this, raising costs for backward integration.

Land: As noted above for sugar, access to suitable land is a major challenge for firms, particularly in the agro-processing sector, where significant tracts of land are needed. Often, such land is occupied, which then necessitates a process of dialogue and engagement regarding relocation. Frequently certificates of occupancy are missing, and, even where government has sold or leased the land, local communities state that they have a prior claim. Processes for resolving such issues are lengthy and often politically sensitive. In addition, there is no standard policy, process or benchmark for determining the amount that should be paid for land. Consequently, the cost is uncertain and prone to the political dynamics of the locality as well as inter-state political rivalry.

Transport infrastructure: Where backward integration requires the production of an input in another part of the country, the poor quality of transport infrastructure adds significantly to the cost of such inputs. This applies not only to the road infrastructure; costs might be significantly reduced through the overhaul and extension of the rail network, but this is currently very limited and of poor quality.

Cost of capital: Boosting local content invariably means significant investments in the supply chain. As a result, almost all firms complained about the cost of capital. Nigerian interest rates for business lending are high, particularly compared with inflation. As a result, firms prefer to borrow for things with guaranteed returns. The nature of backward integration is that it often requires an element of experimentation. Moreover, if other costs are high, then increasing local content can worsen profitability; this makes some investments in backward integration less attractive to lenders.

Time to fruition: Investments in backward integration often do not yield instant cost reductions. Rather, it can take a few years for firms to build up the skills and capital to provide high-quality inputs at the same price as imports. In some cases, there is an in-built delay. For example, backward integration by the consumer goods sector into palm oil is challenging because it takes four to five years before oil palms start to produce fruit. As a result, such backward integration is only feasible by firms with significant own resources or access to patient capital.

Shocks and tackling risk: Backward integration can be risky. For example, efforts to achieve backward integration in the production of tomato paste received a major setback when Nigeria was affected by the so-called 'tomato ebola' – a moth that devastated tomato harvests in 2016, dramatically raising the prices of the industry's main input. While all productive enterprise is risky, experimenting with new processes, using new inputs and new machinery, is particularly prone to failure, at least initially, raising the costs of backward integration.

Inconsistency of policy: Some firms complained about the inconsistency of policies for backward integration. As one respondent put it, *'If an investment is spending N60 billion they need to know that this is the plan and it won't change for a long time.'* Incentives and penalties need to be applied in a structured and non-discretionary manner. In practice, some respondents claimed, '*The politics sometimes gets in the way of the policy*,' with the result that the allocation of incentives is driven by relationships and not the impartial application of the rules. Even where a policy exists, such as a concessionary tariff for a few years, there is uncertainty about whether it will be extended or not, with implications for long-term investments. As one respondent from a leading industrial firm put it, '*Consistency is therefore key. It is not just the policy but the worry about a U-turn*.'

Inter-sectoral linkages: The strengthening of backward linkages is often seen within the context of a single sector. However, in practice, it often requires coordination across policies in different sectors, because the input for one sector can come from another. For example, one respondent in the consumer

products field pointed to their need for inputs from the oil and gas sector, which they could not currently obtain because of the non-functioning of particular refineries. This example highlights that the extent of backward integration is sometimes not even in the hands of the lead firm in the sector, and requires policy actions in another sphere entirely.

Inadequate human capital: Several firms said that one of the key difficulties in building backward linkages was lack of knowledge and skills in the workforce. Some firms pointed to a perceived reduction in the quality of staff coming out of universities and technology colleges. As the manager in one oil company put it, '*If I hire a geologist, I have to do a lot of tweaking to get someone useful*.'

Lack of foreign exchange: Several firms pointed to lack of foreign exchange as a constraint to their business in general.[11] This is not surprising given the major curtailment of access to foreign exchange through the CBN specifying a list of 41 items for which foreign exchange would not be provided.[12] In theory, the development of local content should save foreign exchange, and this is an explicit objective of the policy of foreign exchange restriction. However, some firms pointed out that foreign exchange restrictions also made it difficult to implement backward linkages. This is because inputs that are now to be produced locally often also require imported inputs; thus, for some products, foreign exchange restrictions can inhibit the development of backward linkages.

A few respondents also noted a wider linkage between Nigeria's foreign exchange policies and the incentives to develop local content. One respondent from a major business association commented that import dependence had been the direct result of an overvalued exchange rate resulting from oil exports. This had, over the years, created an industrial structure that was highly import-dependent. The fall in the oil price, and the resultant drop in the value of the naira, had hit import-dependent firms particularly hard. However, the maintenance of a lower exchange rate would provide a strong incentive for firms to develop greater local content – both because of the natural protection offered by the high price of imports and as a way of hedging against foreign exchange risk.

In summary, the implementation of backward linkages faces numerous challenges in practice. These are mostly generic challenges associated with the investment climate rather than specific to the development of local content. Nigeria is currently exerting considerable efforts to improve the enabling environment for all businesses through the establishment of the Presidential Enabling Business Environment Council, along with the work of its Enabling Business Environment Secretariat.[13] The responses of the firms interviewed suggest the improvements the Council is implementing will also help stimulate the development of local content and backward linkages.

4.2.3. Firms' views on backward integration policies

Given the challenges outlined above, the interviews asked firms what sorts of policies would be likely to be most effective at stimulating local content – and whether there were policies that might be harmful to the achievement of greater local content. We outline below a summary of the views raised, structured around some of policies that have been implemented or proposed for backward integration.

Mandatory share of local content

Perhaps the most commonly mentioned policy on local content is the idea of specifying a share of inputs that should be sourced domestically. However, several respondents were of the view that this approach would be ineffective. When asked what the impact would be of the immediate imposition of a 50% local content requirement, most firms said it would result in a decrease in their revenue (in one case by 70%). They pointed out that the share of inputs that could be locally sourced depended enormously, not only on the sector but also on the particular part of the value chain a firm occupies in the value chain. Some firms would have no difficulty achieving 50% local content because they already do; others, because of

[11] During the period of the interviews, foreign exchange was extremely scarce and a major constraint for firms. However, as of the time of writing, the availability of foreign exchange had improved.

[12] See https://www.cbn.gov.ng/Out/2015/TED/TED.FEM.FPC.GEN.01.011.pdf for details.

[13] See http://pebec.gov.ng/ for details.

the nature of the products or services they produce, would struggle to meet 10%. Hence a single figure, while administratively easy and politically appealing, would make little sense across sectors. Specifying a target share of local content may be appropriate in sub-sectors, but again firms pointed to the importance of clear definitions. For example, is an input local if it is purchased from a local firm, even if that firm imported it? If not, how far back along the supply chain should one go – and what share of value needs to be added in the process for an input to be classified as 'local'? What sort of monitoring can feasibly be put in place to ensure compliance with such rules?

High tariffs on inputs/outputs

The most commonly applied backward integration policy is tariff protection. Unsurprisingly, respondent firms that produced processed products for the domestic market using imported inputs were in favour of low tariffs on their raw material inputs and high tariffs on their final product; firms that used significant inputs of sophisticated imported manufactures were opposed to higher tariffs on such products. However, several respondents raised issues associated with tariffs that may merit greater consideration by policy-makers.

Complexity: Several firms mentioned that it was important to understand the complexity of their sectors. While some sectors appear 'simple', firms in almost every sector pointed out that, to function effectively, they needed multiple inputs, some of which were not available or would be very difficult to obtain locally. For example, cement requires limestone (available locally) but also rare metals and chemicals ; auto manufacture requires steel but also sophisticated machinery and electronics. Tariff policy must have an appreciation of the complexity of individual sectors to avoid unduly harming sectors in the pursuit of backward integration.

Knock-on impacts: A few firms pointed to the knock-on impacts of tariffs on other firms and consumers. While tariffs may incentivise the development of particular sectors or sub-sectors, they increase the cost of the outputs of those sectors. Where those outputs are inputs into other sectors, this reduces the profitability of the downstream sectors; where those outputs are final goods or services, tariff protection increases the costs to consumers. This has a direct impact on real incomes and therefore an indirect effect on aggregate demand.

