

## Local Involvement in Harnessing Crude Oil and Natural Gas in Nigeria

H. U. Nwosu<sup>a</sup>, I. N. Nwachukwu<sup>a</sup>, S.O.T. Ogaji<sup>b+</sup> and S.D. Probert<sup>b</sup>

<sup>a</sup> Mechanical Engineering Department, University of Port Harcourt. P.M.B. 5323, East-West Road, Choba, Rivers State, Nigeria

<sup>b</sup> School Of Engineering, Cranfield University, Bedfordshire. United Kingdom. Mk43 OAL

<sup>+</sup> Corresponding author

### Abstract

Vast financial investments have been made in the upstream crude-oil and natural-gas (CONG) sector in Nigeria, but have not resulted in significant benefits for most Nigerians. The associated major activities e.g. exploration, drilling, production, well intervention and service provision remain primarily controlled and managed by foreign multi-national companies. Only minor contracts have been awarded to local contractors. Several factors, ranging from locally inadequate finance being available, corrupt local operators, lack of technical expertise and the conflicting attitudes of multi-national operators and local contractors have contributed to this. Yet, numerous opportunities are increasingly available for indigenous entrepreneurs and local contractors. To achieve good public relations, sustainability and better economic performances, a wiser balance between globalisation and localisation is needed! This study considers the impedances to achieving greater indigenous inputs to the CONG sector, with recommendations proffered with respect to what could be done to alleviate them.

### Abbreviations

bpd	Barrels per day
CONG	Crude-oil and natural-gas
E&P	Exploration and production
EPC	Engineering procurement and construction
EPIC	Engineering, procurement, installation, and construction
IPP	Independent power-plant
ISO	International Standards Organisation
LPG	Liquefied petroleum-gas
MNE	Multi-national enterprise
NAPIMS	National Petroleum Investment Management Service
NETCO	National Engineering and Technical Company
NNPC	Nigerian National Petroleum Corporation
OPL	Oil-prospecting licence
QMS	Quality management services
SNEPCO	Shell Nigeria Exploration and Production Company
SPDC	Shell Petroleum Development Company
UKAS	United Kingdom's accreditation scheme

## **Glossary of Terms**

### **Local Content**

This parameter indicates the involvement and participation of the human and material resources of a nation in the considered activity of that state. In the present context, it includes the manpower and services of Nigerian origin, which contribute to the national economy [1]. It is the integrated contributions to any of the myriad of activities, operations or inputs in the CONG extraction-process which are made by Nigerian personnel, local contractors, wholly-owned Nigerian companies or by Nigerian registered companies in which Nigerians effectively own a majority of the equity [2].

### **Indigenous Contractor or Company**

This is one that (i) is registered in Nigeria with a 60 to 100% Nigerian shareholding, (ii) possesses appropriate expertise, and financial viability, and (iii) has proved to be a contributor to the economic growth in its area of operation [1]. However, some, perversely but understandably due to frustration, define local contractors as the ‘reverse of the foreign multi-nationals like Shell, Chevron, Mobil, Addax Petroleum, Conoco Energy and so forth’ [3]. Unlike multi-national corporations, local contractors unfortunately at present possess a low equity-base, often being owner managed, and are incapable of meeting the titanic financial commitments involved in CONG explorations and production.

### **Africa: its problems, causes and opportunities**

This is the only content in which the prevalence of poverty (arising predominantly from corruption and bad government) is increasing and life expectancy falling. In Africa, at least 30,000 children die each day, mostly from (i) preventable diseases or (ii) a lack of food and portable water. Another ~7000 perish from Aids daily. The prevalence of ill health (e.g. those suffering from tuberculosis, malaria or HIV/Aids) leads to depleting capability of undertaking work and eventually death. In some African countries, the average life-expectancy is as low as 33 years. Thus, it is understandable that many African desperately wish for high-quality prevention and treatment health services as well as better living standards. These will ensue with moves to smaller families, environmentally sustainable activities and greater respect for human rights. The extremes of droughts and flood, leading to crises are prevalent. Plagues of locusts, which devour crops on a large scale, have become a major scourge partly because the international programme of extermination is no longer fully implemented.

