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There is a need for exploration work obligations to be based on informed assessments of prospectivity, economic potential and the national strategy for building knowledge on petroleum resources. Excessive work obligations are costly; in particular, an obligation to drill a well with a negative outcome nearly assured is a significant waste of money. The cost is carried by the licensee, but government cannot expect to fully escape the economic consequence of such imposed waste, as other prospective licensees will observe what is happening and be influenced in their assessment of the country as an attractive exploration venue. Depending on the fiscal system, there may also be more direct fiscal consequences of unsuccessful exploration, in the form of tax deductions.

## Local content obligations

Countries that have petroleum resources usually harbor ambitions for their own workforce and businesses to participate in the petroleum sector as employees and suppliers, and to acquire the relevant technologies and capabilities. It is seen as a way of increasing and widening the benefits that a country can have from petroleum, building industrial capacity, creating job opportunities and generally stimulating economic and social growth. Such ambitions are often expressed as part of petroleum policy, in some countries also in a separate policy document addressing the issue of national engagement in the sector. The issue is often labelled as “local content” or “national content.”

### National policies and strategies for local content

Trinidad and Tobago (2004) and Ghana (2010) are examples of countries having issued policies for local content as formal documents. National policies are followed up by legislation, contract provisions and programs designed to increase the participation of nationals in the sector. This inevitably entails obligations and expectations of resource firms.

While the general idea of engaging personnel and businesses of the host nation in petroleum sector work has gained wide acceptance, there are different views of what local content really means and how it should be promoted. It is sometimes linked to the nationality of firms contracted as suppliers to petroleum operations. The problem with this became evident as the author visited the office of an international oil company in a low-income African nation. In the parking lot were five new, large sports utility vehicles of American brand. They had certainly not been manufactured in that country. The company representative nevertheless touted the vehicles as part of “local content,” because the company had bought them through a local dealer. Excessive focus on the nationality of involved firms can create misleading impressions and wasted opportunities for valuable and substantial local content advances. The nationality of firms is

anyway an elusive issue in the age of global businesses and international capital movements.

Farouk Al-Kasim has proposed the following definition: *Local Content is income received by locals in return for their contribution to petroleum operations.*<sup>1</sup> The focus here is on value creation, not contracts. It implies that when an international supplier firm to the petroleum industry establishes a base in a host country and employs local personnel to serve petroleum operations from there, then the work by those local personnel is also local content. It would not have been if the definition of local content were based on the nationality of the supplier firm. Al-Kasim's definition of local content can be linked to national accounting and the computation of gross national income (GNI): The portion of expenditures on petroleum operations that become part of the host nation's GNI is local content. It comprises all income earned by nationals from their contribution of labor, land and capital to petroleum operations.

The issue of local activities by international firms is important due to the globalized nature of much of the petroleum sector supplier industries. The likes of Halliburton, Schlumberger, the large drilling contractors and geophysical companies have built competencies and capital assets that can be effectively deployed on a global scope of business, not limited to certain nations. The forefronts of technological and operational standards are held by firms that operate globally, and they are not inclined to give up their most valuable resources. Insistence that firms supplying the petroleum sector should be locally owned risks shutting the nation's petroleum sector off from state-of-the-art technologies and standards, which can have adverse implications for operational effectiveness and safety. Arrangements of required joint ventures between local and international firms are sometimes imposed to promote local content, but given the fundamental interest of international, high-competence supplier firms, such joint ventures risk becoming artefacts where form prevails over substance. In spite of all this, there is scope for local content even in segments of the supplier industries that are dominated by international firms. It can be achieved by encouraging the international firms to establish a substantial presence in the country, employing and training locals, buying from local firms, with or without a local joint venture partner.

Governments use a variety of strategies to promote local content. The most constructive and least intrusive strategies, from resource firms' perspective, entail building capacity in the economy for contributing to petroleum sector work. This includes educational and vocational training programs designed to meet the needs for qualified personnel in the sector; infrastructure, industrial zones suited to activities serving the petroleum sector, enhancing "ease of doing business" qualities and generally enhancing the country as a competitive business location.<sup>2</sup> Such strategies, if successful, should cause more activities in support of petroleum operations to be carried out in the country and by nationals.