Corruption and smuggling: Some firms rejected tariff protection as a policy for promoting backward integration because of the way it induces other undesirable behaviours. Specifically, some firms pointed to how the imposition of tariffs had encouraged corruption in the customs service linked to attempts to avoid such payments. Others highlighted how high tariffs encouraged smuggling, which can undermine the purpose for which the tariff was enacted. For example, some respondents claimed that, when the duty rate for cars increased, more cars were driven in at the land borders with Benin while the number of official imports fell (see Box 2).

Vested interests: A few firms argued that tariff policy was used for the benefit of vested interests. Tariffs inevitably create rents for particular groups. Some respondents alleged that these rents were created deliberately for favoured firms or individuals with close political connections, rather than as a response to a coherent trade or industrial policy.

Free trade zones: Some firms complained about the inconsistency of tariff policy within and outside of FTZs. Specifically, firms located in FTZs can obtain a rebate on their import duties subject to exporting 90% of their output.[14] However, a change in policy allowed firms to sell all their output to the domestic market, creating a competitive disadvantage for firms outside the FTZ, which have to pay full duties on their inputs.

Notwithstanding these caveats, overall firms were of the view that tariff protection was necessary to build up local capabilities in certain sectors, but wanted to see greater consultation on such policies, and more coherence in their application.

[14] Nigerian Export Processing Zone http://nepza.gov.ng/

Quotas of imported inputs and import bans

Another policy – often linked to the tariff schedule – is the imposition of quotas for imported inputs. As shown for sugar in Box 1, the idea is that, initially, a large import quota is provided to the key players in the industry, enabling them to import at a minimal tariff, but this quota is gradually reduced over time as they build up the capacity for local inputs. Often, this policy is tied to a high tariff or a ban on the importation of the final good: for example, sugar faces a 70% tariff; beer imports are banned; and there is a plan to ban rice imports in 2017.

Such policies create large rents for the firms involved, since they raise prices significantly for the final good while allowing continued importation of the raw material. Unsurprisingly, firms in these sectors were strongly in favour of such policies. However, from a perspective of maximising local content, the effectiveness of such policies depends on whether firms fulfil their commitments to boost local content. Several respondents pointed out that implementation and enforcement of the policies was key. If favoured firms are not held to their commitments to invest in local content, then the application of quotas and preferential tariffs provides them with a substantial, permanent rent with no corresponding gain in the form of increased domestic capabilities. Moreover, such policies need to careful design. One respondent pointed to the government policy on rice that allows rice imports at a preferential rate for firms that establish a rice mill. This is supposed to encourage the development of rice milling but, allegedly, the definition of 'having a rice mill' consists only of acquiring the land and having the equipment. As a result, to obtain the import quota, some firms allegedly create mills that never mill any rice.[15]

In general, bans and quotas are a politically popular tool since they send a strong signal about the government's desire to produce locally. However, in practice, they can be a blunt instrument for achieving this objective. For example, in March 2017, the federal government banned the importation of tomato paste, powder or concentrate, and increased the tariff on imports of tomato concentrate, among others, from 5% to 50%, to revive the tomato sector. One respondent alleged that this led to the immediate collapse of one tomato paste firm, with the loss of 200 jobs, as it relied on concentrate importation. This suggests the government should be extremely cautious in the use of bans to promote backward integration, given the strong and sudden changes in incentives that such policies can induce.

Government procurement

In 2016, the government set up the President Enabling Business Environment Council, and the Enabling Business Environment Secretariat, which implements the reform agenda of the Council. This initiative is designed to examine reforms across the entire gamut of issues faced doing business in the country. One of the initiatives undertaken has been the issuance, in June 2017, of an Executive Order 'On support for local content in public procurement by the Federal Government' (Government of Nigeria, 2017). This Order stipulates that, 'Made-in-Nigeria products shall be given preference in the procurement of the following items and at least 40% of the procurement expenditure on these items in all MDAs [ministries, departments and agencies] of the FGN [Federal Government of Nigeria] shall be locally manufactured goods or local service providers:

a) Uniforms and Footwear;
b) Food and Beverages;
c) Furniture and Fittings;
d) Stationery;
e) Motor Vehicles;
f) Pharmaceuticals;
g) Construction Materials; and
h) Information and Communication Technology.'

The Order also requires that, 'Within 180 days of the date of this order, the Minister of Industry, Trade & Investment in consultation with the Director-General of the Bureau for Public Procurement shall submit to the President, a report on the Made-in-Nigeria initiative that includes findings from paragraph 4 above.

[15] http://sahelcp.com/wp-content/uploads/2016/12/Sahel-Newsletter-Volume-12.pdf

This report shall include specific recommendations to strengthen the implementation of Local Content Laws and local content procurement preference policies and programmes' (Government of Nigeria, 2017).

Some firms expressed some scepticism about whether it would be possible to implement this Order effectively. In particular, the use of a blanket 40% local content requirement would be difficult for some items, such as cars. Other firms opposed the use of price premiums for local firms in procurement since it would raise costs or force them to accept lower-quality inputs.

Local content regulations are also in place for ICT purchases. The Office for Nigerian Content Development in Information & Communication Technology was established under the National Information Technology Development Agency (NITDA) Act 2007. It has recently issued Guidelines for Nigerian Content Development in Information and Communication Technology (NITDA, 2017). The guidelines have three core focus areas: driving indigenous innovation, developing the local ICT industry and establishing Intellectual Property regulation and protection standards. Within each of these areas, there are strategic goals and specific indicators by which progress will be measured. Among the numerous specific requirements of the Guidelines is a requirement for original equipment manufacturers to conduct all assembly within Nigeria and work toward 50% local content within a three-year period. However, policy-makers interviewed stressed that, while compliance with the Guidelines is compulsory, NITDA takes a partnership approach to working with the industry to try and encourage greater local content where sensible and feasible. As one official put it, '*We don't want to run foreign companies out of Nigeria – we want them to develop side by side [with Nigerian firms]*.' Because the initiative is new, no baseline has been constructed against which to measure progress; nor has any analysis yet been conducted to assess the potential benefits and costs of the policy.

Technology upgrading

There was strong support among both private and public-sector respondents for policies to encourage technological upgrading and technology transfer. The National Office for Technology Adoption and Promotion (NOTAP) – a parastatal under the Federal Ministry of Science and Technology – aims to promote the efficient acquisition/absorption of foreign technology and the concerted development of indigenous technological capability through the proactive promotion of innovation and the commercialisation of technology. Some private firms saw NOTAP's role as primarily one of ensuring compliance with technology transfer requirements. Others had had a much closer involvement. For example, one firm had worked closely with NOTAP to solve local sourcing for calcium carbonate – a raw material for their products. They had attempted to use locally supplied material, but it had damaged their machines because of its high quartz content. Working together with NOTAP and the Ministry of Science and Technology, they managed to persuade local suppliers to make the investments necessary to purify the material to their standards. As a result, they now purchase 8,000 tonnes a year locally and pay a price premium for a higher-quality product. Similarly, other firms argued for the need for further investments in raw materials R&D – citing the work of the Raw Material Research and Development Council,[16] which aims to facilitate the sourcing, development and utilisation of domestic raw materials in manufacturing.

Several firms argued for the need for greater investment in agriculture research and technology. One bemoaned the fact that their own investments in boosting productivity in local sorghum production had to be carried out entirely using their own resources and that there was no form of incentive for firms to boost agricultural productivity. In general, several firms felt there was a need for policies to directly improve the productivity and capabilities of farmers and firms in the agriculture sector.