Annual global trade with Africa has fallen by approximately two-thirds since AD 1980. Sub-Saharan Africa’s share of global commerce declined from 6% to 4% during the period AD1984 – AD2004.

Corruption, nepotism, autocratism, bad governance, brutality and systematic mismanagement are some of the root causes of many of the continents problems. Zimbabwe at the moment provides a depressing illustration of how a brutal and perfidious regime can destroy the country’s natural economic advantage and condemn the majority of its population to repression and poverty. The continent would benefit immensely if each country became a multi-political party, meritocratic democracy with a highly accountable government.

Having increased 'local content' in each multi-national high tech industry will raise the mean standard-of-living of the continents population. Building Action for Africa (BAA), a new working and pressure group formed by multi-national organisations it is hoped will facilitate this by promoting good business practices and boost brand Africa. However the destiny of Africa is ultimately in African hands!

Vast foreign aid has been injected into Africa for the last 20 years; unfortunately it has tended to breed a dependence culture. While financial aid and debt relief are desirable starting points, they will not by themselves lead to full, long-term, ethically-sustainable developments: appropriate education, transparent governance and effective risk-management are also needed.

## **Nigeria's Challenge**

Some of the predicaments of Africa in general, as mentioned in the previous section, also apply in Nigeria. The majority of Nigerians are wretchedly poor as a result of past years of misrule and ethnic conflicts. Corruption has swallowed much of the oil wealth in Nigeria for the last 30 years. However, many Nigerian villagers realise that their country, the worlds seventh largest exporter of oil, is very wealthy, yet they have to live on less than 60 pence per day. Thus foreign aid should be channelled to where it is most needed, i.e. to the poor Nigerian with the aim of creating wealth for them.

To achieve sustainability, it is usually better to be given a fishing rod rather than a fish. Trade is preferable to financial assistance. However when poverty stricken far less is wasted! Hence in Nigeria, basic skills are prevalent, i.e. it is the norm for clapped-out cars to be kept running. So the foundations for a thrifty society exist.

Industry in Nigeria produces or incurs many problems. Three examples will be mentioned. CONG and the petrochemical industries have desecrated several areas and so destroyed the livelihoods of local farmers due to the resulting soil and water pollution. This has been resented. On the other hand, the SPDC uncovered 16 cases of bribery amongst their Nigerian employees in AD2004 (i.e. up from 8 in AD 2003) and cancelled 64 local contracts in Nigeria in AD 2004 (again up from 49 in AD 2003). The manufacture of fake pharmaceuticals is a booming business in Nigeria: these fail to cure anyone and result in patients passing on their infections or even dying. These challenges must be faced.

To develop greater trust in Nigerian entrepreneurs, by foreign organisations, there should be a legally-binding guarantee that those bidding for any contract should have available, within one month of the contract being awarded, all the necessary equipment and indigenous expertise necessary for the satisfactory completion of the contract. When highly-specialised equipment or appropriately qualified personnel needed to undertake delicate tasks have, subsequent to the contract being awarded, to be hired from abroad, extremely expensive delays, of even a day, sometimes have ensued in completing the contract. This is why the CONG industry in Nigeria in Nigeria is reluctant to depend upon Nigerian entrepreneurs for complex contracts. This major problem has to be overcome if indigenous labour and locally-manufactured artefacts are to play a more significant role: often western-educated Nigerians are preferred for employment by ex-pat companies rather than locally-trained ones because they are more likely to acknowledge the existence of these problems.

The Nigerian government should foster (by the provision of more appropriate vocational-education establishments) small indigenous businesses and tax incentives for setting up high-tech industries alongside appropriate university departments. Entrepreneurship will then flourish; a more buoyant market-economy develops so leading to wealth creation and reducing the prevalence of poverty. Education results in greater (i) stability in society (ii) equality of opportunity and (iii) respect for civil liberties. Having a strong manufacturing and industrial sector is an important means of overcoming poverty. For this to flourish, Nigeria needs dependable electricity and pure water supplies. The government also needs to offer generous financial incentives for setting up of high-tech industries that will be sustainable even when the CONG reserves are completely depleted.