A national oil company can have a role in local content strategy. It can be instructed (and may be inclined anyway) to hire locals and engage with local

suppliers, possibly in long-term programs for developing local suppliers' capabilities. This may to some extent also apply to non-state indigenous companies.

Other strategies for local content entail obligations on resource firms, including those coming from outside the country. Such obligations may be stated in legislation or in petroleum agreements. The obligations generally concern three aims:

- Larger role for nationals as employees of the resource firms;
- Capacity building with national authorities and national oil company;
- Increased procurement of locally made goods and services.

The obligations can be hard or soft, i.e., setting quantified requirements or taking a more procedural and qualitative approach. This may have an impact on how authorities and firms interact on local content issues. The interaction can be mainly co-operative, with emphasis on seeking workable solutions together, or more adversarial with emphasis on quantified obligations, monitoring and possibly sanctions. In addition to obligations directly addressing the aims listed in the bullet points above, there may be procedural obligations, such as requirements for firms to submit plans for local content for approval by authorities.

## Legislation of local content obligations

Brazil, Nigeria and Ghana are examples of countries that have legislated strict and specific requirements for local content. The Nigerian Oil and Gas Industry Content Development Act from 2010 defines Nigerian Content as the quantum of composite value added to or created in the Nigerian economy—not very different from Al-Kasim's definition referred to earlier. Prior to this legislation, Nigeria had, as a nation, largely failed to achieve significant national content despite having been an oil producer since the 1950s, with Nigerian content estimated at 2%-5%.

The Nigerian Act provides that companies in the industry shall employ only Nigerians in junior and intermediate positions, and not more than 5% non-Nigerians in managerial positions. It requires 1% of the value of all supplier contracts be paid into a Nigerian Content Development Fund, to be managed by a state board and used for programs to enhance Nigerian Content. The Act sets minimum required levels of Nigerian content for 277 different items of equipment and services used in petroleum operations, some of which are shown as examples in Table 11-1. The text of the Act specifying the requirement is shown in Box 11-2. It provides that the required levels of national content are applied from the commencement of the Act, but that the Minister might grant exemptions for up to 3 years from that time.

## Box 11-2 Minimum and specification of Nigerian content

### *Article 11 of the Nigerian Oil and Gas Industry Content Development Act, 2010*

- (1) As from the commencement of this Act, the minimum Nigerian content in any project to be executed in the Nigerian oil and gas industry shall be consistent with the level set in Schedule to this Act.
- (2) Where a project description is not specified in the Schedule to this Act, the Board shall set the minimum content level for that project or project item pending the inclusion of the minimum content level for that project or project item through an amendment of the Schedule to this Act by the National Assembly.
- (3) All operators, alliance partners and contractors shall comply with the minimum Schedule Nigerian content for particular project item, service or product specification set out in the schedule to this Act.
- (4) Notwithstanding the provisions of subsection (1) of this section, where there is Schedule inadequate capacity to any of the targets in the Schedule to this Act, the Minister may authorize the continued importation of the relevant items and such approval by the Minister shall not exceed 3 years from the commencement of this Act.

**Table 11.1.** Required Nigerian Content, category of Well and Drilling services/Petroleum Technology. *Extract from the Schedule to the Nigerian Oil and Gas Industry Content Development Act, 2010.*

<b>WELL AND DRILLING SERVICES/PETROLEUM TECHNOLOGY</b>	
Reservoir services	75% Spend
Well completion services (permanent gauges and intelligent wells)	80% Spend
Wire line services (electric open holes, electric cased hole, slickline)	45% Spend
Logging White Drilling (LWP) services	75% Man Hour
Measurement While Drilling (MWD) (direction and inclination/ Gamma ray)	90% Man Hour
Production drilling service	85% Man Hour
Performance Services (T and P)	90% Man Hour
2D Seismic data acquisition services	85% length
Well Overhauling/Stimulation Services	80% Man Hour
Wellhead Services	100% Man Hour
Directional Surveying Services	100% Man hour
Cutting Injections/Cutting Disposal Services	100% Man Hour
Recutting Inspection Services	85% Man Hour
Cased Hole logging Services (Gyro, Perforation, Ganges, Gyro, PLT, Perforation, PLT, Ganges)	90% Man Hour
Well Watch Services	70% Man Hour
Cement service	75% Man Hour