Training

Firms also expressed strong support for government policies to promote and incentivise training. Because investments in training can be 'lost' to firms when employees leave, there is a natural tendency to underinvest in training, since such investment may benefit other firms. As a result, governments

[16] See http://rmrdc.gov.ng/QuickLinks.aspx for details.

frequently either mandate or incentivise training. As one major firm put it, '*There must be some agreement that they all do training*.' However, some firms claimed that the quality of graduates from Nigerian institutions had declined over the previous five years, arguing that more investment was needed in universities and technology colleges.

One firm in the sugar sector gave a concrete example of the challenges involved in finding the necessary skills. In building a sugar mill, they were forced to use an Indian company, which brought in 80 fabricators from India. The local firm would rather have used Nigerians but could not find 80 Nigerians with the necessary skill set who would be willing to work in the remote location for an extended period. More generally, there was a sense among respondents that Nigeria was not making sufficient investments in scientific and technical skills. As one respondent put it, '*Government should be putting pressure on the companies to develop the skills. But they aren't thinking about this*.'

Investment incentives and tax allowances

Unsurprisingly, most firms were in favour of investment incentives and tax allowances to encourage local content. However, views were mixed on the effectiveness of particular modalities of support and the way they are currently being implemented.

For example, companies that set up in certain industries may be entitled to 'pioneer status', which confers a five-year tax holiday (and seven years in disadvantaged regions). Some firms have exploited this mechanism and are very happy with it. However, several firms pointed out that pioneer status had been abused in the past. For example, it was alleged that firms that had been in business for a long time had still obtained pioneer status, by making small new extensions to their activities. Another firm alleged that only large and well-connected firms got access to the facility: '*If you aren't a blue chip, the tax people won't give it to you*.' It is beyond the scope of this report to assess the validity of these claims – but the view was widespread. In general, there appears to be little analysis of the costs and benefits associated with awarding such tax incentives. One firm argued that it would be more effective for the government to not award tax incentives and instead to invest the resources in more transparent, direct forms of support for local content development. At a minimum, one firm argued that tax incentives should have a clear expiry date and the authorities should publish not only how to access such incentives but also who was provided tax incentives and how much. One firm pointed out an inherent tension between the provision of tax incentives and the government's need for revenue. They suggested adoption of the approach used in Ghana, whereby Parliament has to approve such incentives. This discourages firms from asking for incentives since they have to justify them in public.

Another firm argued that there was a contradiction between the pioneer status policy, administered by the Nigerian Investment Promotion Commission (NIPC) and the way the Federal Income and Revenue Service interprets it. When a company is established it gets double tax in its first year, but this does not usually matter since one does not expect to make profits in the first year. However, NIPC has said that companies that come out of pioneer status must then be taxed as new companies, implying double taxation in Year 6. This inconsistency provides a disincentive to the use of pioneer status incentives.

The process of local content policy-making

Aside from individual policies, several firms expressed views about the process of policy-making on local content and backward integration. Firms complained about a lack of consultation on policies. As one respondent put it, '*They don't talk with the people that the policy is supposed to help before they implement it*.' Firms expressed a strong desire for effective and meaningful dialogue on local content policies. Some pointed to the need for greater collective bargaining through associations such as NESG and the Manufactures Association of Nigeria (MAN). Others requested greater transparency, claiming that often firms did not even know what policies existed. Even where incentives are being provided, one firm argued that, 'The process of getting the incentives is as important as the incentives.'

4.3. Policy-makers' views on backward integration policy

In addition to interviewing a wide range of firms, we consulted a range of policy-makers involved in the design and implementation of local content policies. These conversations provided an insight into the views and concerns of senior officials at the heart of government policy-making in this field.

There was widespread commitment to the idea of backward linkages/local content. All policy-makers indicated their support for the general policy of attempting to strengthen domestic value chains and produce more inputs domestically. However, interpretation of the Made-in-Nigeria policy varied considerably. Some repeated the phrase used by President Buhari – 'We should grow what we eat and eat what we grow' – suggesting a self-sufficiency motive for local content policy. In this framing, backward linkages are needed because it is unnecessary to import things that can be grown or produced domestically. Others focused on the practical issue of saving foreign exchange – arguing that greater backward linkages would reduce the pressure on the exchange rate.

Another group adopted a different approach to backward linkages, arguing that local content should be promoted because it would boost productivity – as one respondent put it, '*The only way you can have a cost advantage if you have things locally procured*.' This group saw local content as compatible with – indeed part of – the drive for greater export competitiveness and the efforts of the Presidential Enabling Business Environment Council. Interestingly, the reverse was also the case – that is, some respondents saw efforts to improve the business climate as likely to be particularly beneficial for SMEs, enabling them to participate as suppliers in global value chains and boosting local content. However, there was also disagreement as to whether Nigeria's source of comparative advantage was in manufacturing or services, with some arguing that manufacturing had been seen as a 'gateway to paradise' while key service exports had been neglected by comparison.

While all of these arguments have merit, they are not necessarily mutually compatible. Backward linkages driven by self-sufficiency would suggest a focus on food crops, such as current measures for rice, sugar, tomato paste and other commodities. If the motivation is saving foreign exchange, this would suggest a focus on the items that absorb most foreign exchange (fuel and cars). If the focus is export competitiveness, then this would suggest a focus on selected sub-sectors in which Nigeria has a clear comparative advantage (see te Velde et al (2016) for details). Current policy would appear to be designed to satisfy a mix of these agendas, but with a bias toward the first two.

The second issue, on which almost all officials commented, was that implementation is extremely challenging. Some pointed to the large gaps between ministers and civil servants, suggesting the problem was not with policy but with lack of capacity for effective implementation. For example, one pointed to the commitments firms have made on investments in backward linkages in return for protection and claimed that, '*A lot of things that they are supposed to, they haven't done*.' Others pointed to a lack of analysis of the pros and cons of alternative policies prior to announcement. As one respondent put it, '*At the point where we are, no one will come at it from a pros and cons [perspective]. You can't say you can't do local content. Especially coming out of the recent dollar scarcity*.' One gave the example of garri (a staple food made from cassava), which is being imported from India. Their view was that, instead of banning it, the imports should be a wake-up call on the need to boost local production and exports. Another argued, '*We need to understand why people are importing*,' stating that, '*There is analysis done on benefits and costs – but it is the ideology that carries the day*.'

Not all respondents believed there was a need for better policy analysis. One said the current economic situation meant the government did not have time to do detailed analysis, arguing that, '*If you are drowning, don't worry about the quality of sticks you are grabbing onto – better to do something not so well than wait to do the analysis to four decimal points and get a similar solution*.' Regardless of the analytical content of policy, there was general acknowledgement that, outside of the oil and gas sector, there was little or no performance monitoring on the local content policies applied. Other officials bemoaned the lack of policy instruments for promoting backward linkages. As one put it, '*The government attempts to use one bullet to solve a lot of different problems. E.g. tariffs to solve power, tariff to solve roads, tariffs to solve skills, etc.*'

In conclusion, the officials interviewed as part of this research were broadly supportive of the objectives of the government's local content policies but expressed concerns about capacity for implementation, the level of policy analysis and the lack of monitoring and performance management systems.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The government of Nigeria is pursuing a set of policies with the objective of boosting local content and deepening backward linkages in the country. Our review of international experience shows that such policies can be very beneficial if they have the effect of enhancing industrial capabilities and improving competitiveness. Nigeria's application of local content policies in the oil and gas sector has been criticised for being heavy-handed – but there is also evidence that it has enabled the participation of local firms in supplying services to the major oil companies in a way that may well not have happened in the absence of the policy. Buoyed by this apparent success, the government is attempting to implement a Made-in-Nigeria agenda across a number of other sectors.