## **Background to CONG exploitation in Nigeria**

The social development of any nation and its economic sustainability are related directly to the level of participation of local entrepreneurs in the key economic and industrial activities, such as CONG exploration and production, agriculture, commerce, industry, tourism, transportation, communications, power generation and steel manufacture. Direct participation and involvement of local contractors in these activities could serve as a boost to the local economy through the creation of employment, improved infrastructure in society and raised standard-of-living. CONG exploration, production, refining and marketing in Nigeria contributes over 85% of the national income [4]. However, these operations, in over 40 years of existence, have, from instigation, been largely undertaken by cartel-type organizations, with only low levels of indigenous-contractor participation. Major activities, e.g. exploration, drilling, production, well intervention and service provision have been exploited, controlled and managed by foreign multi-national companies. Only relatively minor contracts have been awarded to local entrepreneurs [5]. The consequence of this is a massive (>10<sup>9</sup> US\$ per year) ‘capital flight’ out of Nigeria via the remuneration of foreign expatriate labour, payment for training and development programmes outside Nigeria, equipment procurement from abroad, and the importation of software and data-monitoring systems which the industry uses. In spite of the numerous activities in the sector, too little value is added to the local economy, yet extensive high levels of environmental pollution ensue resulting in the reduction of local sustainability by the destruction of local agriculture, and hence high local-unemployment and economic depression ensue.

Twenty years ago, the levels of government and societal consciousness as well as the awareness of malpractices and losses accruing to the citizenry through CONG operations were low. Since then pertinent awareness has risen. The knock-on effects are youth restiveness, conflicts, upheavals, hostage taking, and equipment seizures. which result in operation disruptions and lost operating time. These reactions occur often as a result of the venting of anger by the local population (in the Niger Delta in particular) induced by perceived injustices.

There is now a country-wide outcry for the government to facilitate greater indigenous involvements in the energy harnessing sector as a means of raising the average standard of living. This includes a demand for the government to help create an enabling environment in favour of local contractors through the government’s (i) provision of the desired support facilities (I.e. infrastructure) as well as (ii) instituting an appropriate legal framework and (iii) empowering regulatory bodies to restrain undesirable foreign participation and competition in the CONG sector. The government can, if it so chooses, intervene in the private sector by (i)

regulating industries that are non-competitive, such as monopolies as well as (ii) encouraging competition [6].

Too often, CONG activities in Nigeria have been managed so that the interests of local contractors are sidelined. The process has been plagued with non-transparency, insincerity, sharp practices and even corruption by key industrial and local stakeholders. There are only low levels of local financial investment in the sector; with indigenous under-capacity utilization, so resulting in an almost complete foreign monopoly. Many local entrepreneurs that attempted to participate have become frustrated. The impression exists in Nigeria that CONG activities are too capital intensive and high-technology oriented for local contractors to become involved. Major multi-national oil-operators have had reasons (e.g. alleged poor reliability and inferior technical capability of the workforce to be employed) for awarding jobs preferably to foreign service-providers. The opinion of most major oil companies is that 'indigenous companies (and individuals) do not perform well'. The results are (i) fewer opportunities for local entrepreneurs (ii) job gains for foreign companies with attendant cash flow haemorrhaging from Nigeria and (iii) underemployment of its citizens. Hence Nigerians have to disprove such prevalent existing opinions and show that local labour and companies are competent to serve the CONG industry. A wiser management aimed at upgrading by education and training, the local content in the CONG industry would serve the Nigerian economy well. It would be an effective method of empowerment of local contractors and could serve as a propelling instrument for a significant industrial take-off nationally. If more indigenous entrepreneurs become established, even the export of local technical expertise and services may occur.

### **Aspirations and targets with respect to increased local-content realization**

The Nigerian government hopes, expressed since AD1997, are [7]:

- All exploration and production (E & P) activities it was hoped would achieve a minimum of 30% local content for the procured services and products by AD2003 (but not achieved) and 50% by AD2010.
- Indigenous companies must capture, and be seen to be gaining, an increasing share of goods and services delivered to the CONG sector in Nigeria.
- Pertinent technological knowledge must be transferred to Nigerian citizens so that local capability is improved.