**WELL AND DRILLING SERVICES/PETROLEUM TECHNOLOGY**

Coiled Tubing Services	75% Man Hour
Pumping Services	95% Man Hour
Fluid/Bottom Hole Sampling Services	80% Man Hour
OCXS Services (Cleaning, hardbanding, recutting, rethreading, storage)	95% Man Hour
Well Crisis Management Services	90% Man Hour
Directional Drilling Services	90% Man Hour
Other Drilling Services	80% Man Hour
Petrophysical interpretation Services	75% Volume/ Man Hour
Extended Wall Test/Early Production Services including provision of Floating or Jackup Production Unit	50% Man Hour
Provision of all Catering, Cleaning, Office and; Security Service at location/ Platform	80% Man Hour
Rental of Drill Pipe	75% Man Hour
Electric Open Hole	45% Man Hour
Electric ceased Holes	100% Man Hour
Slickline	100% Man Hour
Well head Safety panels	100% Man Hour
Chemical: Drilling, process, Maintenance	90% Man Hour

The three years for which the Minister could approve continued imports in excess of the percentages resulting from the Schedule of the Act was criticized at the time for being an unrealistically short period, because the country lacked the facilities required.<sup>3</sup> One might add that this kind of local content requirement, specified as percentages for 277 different items, represents a significant degree of political micro-management of the industry, is clearly protectionist and is at odds with the global nature of key segments of the supplier industries. Notwithstanding the criticisms that can be raised against it, the industry and authorities in Nigeria have somehow coped with the Act, and oil continues to be produced there. Two years after the introduction of the Act, the executive secretary of the Nigerian Content Development and Monitoring Board assessed the Nigerian content attained as being between 12% and 18%, higher than the 2%-5% before legislation of the Act, but much lower than the requirements set for most items in the Act (including those shown in Table 11.1).<sup>4</sup>

Ghana has also set minimum local content for a large number of equipment and service items in its Petroleum (Local Content and Local Participation) Regulations, 2013. Ghana's regulation has differentiated between the minimum portions of local content applicable from the start of each license or petroleum agreement and the higher portions applicable after 5 and 10 years. It allows the Minister to vary the percentages of minimum required local content.

### **Box 11-3 Provisions for training of local employees and plan in Angolan model PSA**

#### ***(Excerpts from Article 36; translated version)***

2. In planned, systematic and various ways and in accordance with the provisions of this Article, Contractor Group shall train all its Angolan personnel directly or indirectly involved in the Petroleum Operations for the purpose of improving their knowledge and professional qualification in order that the Angolan personnel gradually reach the level of knowledge and professional qualification held by the Contractor Group's foreign workers. Such training shall also include the transfer of the knowledge of petroleum technology and the necessary management experience so as to enable the Angolan personnel to use the most advanced and appropriate technology in use in the Petroleum Operations, including proprietary and patented technology, "know how" and other confidential technology, to the extent permitted by applicable laws and agreements, subject to appropriate confidentiality agreements.

4. Besides other duties provided for in the Law, the recruitment, integration and training of Contractor Group's Angolan personnel shall be included in three-year plans. In this respect, the Contractor Group undertakes, notably, to:

- (a) prepare a draft of the initial plan and submit it to Sonangol within four (4) Months of the Effective Date;
- (b) prepare a proposal for implementation of the plan and submit it to Sonangol within one (1) Month of the approval of such plan by the Ministry of Petroleum;
- (c) implement the approved plan in accordance with the directives of the Ministry of Petroleum and Sonangol, Contractor Group being able, in this regard and with the approval of Sonangol, to contract outside specialists.

5. Contractor Group agrees to require in its contracts with subcontractors who work for Contractor Group for a period of more than one (1) Year, compliance with requirements for the training of work crews, to which requirements such subcontractors are subject by operation of current law. Contractor Group further agrees to monitor compliance with the aforementioned obligations.

6. Contractor Group shall be responsible for the training costs of Angolan personnel it employs, such costs being recovered as Production Expenditures. Costs incurred by Contractor Group for training programs for Sonangol personnel will be borne in a manner to be agreed upon by Sonangol and Contractor Group.

## Local content obligations by agreement: Preferences to local personnel and suppliers

Additional to the legislated obligations for local content, obligations for similar purposes are often found in petroleum agreements.