However, the approach the government is taking is not always coherent about its objectives – fluctuating between a desire for food self-sufficiency, a wish to reduce the need for foreign exchange and a desire to boost international competitiveness. The first of these has resulted in heavy protection in a small number of food and agro-processing sectors, as well as industrial sectors such as cement and the automotive industry. This has undoubtedly increased investment in local production in these sectors and the number of jobs providing inputs. However, no calculations appear to have been made about the long-term impact of such policies on prices and consumers, and the impact of these costs on jobs in downstream sectors. It is therefore difficult to draw any clear conclusions about the success or failure of the government's backward integration policies, since it is not yet possible to compare the value added in upstream sectors with the potential for value subtraction in downstream ones.

What is clear is that government has, to date, struggled to implement some local content policies effectively. This may reflect a lack of capacity and resources, particularly given Nigeria's current difficult economic circumstances. Moreover, the high levels of informality in the Nigerian economy constitute an implementation challenge. The high protection and cumbersome procedures at borders, making cross-border smuggling a profitable activity, challenge the effectiveness of many of these policies.

Thus, while government-appointed councils and boards in different sectors have endeavoured to play a coordination and facilitation role, much of the focus has been on tariff policy (and, to an extent, concessionary finance); the practical implementation of local content investments has been left to the private sector. This may be entirely appropriate: as the economics of local content suggests, one of the key market failures during the process of industrialisation are 'coordination failures'. The private sector often has far greater capacity and resources than the public sector to coordinate the various investments and activities needed to create an effective supply chain.

However, leaving the bulk of the work to the private sector is risky. Such coordination is generally only possible when the number of private sector actors is very small: firm-led coordination of local content investments runs the risk of firms proposing policies to enhance their market power. There is therefore a trade-off between the greater capacity for policy implementation of lead firms and their interests in inclusive and competitive policies.

This also helps explain the wide variety of views expressed by firms about local content policies. While almost all were in favour of the principle, firms able to exercise control of the manner of implementation were strongly in favour of local content policies that bolstered their competitive position, whereas those with less access to the policy-making apparatus feared policies may be applied in an arbitrary or un-nuanced way to the detriment of their businesses.

In principle, the trade-off between capacity and interests can be addressed through careful policy analysis, transparency in implementation and independent performance monitoring linked to the support that government provides. However, as noted above, outside of the oil and gas sector, these elements

are the weakest components of the current local content policy environment. This makes the role of NESG, as well as other think-tanks, all the more important in shining a light on the effectiveness of current policies and proposing solutions that will ensure policies are designed and implemented in a way that maximises the benefit for all stakeholders.

At the same time as attempting to pursue backward linkages, the government is engaged in an ambitious programme of reform of the enabling business environment. This programme has made significant progress in a relatively short period in terms of amending and reshaping policies to reduce the costs of doing business in Nigeria. In principle, these cost reductions could also help SMEs engage more effectively in global value chains, boosting both local content and global competitiveness.

However, our respondents repeatedly highlighted that the most important costs of doing business were those associated with access to power, energy and land and quality of transport infrastructure. Reforms in these areas are likely to have a much more fundamental impact on the growth of the Nigerian economy than expenditure-switching policies such as attempts to boost local content.

Similarly, high on the agenda of many firms were the recent shortages of foreign exchange. The government's approach to this has been to ration access to foreign exchange from the CBN. However, the supply of foreign exchange is fundamentally driven by two prices: the price of oil and the exchange rate. As numerous respondents pointed out, the current low price of oil is an opportunity for Nigeria to make a decisive shift away from oil towards a non-oil economy – a structural change that is essential to its long-term growth and prosperity. This shift would be supported by a somewhat weaker currency, since this would encourage a shift of resources into tradeable (import substitutes and exports) rather than non-tradeable goods. Such a policy would also bolster efforts to boost local content, since firms would have a strong incentive both to increase backward linkages and to export. Instead, the government is relying primarily on tariff policy to increase the relative price of imports in selected sectors. While this undoubtedly influences investment in backward linkages in the chosen sectors, it also drives resources away from more dynamic and competitive export markets toward provision for the protected domestic market. It also encourages the usual array of unproductive behaviours associated with high tariffs, such as corruption and smuggling.

In conclusion, boosting backward linkages is one element of a broader programme of structural transformation being undertaken by the government. We present below a set of recommendations – based on our review of the literature and fieldwork – about how to improve local content policies in Nigeria. These will be much more effective if they are part of a coherent programme encompassing fundamental sector reform in energy, land and infrastructure, improvements to the business enabling environment and exchange rate and trade policies that encourage resources to flow to dynamic and competitive sectors of the economy.

5.2. Policy Implications

Don't try and make one size fit all

There are some sectors where it makes a lot of sense to deepen backward integration. There are others where it is not appropriate. Having a blanket policy that applies to all is not sensible. Backward integration policies must be nuanced by the circumstances of the sector. In particular, backward integration is appropriate where it is 'comparative advantage following' rather than 'comparative advantage denying' (Lin, 2011). In practical terms, this means that, after the various investments have been made, the level of costs should be lower than the cost of importing. If they are not, it does not make sense to do backward integration.

Do the maths

The government appears to evaluate backward integration on the basis of whether it creates jobs and boosts investment and value added in the sector. These measures are important, but this approach is incomplete, because it does not take into account the impact of local content policies on consumers. It is perfectly possible to find policies that boost investment and create jobs and that are value-subtracting at the national level because of their impact on consumers. These calculations can be done – and the

government should avoid forms of backward integration policy that provide long-term benefits for a sector or a handful of firms while imposing much higher costs on consumers.

Engage, facilitate and enforce commitments

Some backward integration policies have been put in place by means of legislation or regulatory fiat. These tend to be counterproductive. However, there is a positive role for the government as facilitator – bringing together key players in a sector to discuss the opportunities and challenges of backward integration and (after doing the maths) coming to a set of agreements about the investments that will be made and the benefits that will accrue. Once these are agreed, the government should hold the players to account and follow through on the policies, both rewarding and punishing depending on the actions taken.

Focus on fundamental improvements to the business climate

Many of the most important challenges to backward integration are, in fact, challenges to doing business in general. For example, numerous firms raised issues associated with access to land; poor infrastructure; power and energy; and the implementation of regulations. These are well-known problems with the business enabling environment. Tackling them effectively is essential not only to the success of backward integration but also to the growth of Nigeria's economy overall.

The results of our research suggest focusing attention on these four issues could significantly improve the delivery of stronger backward linkages while maintaining the improvements in global competitiveness needed to support Nigeria's structural economic transformation.

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ANNEX I: QUANTITATIVE ESTIMATES OF SCALE OF BACKWARD LINKAGES IN NIGERIA AND OTHER COUNTRIES

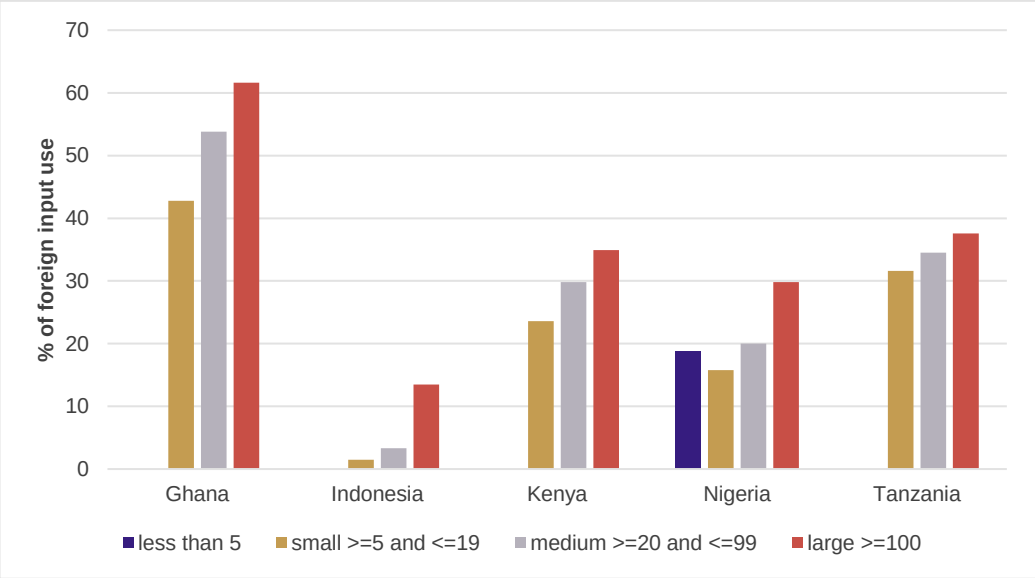
This section presents some analysis of the data available in Nigeria's 2014 World Bank Enterprise Survey (WBES). The WBES collects data on some key characteristics of firms in Nigeria. These include some elements relevant to our analysis, such as use of foreign and domestic inputs. We have also processed similar data for Ghana, Indonesia, Kenya and Tanzania. This helps us compare and contextualise the information available for Nigeria. The WBES collects data for manufacturing and services firms only. The agriculture sector is not covered, except through information associated with the production of food and beverages.