### **Historical review**

The CONG sector is the major contributor to the Nigerian economy, accounting for about 90% of the federal government's annual revenues. Any changes to the CONG industry must not be allowed to impair this. The industry includes all firms engaged in petroleum exploration, production, refining, distribution and marketing as well as petrochemicals manufacture. Upstream activities [3] relate to the exploration and production of CONG, i.e. from drilling the initial appraisal wells, through seismic data processing, to drilling of wells and extraction of crude oil, condensates, natural gas or associated gas from the well. Historically, foreign firms have dominated the upstream sector of the Nigerian CONG industry. Downstream activities relate to the transportation of CONG and their derivatives as well as their transformation into

finished products and their distribution and marketing. The downstream sector like its upstream counterpart, is beginning to involve Nigerian nationals.

The crude oil industry in Nigeria began in AD1908 when the associated exploration activity was carried out by the German Bitumen Corporation. In 1937, an Oil Prospecting Licence (OPL) was granted to Shell-D'Arcy's exploration organisation. In 1955, Mobil Exploration Nigeria Incorporated obtained concessions over the whole of the then Northern region of Nigeria. Crude oil was first found in commercial quantities at Oloibiri in the Niger Delta (1956) and further discoveries, at Afam and Boma, established Nigeria as a significant oil-exporting country with its first shipment of 5000 barrels of crude oil being sold on the international market ensuing in 1958 [4].

In 1961, Mobil Exploration Nigeria drilled three deep wells in western Nigeria, but later abandoned the concession [4]. In the same year, the Nigerian government granted ten oil-prospecting licenses on the continental shelf (i.e. off-shore) to five foreign companies: Shell-BP, Mobil Exploration Nigeria Incorporated, AMOSEA, Texaco Mineral Company and Nigerian Gulf Oil Company, subject then to the payment of one million naira (**two million \$US**) each.

Regardless of the increasing activities in the CONG industry, since its inception in Nigeria, it has been dominated by foreign multi-national companies. Nevertheless, in keeping with the policy of actively participating in the activities of the leading sectors, the federal government has acquired a controlling equity interest in the Nigerian oil industry. Recently, the federal government has also become preoccupied with ensuring the occurrence of increased involvement of local companies in the activities of the sector. In 1982, the retailing of products from CONG industries in Nigeria, which hitherto were firmly in the hands of major multi-national oil-companies, was deregulated to permit participation of nine independent marketers.

During the period AD1970-2002, local operators and service providers started to participate in capital-intensive high-technology CONG operations in Nigeria. In 1990, a reinvigorated indigenous operatorship programme was initiated through the allocation of blocks to indigenous companies that operate on a sole-risk basis. However, the inputs of local firms in providing services are in total still less than 10% [7]. In furtherance of the objective to boost indigenous participation, the federal government, through the Nigerian National Petroleum Corporation (NNPC), recently directed all major multi-national companies to reserve certain positions and services for pertinently-qualified Nigerians and local firms. For example, the Corporation ordered that projects requiring the supply of drilling fluid, mud-slide controls, casing or tubing services as well as wire-line completion be awarded only to Nigerian companies [7]. The dominant argument has been that effective Nigerian participation in the CONG sector could turn the industry from the current enclave to one that is effectively linked with the general economy. A multiplier effect should arise as result of the bonanza of having such rich indigenous resources of CONG.

The group managing director of NAPIMS, at a Shell sponsored workshop, stated: 'We will continue to support innovative ideas that seek to improve the contracting procedure, increased transparency and local participation to reduce the costs of goods and services, and aid in the resolution of social problems in the industry'. However multi-national operators have been widely criticized for not providing sufficient opportunities to local contractors despite many that exist in the sector, though, the problem is far from one sided. Indigenous participation

needs to go far beyond the award of small contracts [8]. Aret Adams, a one time petroleum adviser to the President of Nigeria, summarized it when he described local content as ‘an idea whose time has come’. However Table 1 shows the distribution of contracts among local and foreign contractors by Shell Petroleum Development Company (SPDC) of Nigeria. Table 2 shows the relative cumulative production outputs of indigenous and multi-national operators in Nigeria.