Brazil, a country noted for quite challenging local content rules, has included such rules in legislation as well as in petroleum agreements. Some Brazilian concession agreements, depending on when they were made, contain comprehensive and specific rules on local content. More recent licensing rounds, such as the 14<sup>th</sup> bidding round in 2017, had simplified and less stringent local content rules compared to earlier bidding rounds.<sup>5</sup>

In other countries, the agreed provisions for local content are usually less stringent than the legislated ones referred to in the previous sub-section, especially in agreements that are older than the legislation.

Provisions in Angola’s model PSA for training local employees are shown in Box 11-3. Certain other PSAs in addition require preferential treatment of nationals for positions in the contractor’s organizations, sometimes with percentages of positions in various categories to be filled by national employees.

### Box 11-4 Provisions for preference for local goods and services in Kenya’s model PSA (*Article 31*)

(1) The contractor, its contractors and sub-contractors shall give preference to Kenyan materials and supplies for use in petroleum operations as long as their prices, quantities and timeliness of delivery are comparable with the prices, quality, quantities and timeliness of delivery of non-Kenyan materials and supplies.

(2) The contractor, its contractors and sub-contractors shall give preference to Kenyan contractors for services connected with petroleum operations as long as their prices, performance and timeliness are comparable with the prices, performance and timeliness of non-Kenyan service contractors.

(3) The contractor, its contractors and sub-contractors shall provide supplies and services from bases in Kenya where practicable.

(4) The contractor shall -

(a) on or before the beginning of each calendar year to which it applies, submit to the Minister a tentative schedule of the contemplated service and supply contracts with an estimated value exceeding the equivalent of . . . . . U.S. dollars per contract, to be let during the forthcoming calendar year, showing the anticipated tender date and approximate value and the goods and services to be provided;

(b) for contracts with an estimated value exceeding the equivalent of . . . . . U.S. dollars per contract, undertake to select its contractors and sub-contractors from adequately qualified companies by means of

- competitive bidding or by another appropriate method in accordance with good international petroleum industry practice;
- (c) as soon as practicable after their execution, provide to the Minister a copy of each contract, requiring a payment in a currency other than Kenya Shillings and a brief description of the efforts made to find a Kenyan supplier or service contractor;
  - (d) the minimum amount specified under this sub-clause 31 (4) may be changed from time to time by mutual agreement.

Preferences for local procurements are also a common feature of PSAs. An example from Kenya's model agreement is shown in Box 11-4. The provisions in the Kenyan example are less stringent than those found in many other contracts. Other contracts may stipulate that procurements shall be made from local suppliers as long as the price is within a certain percentage, for example 10%, of the lowest bid, subject to comparable and acceptable quality and availability. The terms "Kenyan materials and supplies" and "Kenyan contractors" are not defined, leaving room for ambiguity. The procedural provisions, sub-clause (4) in the Kenyan example, are more elaborate in some other PSAs, with requirements designed to ensure that local suppliers are not unduly disadvantaged due to the scope and form of bidding requirements. This clause in the Kenyan model PSA is followed by a clause 32 on exports and imports, which explicitly permits the contractor to import such goods as he may require for the petroleum operations.

## Training of state personnel

Many petroleum agreements require that the contractor shall provide training for personnel of the petroleum authority or other state institutions, including the national oil company. Box 11-5 shows an example of such a provision from Morocco's model petroleum agreement. "PETCO" is here a generic contractor, and "ONHYM" is the petroleum authority. In this case and many others, the training obligation is stated as a USD amount, which can presumably be used to attend courses. In other cases, there may be provisions for a limited number of personnel of the national institution to spend some time working in the contractor's organization, as a more hands-on and experience-based form of training. This is probably more relevant for personnel of the national oil company than for authorities' personnel.

### **Box 11-5 Provisions for training of petroleum authority staff in Morocco's model petroleum agreement**

9.1 PETCO shall contribute to the training of ONHYM's staff and technicians up to ..... US Dollars (US \$ ..... ) for each twelve (12) Month period during the entire duration of this Agreement. The annual contribution to training shall be increased by ..... US Dollars (US \$ .....) each time an Exploitation Concession is granted. The training programs and the method and schedule of payment of these contributions shall be established by agreement between the Parties, and shall include the costs of all training organized by PETCO on behalf of the personnel of ONHYM.