Unfortunately, these are the only data available for Nigeria that allow for the analysis of backward linkages. On the one hand, information in Nigeria's 2008 Social Accounting Matrix is too old and, based on analysis of the matrix, not very reliable. More recent supply tables are available for Nigeria, but these do not contain information on domestic transactions. On the other hand, it was impossible to obtain the Nigeria firm census. This information would have shed some needed light on the use of domestic and foreign inputs in production, identifying sources and products.

Figure A1 shows mean use of imported inputs by country and firm size, where firm size is measured by means of number of employees. We have also included the standard deviation in order to provide additional information about the use of foreign inputs. Clearly, the larger firms use imported inputs more intensively. However, there is large dispersion, particularly among the smaller firms, with many of them also using imported inputs very intensively.

When comparing across countries, firms in Ghana tend to be the heaviest users of imported inputs; firms in Indonesia make the least use of such inputs. Nigeria tends to be closer to Indonesia. However, while in Indonesia small firms use very few imported inputs, in Nigeria they tend to use substantially more. Consequently, compared with other countries, use of imported inputs varies less by size of firm.

Figure A1. Use of foreign inputs in product by firm size (% of total use of inputs)



Note: Data for Ghana, Kenya and Tanzania are for 2013, Nigeria for 2014 and Indonesia for 2015.
Source: Own elaboration based on WBES data.

Use of foreign inputs in production is also expected to present variability across sectors, with some sectors more inclined than others to be integrated upstream. Table A1 shows average use of imported inputs in production by sector. We have included the number of firms in each category so as to be able

to qualify the figures obtained. In general, sectors with higher levels of complexity show higher use of imported inputs in production. The electronics and auto and auto components sectors present high percentages of use of imported inputs. However, these figures are generated using a sample of only a small number of firms, which could bias some results.

As before, there are significant differences across countries, with Indonesia the lowest user of foreign inputs across sectors. However, the differences across sectors in each country remain. The services sector, in general, uses the same share of foreign inputs as textiles, leather and garments do.

Table A1. Use of foreign inputs in production by sector (% of total input use)

Sector	Measure	Ghana	Indonesia	Kenya	Nigeria	Tanzania
Textiles	Mean (%)	52.0	3.0	35.3	17.0	51.9
	No firms	5	109	37	32	27
Leather	Mean (%)	40.0	6.7	43.1	21.9	
	No firms	5	52	8	18	
Garments	Mean (%)	36.7	5.8	38.3	19.0	48.4
	No firms	24	167	12	82	48
Food	Mean (%)	22.1	5.5	19.8	15.5	23.3
	No firms	56	172	156	191	76
Metals and machinery	Mean (%)	62.6	15.1	36.9	13.8	35.8
	No firms	80	78	50	130	35
Electronics	Mean (%)	70.0	8.3	47.1	35.0	75.0
	No firms	6	6	11	2	7
Chemicals and pharmaceuticals	Mean (%)	51.3	10.8	41.8	35.2	43.3
	No firms	26	93	35	28	9
Wood and furniture	Mean (%)	24.6	3.6	12.5	21.6	20.3
	No firms	34	34	14	126	91
Non-metallic and plastic materials	Mean (%)	56.8	4.1	40.2	14.2	43.4
	No firms	45	281	22	145	24
Auto and auto components	Mean (%)	60.0	33.3	26.8		65.8
	No firms	2	3	21		6
Other manufacturing	Mean (%)				10.0	
	No firms				2	
Retail and wholesale trade	Mean (%)	90.0		39.3	28.0	
	No firms	3		7	67	
Hotels and restaurants	Mean (%)	67.3		34.6	18.3	45.0
	No firms	60		13	83	17
Other services	Mean (%)	13.5	5.7	36.3	20.2	15.4
	No firms	24	23	12	50	14
Other: Construction, transportation, etc.	Mean (%)	45.0		100.0	23.5	
	No firms	2		1	13	

Note: Data for Ghana, Kenya and Tanzania are for 2013, Nigeria for 2014 and Indonesia for 2015.
Source: Own elaboration based on WBES data.

In addition, use of foreign inputs may vary jointly by sector and size. For example, large firms in a sector may present higher use of foreign inputs than the same type of firms in a different sector. Table A2 presents mean use of imported inputs by sector and firm size in Nigeria. In general, the larger the firm the greater the use of imported inputs; however, there are some cases where this is not as clear. In the services sector (hotels and restaurants and retail and wholesale trade), for example, there seems to be a u-shaped relationship. However, in textiles, food and other light manufactures, there seems to be a positive relationship between firm size and use of foreign inputs.

Table A2. Use of imported inputs by size and sector in Nigeria (% of total use of inputs)

	Number of employees			
Sector	Less than 5	Small >=5 and <=19	Medium >=20 and <=99	Large >=100
Textiles	-	10.3	20.0	31.4
Leather		23.2		-
Garments	14.0	15.2	45.6	55.0
Food	-	11.1	17.9	26.5
Metals and machinery	-	15.2	10.6	20.0
Electronics				35.0
Chemicals and pharmaceuticals		20.0	48.8	31.4
Wood and furniture	25.0	20.1	19.0	53.3
Non-metallic and plastic materials	50.0	9.5	17.3	30.9
Other manufacturing				10.0
Retail and wholesale trade	57.1	24.6	22.5	29.2
Hotels and restaurants	3.7	20.0	18.4	18.6
Other services	-	17.6	25.7	39.0
Other: Construction, transportation, etc.	-	-	26.7	37.5

Source: Own elaboration based on WBES data.

The type of final demand may have important effects on upstream integration in value chains. In general, exporting firms are associated with higher use of foreign inputs, and this is frequently explained by the need to secure minimum levels of quality in inputs, not available domestically. In addition, firms that supply exporters, for similar reasons, tend to source more inputs from foreign sources. Table A3 shows average use of imported inputs depending on whether firms export directly or supply other exporters. In the first pane, exporter firms are compared across the rest of the firms (either supplying exporters or not). In the second pane, firms supplying exporters (but not exporting directly) are compared with those that supply the domestic market exclusively.

Exporters use more foreign inputs than non-exporters. In the case of Nigeria, on average, almost 39% of exporters' inputs are imported; this share is only 12% for the rest of the firms. Similar differences are seen in the rest of the countries. In addition, suppliers of exporters are associated with higher use of imported inputs. However, the differences are smaller than in the case of direct exporters. This suggests some relationship between use of imported inputs and supply to international value chains.