Table 1: Distribution of contracts among local and foreign contractors by the SPDC, Nigeria in AD2004

Type of Contractor	% in bpd		
	Value, without EPC taken into account	Value, of EPC	Number
Local	56	30	80
Foreign	44	70	20

Table 2: Past and proposed future comparative outputs (estimated via barrels of crude oil per day) between local and foreign contractors in the CONG sector in Nigeria

Period	Input (% of total)	
	Local	Foreign
2001	2	98
2002	8	92
2010	50	50

Potential investment opportunities, available to local and foreign individuals or organisations (e.g. Nigerian banks) in the CONG sector of Nigeria includes those for:-

- Manufacturing facilities to produce materials and artefacts for the oil-field operations e.g., drilling clays, chemicals, plastics, pipes, bolts, nuts, screw gaskets, valves, pans and accessories.
- Local engineering, construction, and fabrication.
- Refining and petrochemical plants.
- The construction and operation of export-oriented refineries and LPG plants.
- Facilities requiring the construction of systems for natural-gas gathering and distribution.
- IPPs utilizing flared or associated gases from hydrocarbon operations.
- Indigenous exploration and production firms.

**Investment opportunity activities that could achieve a Nigerian content increase in a deregulated downstream sector**

- Transportation: (a) pipeline provision and maintenance; (b) ocean-going vessels, tug boats and barges; (c) rail transportation; and (d) overland tankers.  
Storage terminals and bunkering
- Natural-gas processing and marketing.
- Bunkering.
- Retail outlets.

- Oil trading.
- Brokerage services
- Ancillary services: (a) engineering; procurement and construction; (b) safety and environment; (c) reliability and maintenance services; (d) security services
- Other associated services: - (a) financial; and (b) insurance

### **Indigenous Service-Companies' Opportunities**

Business challenges (some of which have already been undertaken successfully by Nigerian companies) for local contractors in the CONG sector:-

- Drilling and well services.
- CONG engineering consultancy and design.
- Civil and structural engineering.
- Pipeline coating, construction and corrosion management.
- Engineering, procurement, installation, and construction (EPIC) services for on-shore CONG facilities.
- Maintenance and operations services (for compressors/pumps, diving and underwater inspections, dredging, etc.).
- Manufacture of wellhead and process-control systems.
- Fabrication (e.g. of house-boats, mobile units and process items).
- Procurement and legal advice (e.g. for port services, vendor representation, and liaison services).
- Environmental protection and testing services.
- Logistics support (with respect to supply vessels, transportation and facilities management).

### **Local content & service quality milestones**

The traditional complaint against the use of an indigenous workforce and artefacts manufactured in Nigeria was the low standards achieved. However recently, and increasingly so, Nigerian companies have complied with International Standard Organization (ISO) quality requirements. For instance:-

- NETCO, has satisfied ISO 9001: 1994 QMS as certified by the United Kingdom Accreditation Scheme, UKAS.
- Cakasa Ltd achieved ISO 9001:1994 QMS certification on 21<sup>st</sup> October 2001 by UKAS.
- Cakasa Ltd was awarded ISO 9001:2000 QMS certifications on 20<sup>th</sup> June 2003 by UKAS.
- Several more indigenous service providers e.g., Sowsco Well Services, are pursuing ISO quality management certifications.

Innovations introduced by indigenous service-providers in the CONG sector in Nigeria include:-

- First deep off-shore directional drilling ever done on an oil well in Nigeria. (Company: SNEPCO; service provider: Drillog Petrodynamics).
- First successful coiled-tubing deployed production logging operation on a small radius horizontal well in Africa. (Company: Ashland); service provider: Oildata Wireline Services)
- First drill cutting re-injection trial performed in Africa. (Company: SPDC; and service provider: Sowsco/Petrosan).

- Design and manufacture of a wellhead and production control system in Nigeria. (Company: Mobil; Service provider: Weltek Limited).

### **Factors leading to the present low-level of local participation in the CONG sector of Nigeria**

- Lack of a stimulating government regulatory framework.
- Corruption and mismanagement or opaque accountability
- Major oil companies attitudes.
- Deficient infrastructural facilities.
- Lack of appropriate materials.
- Institutional problems
- Absence of adequate appropriate financing.
- Unstable and even volatile political and economic environments in Nigeria.