If PETCO is going to retire from this Agreement, PETCO must complete any training program already in progress and shall not be required to contribute to training programs other than that already in progress. Moreover, it is agreed that the accumulated outstanding amounts of the annual training budgets will be paid by the PETCO to ONHYM in accordance with and on written request from ONHYM.

9.2 Pursuant to Article 47 of the Law, all training expenses incurred by PETCO in accordance with Article 9.1 of this Agreement shall be considered as costs of exploration or exploitation in relation to the Exploration Permit(s) or Exploitation Concession(s), as the case may be.

## **Domestic supply obligation**

It is common for petroleum agreements to contain a provision requiring the contractor to sell some or all of his production for supply to the local market, usually by selling it to a government-nominated entity. The price of such sale is addressed in the relevant article. It can be consistent with market-based pricing, or it can be a lower price. In the latter case, often found in countries having a tradition of subsidized petroleum fuels prices, this can be a substantial economic burden (loss of value) for the contractor.

### **Below-market supply obligation for crude oil**

Box 11-6 shows the provision for domestic supply obligation for crude oil from an Indonesian PSA. Indonesia's government for many years kept fuel prices for domestic consumption significantly below world market prices as a boon to those citizens who could afford to own cars. Its PSAs required oil firms to give up parts of their crude oil entitlements at a price of 25% of the value obtained for other cargoes.<sup>6</sup> The domestic supply obligation is 25% of the contractor's entitlement. It might have been less pursuant to the (a) provision shown in Box 11-6, if Indonesia's domestic oil consumption had been less than 25% of its production, but that has not been the case since 1980.

**Box 11-6 Domestic supply obligation for crude oil from an Indonesian PSA (*Production sharing contract for Yapen Block, September 27th, 1999, Article 5.2.15*)**

. . . . after commercial production commences, fulfill its obligation towards the supply of the domestic market in Indonesia. CONTRACTOR agrees to sell and deliver to PERTAMINA a portion of the share of the Crude Oil to which CONTRACTOR is entitled pursuant to clauses 6.1.3 and 6.3.1 calculated for each Year as follows:

- (a) multiply the total quantity of Crude Oil produced from Contract Area by a fraction the numerator of which is the total quantity of Crude Oil to be supplied and the denominator is the entire Indonesian production of Crude Oil of all petroleum companies;
- (b) compute twenty-five percent (25%) of total quantity of Crude Oil produced from the Contract Area;
- (c) multiply the lower quantity computed, either under (a) or (b) by the resultant percentage of CONTRACTOR's entitlement as provided under clause 6.1.3 hereof;

The quantity of Crude Oil computed under (c) shall be the maximum quantity to be supplied by CONTRACTOR in any Year pursuant to this paragraph, and deficiencies, if any, shall not be carried forward to any subsequent Year; provided that if for any Year the recoverable Operating Costs exceed the difference of total sales proceeds from Crude Oil produced and saved hereunder minus the First Tranche Petroleum as provided under Section VI hereof, CONTRACTOR shall be relieved from this supply obligation for such Year.

The price at which such Crude Oil shall be delivered and sold under this clause 5.2.15 shall be twenty-five percent (25%) of the price as determined under clause 6.1.2 hereof, CONTRACTOR shall not be obligated to transport such Crude Oil beyond the Point of Export but upon request CONTRACTOR shall assist in arranging transportation and such assistance shall be without costs or risk to CONTRACTOR.

Notwithstanding the foregoing, for the period of five (5) consecutive years (meaning sixty (60) months) starting the month of the first delivery of Crude Oil produced and saved from each field in the Contract Area, the fee per Barrel for the quantity of Crude Oil supplied to the domestic market from each such field shall be equal to the price determined in accordance with Section VI hereof for Crude Oil from such field taken for the recovery of Operating Costs. The proceeds in excess of the aforesaid twenty-five percent (25%) shall preferably be used to assist financing of continued exploration efforts by CONTRACTOR in the Contract Area or in other areas of the Republic of Indonesia if such opportunity exists. In case no such opportunity can be demonstrated to exist in accordance with good oil field practices, CONTRACTOR shall be free to use such proceeds at its own discretion;