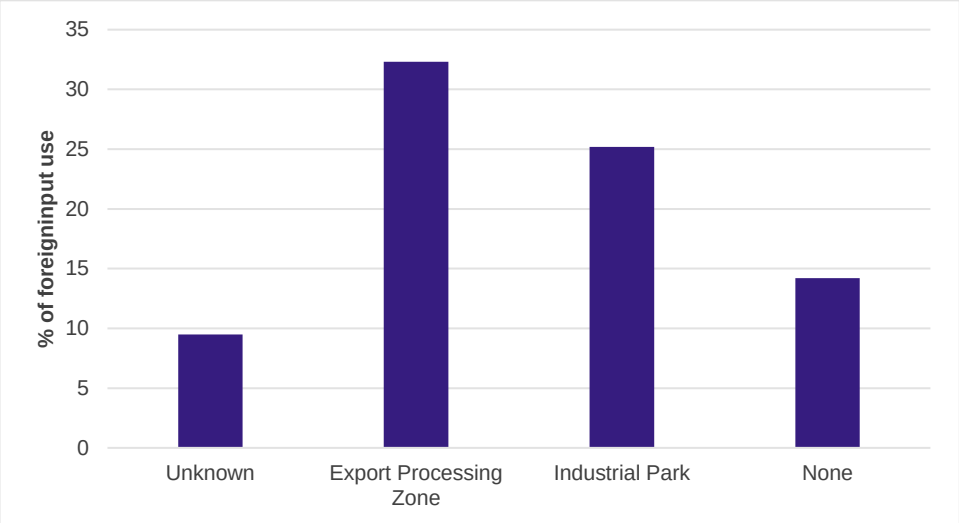
Whether the firm is located in an export processing zone (EPZ) or other type of industrial park is expected to affect the use of foreign inputs. In Nigeria (Figure A2), shares of imported inputs used by firms located in EPZs and industrial parks are 32% and 25%, respectively – higher than for those located elsewhere. Although no information is available for the other countries under comparison, even in EPZs, the values are particularly low.

Table A3. Use of foreign inputs by type of final demand (% of total use of inputs)

Does the firm export directly?						
		Ghana	Indonesia	Kenya	Nigeria	Tanzania
Firm does not export	Mean (%)	46.7	3.1	24.6	12.1	31.7
	No firms	331	908	252	729	289
Firm exports	Mean (%)	52.5	22.2	39.1	38.8	45.2
	No firms	40	157	142	189	45
Does the firm supply an exporter firm?						
		Ghana	Indonesia	Kenya	Nigeria	Tanzania
Firm does not supply an exporter firm	Mean (%)	45.4	2.9	23.6	11.3	30.0
	No firms	276	861	190	648	259
Firm supplies an exporter	Mean (%)	53.5	7.1	27.8	18.0	47.1
	No firms	55	47	62	81	29

Source: Own elaboration based on WBES data.
Note: Data for Ghana, Kenya and Tanzania are for 2013, Nigeria for 2014 and Indonesia for 2015.

Figure A2. Use of foreign inputs by location of firm in Nigeria (% of total input use)

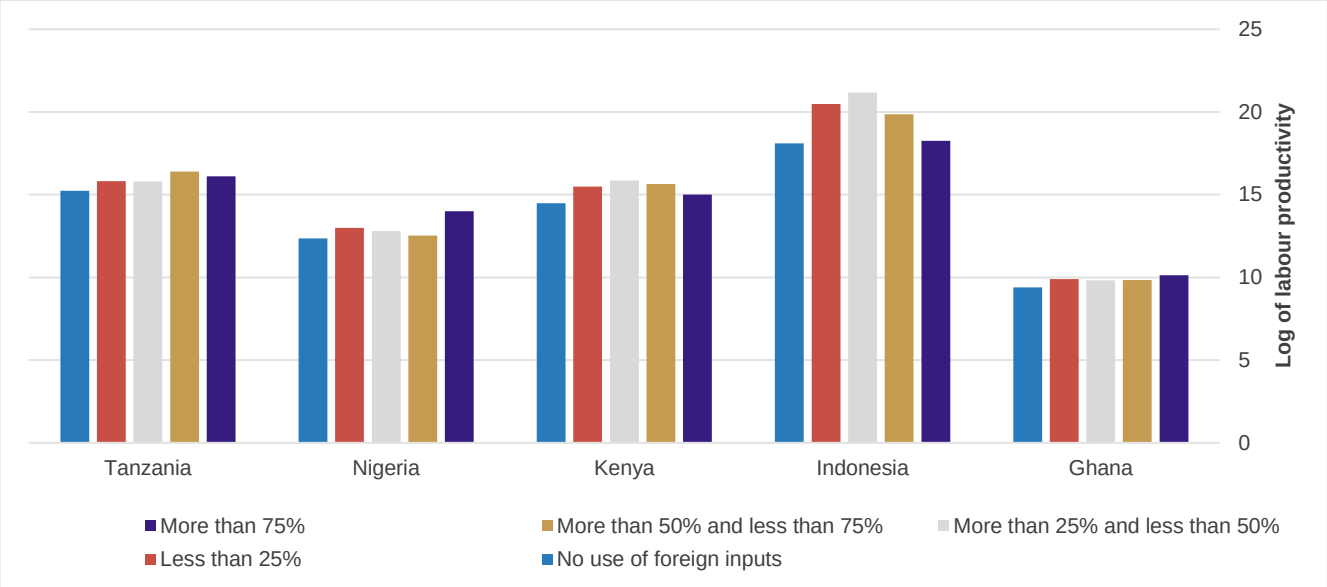


Note: Callout indicates the number of firms in each category in the sample
Source: Own elaboration based on WBES data.

The use of inputs from specific sources may have important effects on productivity. On the one hand, larger volumes of imported, good-quality capital goods may have important effects in raising the productivity of workers. On the other hand, higher-productivity firms tend to export (Melitz, 2003) and they tend to make greater use of imported inputs to secure minimum quality levels in their production.

Figure A3 shows average labour productivity by intensity of use of imported inputs. Productivity is calculated as the value added per permanent worker (in logs). Ghana, Nigeria and Tanzania show a positive relationship between use of foreign inputs and labour productivity. In the case of Nigeria, this relationship is stronger among those firms that make extensive use of imported inputs. Kenya and Indonesia, on the other hand, present an inverted u-shaped relationship, where productivity tends to increase with the use of foreign inputs but then decreases as this reaches high values. However, labour productivity is lowest among those firms that do not make use of imported inputs.

Figure A3. Labour productivity by use of foreign inputs

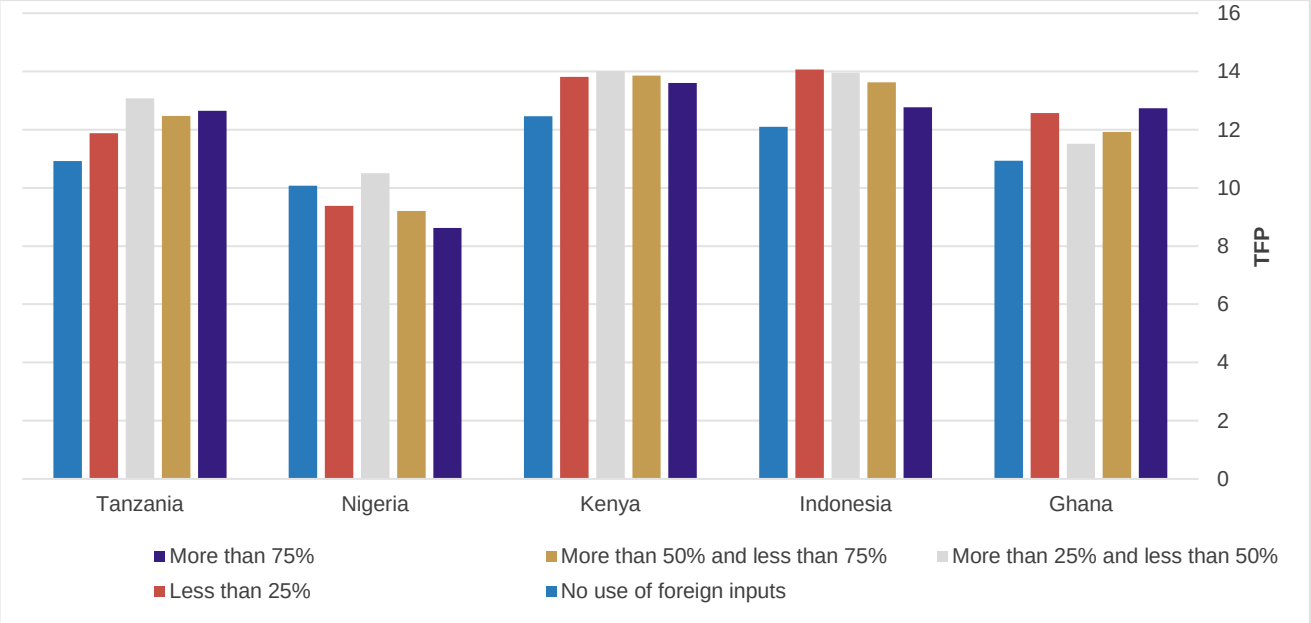


Source: Own elaboration based on WBES data.
Note: Data for Ghana, Kenya and Tanzania are for 2013, Nigeria for 2014 and Indonesia for 2015.