### **Impediments to the growth of local content in the CONG sector in Nigeria.**

- Failure of local contractors to fulfil basic prerequisites; e.g. the provision of detailed and authenticated banking proposals, comprehensive business plans, legally-binding quotations, agreed delivery deadlines, and having adequate finance available to achieve what is promised.
- Low equity-base of local contractors.
- High costs of borrowing in the domestic economy.
- Scanty or lack of financial documentation, particularly audited accounts.
- High risk-rating occasioned by recurrent community disturbances.
- Lack of ready access to foreign currency.
- Single obligation limitation/constraints imposed on local banks by regulation.
- Excessively long gestation/courtship/completion periods both in securing and executing oil contracts.

However there are increasingly-available financial options and opportunities for local contractors in the CONG sector in Nigeria: for example via:-

- Consortium financing: a group of banks led by an agent bank to provide the necessary funding.
- Term loan: a single facility for a given period or series of facilities at given dates.
- Credit line: a short-term facility that must be repaid or renewed within one year.
- Advances: a single loan with a maturity period not exceeding 90 days.
- Overdrafts: a situation where a bank honours a cheque drawn on a non-existent fund.
- Invoice discounting: selling accounts receivables to a financial institution on a non-recourse basis.
- Equipment leasing: an agreement between the equipment owner or lessor and its user or lessee.

Benefits of equipment leasing to local contractors in the CONG sector in Nigeria include:

- Eliminates immediate financial burden involved in the outright purchase of expensive high-tech oil-field equipment.

- Flexible payment plan reduces cash-flow pressures on working capital.
- Provides a hedge against technological obsolescence.
- Less restrictive form of financing, as it does not tie up the lessee's accessibility to other financial options.
- Off-balance sheet advantage of leasing can be used to give a better impression of the company's financial position.

## **Loan applications by local contractors**

The following are the minimum bank requirements imposed upon Nigerian contractors in need of a loan from Nigerian banks:

- A satisfactory company profile.
- A trustworthy global-banking relationship.
- Satisfactory latest three years' audited accounts.
- Favourable outcome of recent management account.
- Encouraging statement of affairs in the case of a start-up company.
- Detailed financial projections (including a balance sheet, income statement and cash-flow forecast).
- Clear company business strategy and focus.
- Formal request for the credit facility.
- Availability of sufficient security for the requested facility.
- Acceptable repayment schedule for the request.

Why credit requests by local contractors are so often rejected by the banks.

- Lack of integrity e.g. presentation of phoney invoices for discounting.
- Bad track-records lead to low credit ratings.
- Weak balance sheets or un-audited accounts.
- Lack of collateral security.

## **Survey of Opinions**

Questionnaire replies were received from 100 participants of why there is a relatively low local content in the CONG sector in Nigeria: a summary of their opinions now follows:-

- Regardless of the numerous opportunities for local entrepreneurs, local participation has been limited mainly to the award of minor contracts and services.
- The level of indigenous participation in **AD 2004** was put at less than 10% by 76 respondents.
- The high level of awareness of the issue of local content by Nigerian entrepreneurs and company owners has not led to a significant number of corresponding remedial actions being implemented.
- Most respondents believe that mergers/partnering among Nigerian firms could facilitate overcoming most of the inhibitions preventing increased local content.
- Equipment leasing is a good financial option that could be exploited by local contractors to limit their immediate cash-burden resulting from equipment purchases.
- There are neither (i) pertinent laws to back government policies nor (ii) directives intended to increase local content.

- Lack of adequate finance, insufficient pertinent technical expertise and unhelpful multi-national company's attitude are impediments that should be removed.
- An improved educational infrastructure is needed.