A more comprehensive approach to productivity can be obtained by calculating total factor productivity (TFP). This requires calculation of the difference between the value added per firm and, through statistical inference, the part explained using labour and capital. Figure A4 presents the unexplained part or TFP by use of foreign inputs.

While the relationship between productivity and use of foreign inputs for Ghana and Tanzania continues to be positive, and that for Kenya and Indonesia displays an inverted u-shape, Nigeria seems to be located in an intermediate position between these two patterns. In general, maximum productivity is reached in cases where firms use imported inputs rather than limiting their choice to domestic suppliers. However, some care is required in the interpretation of these results, as it was possible to calculate TFP only for a limited number of firms. For example, it was possible to calculate the TFP for only four firms in Nigeria, and more than 75% of their inputs are imported.

Figure A4. Total factor productivity by use of foreign inputs



Source: Own elaboration and calculations based on WBES data.

ANNEX II: THE LEGAL AND REGULATORY FRAMEWORK FOR LOCAL CONTENT IN NIGERIA

Local content legislation and regulations in Nigeria can be split into two areas. For oil and gas, a considerable amount of effort has been put into crafting and implementing legislation that drives local content. We therefore review the provisions of the Nigerian Oil and Gas Industry Content Development Act 2010 (henceforth the Local Content Act) and then describe existing evidence about the way in which it has been implemented in practice, as well as views from interviews with industry stakeholders about its strengths and weaknesses.

Outside of the oil and gas sector, there has been no systematic attempt to introduce legislation. However, in a variety of sectors there have been initiatives aimed at increasing local content, such as in the auto industry, cement and sugar. In addition, there are provisions in other pieces of legislation that also have the intention of increasing local content. We briefly review these.

Local content in the oil and gas sector

Prior to 2000, Nigeria attempted to introduce policies to deepen backward linkages in the economy by means of informal approaches. For example, in the oil and gas industry, under the Joint Venture Agreement, operators were required to give preference to contractors incorporated under the laws of Nigeria to the maximum extent possible as long as there was no significant difference in price or quality between such contractors and others. The NNPC and its contractors also aspired to maximise local content in all areas of petroleum operations. However, these policies were neither statutory nor regulatory, but rather contractual in nature.

Stakeholders in the oil and gas industry in Nigeria came together in the year 2000 to develop a roadmap for deepening local content in the sector through the Local Content Bill. This led to the passing of the Local Content Act in 2010. The Act intended to increase the participation of indigenous resources domiciled in Nigeria in producing goods and services in the country (Ellis, 2008; Chikezie, 2010). It takes precedence over all other existing engagements and laws pertaining to Nigerian content in the oil and gas industry and across other sectors of the economy. Local content is defined as ‘the quantum of composite value added to or created in the Nigerian economy by a systematic development of capacity and capabilities through the deliberate utilization of Nigerian human, material resources, and services in the Nigerian oil and gas industry’ (Ademola and Adeolu, 2011). The Act requires companies to submit a Nigerian Content Plan as an essential component of bidding for any licence, permit or interest in the oil and gas industry.

The Nigerian Oil and Gas Content Development Act 2010

The core of the Act (Government of Nigeria, 2010) is reflected in Section 3(1) on the award of oil blocks, field licences and lifting licences (Agbakoba, 2014). This section stipulates that ‘First consideration should be given to Nigerian independent operators, subject to the fulfillment of certain conditions as may be specified by the Minister’. Operators are required to submit a Nigerian Content Plan (Section 7) to the NCDMB, which must be approved. They must also submit a report to the NCDMB a Nigerian Content Performance Report, detailing their compliance with the Act (Sections 60 and 62).

All operators must operate a price premium of 10% towards local suppliers so that procurement is not based purely on price but also on the extent of local content (Sections 14, 15, 16). Section 104 sets up a Nigerian Content Development Fund for funding Nigerian content development, paid for by a 1% deduction from every contract and managed by the NCDMB.

International or multinational companies working through their Nigerian subsidiaries must demonstrate that a minimum of 50% of the equipment deployed for the work is owned by the Nigerian subsidiaries (Section 41(2)). A maximum of 5% of management positions may be held by expatriates (Section 32) and a succession plan must be put in place (Section 31(1)).

The Act also specifies specific activities that must use local suppliers. For example, fabrication and welding must be done in Nigeria (Section 53). Similarly, all insurance, legal and financial services must use Nigerian suppliers unless the NCDMB allows an explicit exception (Sections 49, 50, 51 and 52).

Table A4 presents the key provisions of the Local Content Act (see also KPMG, 2010).

Table A4. Some key provisions of the Local Content Act 2010

Requirement	Section	Description of requirement
Priority of Nigerian operators	3	Consideration should be given to Nigerian independent operators, subject to fulfilment of certain conditions as may be specified by the minister.
Nigerian Content Plan	7	In the bidding for any licence, permit or interest and before carrying out any project in the oil and gas industry, an operator shall submit a Nigerian Content Plan ('the Plan') to the NCDMB demonstrating compliance with the Nigerian content requirements of this Act.
Price premium	14	All operators and project promoters shall consider Nigerian content when evaluating any bids where the bids are within 10% of each other at commercial stage and the bid containing the highest level of Nigerian content shall be selected provided the Nigerian content in the selected bid is at least 5% higher than its closest competitor.
Nigerian Content Development Fund	104(1) (2)	A fund to be known as the Nigerian Content Development Fund ('the Fund') is established for the purposes of funding implementation of Nigerian content development in the Nigerian oil and gas industry. The sum of 1% of every contract awarded to any operator, contractor, subcontractor, alliance partner or any other entity involved in any project, operation, activity or transition in the upstream sector of the Nigerian oil and gas industry shall be deducted at source and paid into the Fund.
Fabrication and welding	53	As from the commencement of this Act, all operators, project promoters, contractors and any other entity engaged in the Nigerian oil and gas industry shall carry out all fabrication and welding activities in the country.
Ownership of assets by subsidiaries of multinational companies	41(2)	International or multinational companies working through their Nigerian subsidiaries shall demonstrate that a minimum of 50% of the equipment deployed for execution of work is owned by the Nigerian subsidiaries.
Expatriate quota	31(1) 32	For each of its operations, the operator shall submit to the NCDMB a succession plan for any position not held by Nigerians and the plan shall provide for Nigerians to understudy each incumbent expatriate for a maximum period of four years and at the end of the four years the position shall become Nigerianised. For each of its operations, an operator or projector promoter may retain a maximum of 5% of management positions as may be approved by the NCDMB as expatriate positions to take care of investor interests.

Requirement	Section	Description of requirement
Finance, legal and insurance requirements	49(1)	All operators, project promoters, alliance partners and Nigerian indigenous companies engaged in any form of business, operations or contract in the Nigerian oil and gas industry shall insure all insurable risks related to its oil and gas business, operations or contracts with an insurance company, through an insurance broker registered in Nigeria under the provisions of Insurance Act as amended.
	49(2)	Each operator in subsection (1) of this section shall submit to the NCDMB a list of all insurance companies and insurance brokers through which insurance covers were obtained in the past six months, the class of insurance cover obtained and the expenditures made by the operator.
	50	No insurance risk in the Nigerian oil and gas industry shall be placed offshore without the written approval of the Nigerian Insurance Commission, which shall ensure Nigerian local capacity has been fully exhausted.
	51(1)	All operators, contractors and other entities engaged in any operation, business or transaction in the Nigerian oil and gas industry requiring legal services shall retain only the services of a Nigerian legal practitioners or a firm of Nigerian legal practitioners whose office is located in any part of Nigeria.
	52(1)	All operators, contractors and any other entity engaged in any operation, business or transaction in the Nigerian oil and gas industry requiring financial services shall retain only the services of Nigerian financial institutions or organisations, except where, to the satisfaction of the NCDMB, this is impracticable.
Nigerian Content Performance Report	60	Within 60 days of the beginning of the year, each operator shall report submit a report to the NCDMB their annual Nigerian Content Performance Report covering all its projects and activities for the year under review.
	62	The NCDMB shall undertake regular assessment and verification of the Nigerian Content Performance Report filed by all the operators in compliance with the provisions of this Act as may be considered appropriate by the NCDMB.

Source: Adapted from Government of Nigeria (2010).

Implementation of the Local Content Act 2010

The NCDMB was established by the Nigerian Local Content Act to monitor and enforce the implementation of the provisions of the Act. Specifically, it is empowered to:

1. Interface with Nigerian content departments of operators to develop Nigerian Content Plans;
2. Ensure the requirements of NOGICD Act 2010 are inserted in draft pre-qualification adverts and invitations to tender before they are issued;
3. Ensure that bidders make required documented commitments in line with the provisions of the Local Content Act, during prequalification, technical and commercial evaluations.
4. Issue a Nigerian Content Compliance Certificate to accompany contract award recommendations;
5. Participate in site visits to confirm in-country capacities and capabilities.

As noted in the literature review, there have been several studies on implementation of the Local Content Act since it has come into operation, and there is an emerging evidence base on its impact. Overall, the evidence suggests that, between 2010 and 2015, the Act and its implementation were successful in terms of significantly increasing the level of local content in the industry. One of the most recent studies – Johannisson (2017) – shows that, between 2010 and 2015, linkages from the oil and gas sector significantly expanded and deepened into fabrication and engineering in Nigeria, and Nigerian ownership of marine vessels and companies in the sector increased. Johannisson attributes this to the nature of the

political settlement, which ensured competent and effective management of the NCDMB during this period.

Interviews conducted as part of this research came to the same conclusion. For example, some local operators argued that local participation had increased dramatically as a consequence of the Local Content Act and its rigorous enforcement by the NCDMB. For example, one of the local companies interviewed has executed contracts of more than $1.5 million for the fabrication of parts for sub-sea structures in conjunction with partners in the US for a major international oil company over the past two years. The company attributes this to the Local Content Act, which mandates oil companies to use indigenous service/product suppliers. Had this not been in place, the company was convinced that the oil company would have simply contracted the work to one of their other international suppliers with which they already had a close relationship.

However, not all stakeholders share a positive view of the impact of the Act. Another indigenous oil company alleged that foreign companies were effectively barred from carrying out work even when local companies did not have the technical capacity. This allegedly drives local firms to try and circumvent the legislation by using a dormant local firm as the vehicle through which international companies operate. Moreover, an official from one multinational oil company felt that local content policy held very few benefits, if any, for Nigeria's oil and gas industry because, in some areas, Nigeria lacks the local capacity and technology to perform the work required.

Local content in other sectors

As noted above, there has been a range of initiatives aimed at increasing local content in other sectors. For example, local content policy in the auto industry is embodied in the Nigerian Automotive Industrial Development Plan, introduced in 2013 and intended to be in application for an initial period of 10 years. In sugar manufacturing, local content drive is being propelled by the Nigerian Sugar Master Plan, developed in 2008. A Backward Integration Policy (BIP), introduced in 2000, set the pace for local content development in the cement industry, driving local content utilisation to 95% as at 2011 (Pan African Capital Plc, 2011). There are indications that the present government intends to introduce local policy regulations across various sectors, especially in agriculture and manufacturing.

However, from a legislative perspective there are only a few pieces of legislation outside the oil and gas sector that explicitly refer to local content. The most prominent of these are the Cabotage Act 2003, the Procurement Act 2016 (and the recent Executive Order on government procurement) and the recent Guidelines on IT procurement.

Cabotage Act 2003

The Coastal and Inland Shipping (Cabotage) Act 2003, which became operational in April 2004, guides vessel operations in Nigerian inland waters and was enacted to encourage local companies to participate in the shipping business, to develop capacity and to provide employment for Nigerian seafarers. The Act was envisaged to lead development of the domestic maritime fleet, enhance the optimal exploitation of under-utilised facilities and encourage development of the infrastructure and technical capacity required for the growth of Nigeria's inland waterways, transport and haulage systems.

Procurement Act 2016

The Procurement Act 2016 specifies that procuring entities should grant a margin of preference to domestic bidders when compared with tenders from foreign bidders and provide information about the basis of any such margin. Moreover, the recent Executive Order issued by the Presidential Enabling Business Environment Council 'On support for local content in public procurement by the Federal Government' (Government of Nigeria, 2017) requires the federal government to ensure a minimum of 40% local content in purchases in several sectors (see Pierson, 2017).

IT provisions and procurement

Local content regulations are also in place for ICT purchases. The Office for Nigerian Content Development in Information & Communication Technology was established under the NITDA Act 2007.

This has recently issued Guidelines for Nigerian Content Development in Information and Communication Technology (NITDA, 2017). These guidelines have three core focus areas: driving indigenous innovation, developing the local ICT industry and establishing Intellectual Property regulation and protection standards. Within each of these areas, there are strategic goals and specific indicators by means of which progress will be measured. Among the numerous specific requirements of the Guidelines is a requirement for original equipment manufacturers to carry out all assembly within Nigeria and to work toward 50% local content within a three-year period.

Table A5. Summary of non-oil and gas legislative provisions for local content

Act	Section	Provisions
Cabotage Act 2003	3 9	A vessel other than a vessel wholly owned and manned by a Nigerian citizen, built and registered in Nigeria, shall not engage in the domestic coastal carriage of cargo and passengers within the coastal, territorial, inland waters, island or any point within the waters of the Exclusive Economic Zone of Nigeria. The minister may on the receipt of an application grant a waiver to a duly registered vessel on the requirement for a vessel under this Act to be wholly owned by Nigerian citizens where he is satisfied that there is no wholly Nigerian owned vessel that is suitable and available to provide the services or perform the activity described in the application.
Procurement Act 2016	19	**Domestic preferences** (1) A procuring entity shall grant a margin of preference in the evaluation of tenders, when comparing tenders from domestic bidders with those from foreign bidders or when comparing tenders from domestic suppliers offering goods manufactured locally with those offering goods manufactured abroad. (2) Where a procuring entity has allowed domestic preferences, the bidding documents shall clearly indicate any preference to be granted to domestic suppliers and contractors and the information required to establish the eligibility of a bid for such preference.
Guidelines for Nigerian Content Development in Information & Communication Technology 2017 (under the NITDA Act 2007)		Sets strategic goals and indicators for performance for: • Driving indigenous innovation; • Developing the local ICT industry; and • Establishing Intellectual Property regulation and protection standards. Includes a requirement for original equipment manufacturers to carry out all assembly within Nigeria and to work toward 50% local content within a three-year period.

Source: Adapted from NITDA (2017).