## Conclusions

- Alleged corporate and governmental corruption has severely inhibited investment in Nigeria.
- Businesses tend to go to places where they can make profits: factors such as excessive political interference, inadequate infrastructure in the local society, political instability, corruption, interruptible electricity supplies etc discourage investment.
- Corruption free procurement processes should be employed
- All contracts should be able to be seen and understood by the government, whose role should be to fight against poverty of all its citizens: the weak should not be allowed to be exploited by the strong!
- Nigeria (with its vast natural-resources) is potentially very rich, but it needs now to protect and foster (increasingly sustainable) industries, which are locally owned and run by Nigerians, in order to encourage high rates of indigenous employment. Now is the time to start preparing for when the oil wells run dry!
- Wiser, zero-corruption tolerant governance is needed for all activities in Nigeria.
- Nigeria is a leading country in Africa with respect to embracing market economics: trade rather than aid provides a sustainable means of overcoming deprivation.
- There is a lack of high-quality entrepreneurial skills available in Nigeria. The Government needs to provide financial "seed com" to small and medium sized Nigerian firms to help them improve their skills in research, design, development, manufacturing, quality control and marketing.
- Greater indigenous participation and ownership of scientific and high-technology enterprises are needed: then Nigerians will become more involved with priority setting, vocational education and entrepreneurship in order to solve local problems.
- An increased participation of local entrepreneurs and workers in the activities of the CONG sector is desirable for Nigerian development and economic improvement.
- The government needs to encourage (i) more multi-national enterprises (MNEs) to set-up in Nigeria and (ii) decreases in bureaucracy, thereby enhancing indigenous technological capability and industrial competitiveness. However, these trends will not ensue automatically when faced with market forces and trade liberalisation. Hence the recent introduction (it is hoped for a short-term only) of protective government policies (e.g. mandatory increases of local content) should run in parallel with far better education and training opportunities for Nigerian citizens.
- Local participation will facilitate economic growth and national development through (i) a reduction in capital "flight" abroad, (ii) employment generation, (iii) local skills enhancement, (iv) creation of a better infrastructure in society, and (v) value-added to the local economy.
- The involvement of local entrepreneurs has remained low. Several factors ranging from a lack of finance, discouraging environment, unsympathetic legal-framework, inadequate infrastructure, attitude of multi-national companies, and assumptions of local contractors have contributed to this.
- Available records show that few indigenous contractors have set sufficiently high standards.

- To work effectively with multi-national organisations, changes in some indigenous practices such as the African concept of ‘elastic’ time (where, quite reasonably, buses leave when full and not according to a timetable) has to be effected.
- The lower labour cost incurred should be an incentive to employ more Nigerians rather than expatriate workers.

In addition, it is acknowledged that the CONG industry and the government in Nigeria should:-

- encourage and educate local entrepreneurs concerning the available business opportunities in the CONG industry in Nigeria;
- create a “can-do” employment and infrastructure for the local population;
- create a direct link between increasing CONG activities and local economic growth; the CONG sector has so far remained an isolated enclave within the economy;
- train and develop local manpower in key technical and commercial activities of the CONG sector in preparation for a complete take over of the management of the sector by Nigerians in the medium-term;
- encourage technology transfer locally and re-position the local manufacturing sector: to facilitate greater take-up in CONG operations;
- facilitate Nigerian personnel aspirations and overcome a dependence attitude/culture; and
- eliminate the wasteful flaring of natural gas from the more than 1000 wells in the Niger delta: this combustion is a major source of greenhouse gases, and a huge financial loss for Nigerian.

## **Recommendations**

- Change for the better is achievable provided that those involved are prepared to be adaptive. Improvements in Nigeria’s industrial society are realisable, despite many entrenched problems, provided the attitudes and thinking of many more Nigerians and especially their leaders are more malleable. Nigeria needs institutions which are stable, more productive and broadly acceptable to society, but sufficiently flexible to adapt rapidly in response to changing circumstances!
- The Government’s position on the issue of local content should go well beyond pertinent discussions, communiqués, and issuing directives, actions not just words are required. Politicians and senior managers must be held to greater account.
- Monitoring agencies should be empowered to ensure that adequate local content always occurs.
- The Government should ensure that all activities in the petroleum industry, for which local contractors have been tried, tested and proved to be successful are reserved solely for them.
- Technology transfers should be realized by encouraging local contractors, foreign service-providers and the Government to form consortia to ensure that proper training is available, and taken up by prospective members of the workforce and potential entrepreneurs.
- Multi-national operators and foreign service-providers should ensure that Nigerian government stipulated percentages of local content exist in their technical bids and occur subsequently in practice.
- Local entrepreneurs should be encouraged to put their efforts and resources together, either as joint ventures, cooperative enterprises or new limited liability companies, with such entities registered under a special job category.

- Multi-national operators should show commitment by ensuring regular and prompt payments to local contractors for services rendered, and also provide continuous work rotation packages to new local entities.
- A meaningful engagement in harnessing the vitality and commitment of Nigerian youths in on-going projects will facilitate creating a calm, hospitable, and safer operating environment.
- National workshops and seminars are important for the education of the citizens concerning the local content including available opportunities in the E & P sector for local entrepreneurs.
- A Government incentive scheme should be evolved to encourage local contractors by rewarding them for outstanding performances.
- The destiny of the Nigerian CONG industry should be under Nigerian governance.

## References

[1] Nwasike, O.T. (2002): “Nigerian oil-industry: opportunities and challenges for local contractors”, A paper presented at a 2-day seminar on the dynamics of equipment leasing and contract financing for local contractors in the oil and gas industry, Port Harcourt.

[2] Aneke, Paul (2002): “The role of major operators in the development of local content in the Nigerian oil and gas industry”, A paper delivered during a national seminar on the dynamics of equipment leasing and contract financing for local contractors in the oil and gas sector, Port Harcourt.

[3] Tiliye, F.C. (2002): “Financing local contractors in the Nigerian oil and gas industry”, A paper presented at a 2-day seminar on the dynamics of equipment leasing and contract financing for local contractors in the oil and gas industry, Port Harcourt.

[4] Federal Ministry of Petroleum Resources (2003): “Nigerian oil and gas industry – Enhancing capacity building; OTC”, Skkor Services Ltd, Lagos, Nigeria, pp. 12-16, 71-75.

[5] MacPepple, H. (2002): “An overview of operations of local contractors in the Nigerian oil and gas industry: key issues”, A paper delivered at a technical workshop on Local Content, Port Harcourt, Nigeria.

[6] Henderson, J.V. & Poole, W. (1991): “Principles of Economics”, D.C. Heath and Company, NY, USA, pp. 361.

[7] The Guardian News Daily, Nigeria (2002 - 2003): several editorial comments.

[8] Adebisi, S.M.O (2002): “Equipment leasing as an option for the financing of operations of local contractors in the oil and gas industry”, a paper presented at the national seminar on local content organized by FB Asset management Ltd and NAPIMS, Port Harcourt.

## Bibliography

Federal Ministry of Information, Nigeria (1978-79): “Nigerian handbook”, Third Press International, Lagos, Nigeria.

Jaja, R.M. (2002): “The African’s energy industry and the global forces of technology and capital”, A paper delivered at the National Workshop, Port Harcourt, Nigeria.

Juran, J.M. & Gryna, F.M. (1998): “Quality Control Handbook”, 4<sup>th</sup> Edition, McGraw-Hill Inc, USA. pp. 23.60; 23.72.

Ken, Black (1994): “Business Statistics: Contemporary decision-making”, West Publishing Company, New York. pp. 729.

Luck, D.J. & Rubin, R.S. (1987): “Marketing Research”, 7<sup>th</sup> Edition, Prentice, Hall Int. Inc., Englewood Cliffs, New Jersey, pp. 53.

Moore, S.D. & McCabe, P.G. (1993): “Introduction to the Practice of Statistics”, 2<sup>nd</sup> Edition, W.H. Freeman and Company, USA, pp. 472

Nwachukwu, I. N. (2004): “Management of local content in the oil and gas industry in Nigeria”. Unpublished M.E.M. Thesis, University of Port Harcourt, Port Harcourt, Nigeria.

Pitan, Kayode (2003): “Financing the marginal fields – a banker’s perspective”, A paper presented during the NAPE Business meeting, V.I., Lagos, Nigeria.

Shell Petroleum Development Company, Port Harcourt Briefing Notes (2003): “Promoting Local Content/Contracting”, 2<sup>nd</sup> Edition, Port Harcourt, Nigeria

Shell Petroleum Development Company, Port Harcourt Monthly News Bulletin, September (2003).