



Scaling Up Value Creation and Local Development in The (upstream) Mining Sector In Ghana

POLICY BRIEF





1. INTRODUCTION

Historically, Ghana's economic landscape has been shaped by the mining sector, which is essentially dominated by gold. The beginning of commercial exploitation of oil in 2009 has further accentuated the footprint of the extractive sector, although to date, the contribution of the sector remains sub-optimal compared to its potential. Ghana has other mineral endowments, such as diamonds, iron ore, manganese and bauxite, but which so far remain under-exploited. As interest in the mineral sector grows and as the country embarks on strategic reforms to better leverage this sector to build an industrial economy, it is expected that the potential of other mineral reserves will be unearthed.

While mineral extraction in Ghana has contributed to the country's development path since its independence, the extent to which the country has tapped the potential of the sector to create broader economic linkages, both within the extractive sector and with other economic sectors, has remained limited. In the mining sector, few strong domestic upstream industries have been developed to supply the mining industry. The country still imports most procurement needs of mining firms and when they are sourced locally, they are often not manufactured but instead packaged and distributed. This has tremendous loss implications given the long history of mining in Ghana, indicating the opportunity has been missed for far longer than in other African countries.

There are many reasons for this lost opportunity, including:

- an insufficient and often weak industrial base that cannot supply the mining industry with competitive goods and services on a sustainable basis;
- the strong presence of a class of businessmen that are essentially intermediaries between importers and the mining industry;
- a lack of political consensus around how to strengthen the linkages between

- mining and industrialization;
- domestic business environment hurdles and administrative red tapes that are not conducive to linkages development in this sector; and
- insufficient commitments from the mining industry itself to support local sourcing, beyond their corporate social responsibility commitments.

In 2014, like many other resource-rich countries in Africa, following weak global demand and the rebalancing of China's economy, Ghana was severely affected by the contraction of the commodity market. Since then, the country has been dealing with macro-economic challenges, fiscal deficits, depreciation of the cedi, high inflation, and other issues. This has underscored the vulnerability of the current Ghanaian economic model, whose performance is directly correlated with commodity price fluctuations.

As Ghana aspires to pursue its march to become a resilient middle-income country, this vulnerable situation called for a fundamental rethink in the country's approach to long-term sustainable development. In particular, it has become clear that the country has to embrace a shift in paradigm to broaden and deepen its economic structure and to reduce its dependency on the 'revenue-first approach' to the mining sector, in order to build resilience to external shocks. This policy brief is based on a full report on upstream value addition opportunities in Ghana by the African Minerals Development Centre (AMDC) and the German Federal Institute for Geosciences and Natural Resources (BGR).



2. SUMMARY OF FINDINGS

The **overall aim** of the Country Mining Vision (CMV) process is to support Ghana's broader industrial agenda, using the mining sector as a key leverage given its significant importance in the economic landscape.

In support of this CMV, an in-depth analysis was conducted by AMDC, in collaboration with BGR, whose role was to provide economic analysis regarding mining procurement and potential for value chain development in Ghana as a potential hub in West Africa.

The Report made a thorough assessment at the overall economic context in Ghana with a particular focus on the mining sector's contribution to various dimensions of linkages. It underscores the structural weaknesses currently impeding the country's drive to diversification and industrialisation as well as productivity and competitiveness challenges preventing local industries from taking up opportunities to supply the mining industry and other economic sectors.

2.1. Improving the business climate and facilitating investment

The competitiveness of Ghana's supply chain is conditional upon a having **conducive business environment** that supports production and promotes the productivity of domestic firms. Today, firms operating in Ghana face numerous barriers (such as cumbersome administrative procedures; complex fiscal systems; unfair trade policies favouring imports at the expense of local manufacturing; thick borders; poor logistics; high energy prices etc.), and these drive up their costs, heavily impacting their ability to participate competitively in the supply chain.

In addition, the **current industrial tissue is weak** by international standards due to insufficient tools to implement the current industrial policy, in particular for Small and Medium Enterprises (SMEs). The issue of informality must be addressed. At the same time, there are too many local firms that are too small to meaningfully participate in value creation and they must be supported to grow in size. Further, the rules defining the "manufactured in Ghana" concept remains too vague and has benefited packaging facilities at the expense of industries focused on local value addition.

It is also noted that **investment incentives available to SMEs** are insufficient: interest rates

are too high; credit remains inaccessible; entrepreneurs and start-ups are not sufficiently nurtured; subsidies are insufficient to support technological acquisition; targeted industrial instruments to support infant industries are limited, and so on.

If Ghana wants to foster linkages, in particular in higher value added activities, it needs to improve its **investment climate**. Today, certain conditions regarding foreign investment (such as capital requirements for joint ventures) are too restrictive and have stimulated investments in extractive activities, rather than promoted investment in industrial activities. Strong supply chains in high-value added products require foreign technology and know-how and therefore must be encouraged.

2.2. Market analysis for procurement

The Report also zooms in on the value contribution of the mining industry with a particular emphasis on upstream linkages in Ghana. The assessment looks at the economic potential and market realities for local procurement focusing on Ghana and West Africa as a whole. For that purpose, countries covered in the following section are Ghana, Burkina Faso, Mali and Côte d'Ivoire.

Kaiser Economic Development Partners assisted BGR with development of a demand model for West African mining, as well as confirmation of top local procurement opportunities that can reduce cost or create efficiencies, and understanding the related constraints.

The demand model estimated mining operational expenditure procurement spent per country for 2015 for all mining companies effectively operating in that year, based on publicly reported cash costs. The model allocated procurement spending to 32 product and service categories. Allocations of percentage spending to each category were tested against available bottom-up procurement data from the region and refined using expert input.

Mining company profiles were then developed using secondary research and interviews with supply chain officials. The 14 companies profiled account for around 80 per cent of industrial gold production in the four countries covered in 2015.

Ten product opportunity case studies were developed based on input from mining companies, the project team's knowledge from previous supplier interactions in the region, and secondary

research on supplier capacity and existing support efforts. These case studies indicated requirements that could shape support areas to help realise these opportunities.

A gap analysis was finally conducted to identify major constraints to the realisation of the opportunities in the case studies. On that basis, support recommendations were formulated.

The analysis calculated the total procurement across the four focus countries, which **amounted to US\$2.66 billion for 2015**. Of the four countries assessed, Ghana is by far the largest gold-producing country and therefore has the largest market potential in West Africa, putting the country in a comfortable position to develop capacities as a regional hub. For the purpose of the analysis, ten of its large mines in operation were surveyed and altogether, accounting for a total of US\$ 1.21 billion operational spending in 2015. The country accounted for 45.5 per cent of the total market for all four countries. However, despite Ghana being a large gold-producing country, the market remains small by international standards.

2.3. Assessing local content regulation in Ghana

The Report further looked at the current local content regulation in Ghana and assessed the effectiveness of the measures, cognisant of the fact that the regulations are fairly recent and therefore difficult to assess against a benchmark of efficiency. It nonetheless points out some of the weaknesses that need to be addressed, to ensure that the measures remain efficient and can be scaled up, as the capacity of domestic suppliers are enhanced.

Some of the challenges identified include (i) the risk of fronting; (ii) the methods to assess companies' compliance, which are not clear and transparent; (iii) the rules of origin to determine the level of local sourcing (how much value added must be done locally to qualify as local?); and (iv) various challenges faced by local suppliers, impacting on their ability to supply the mines on a sustainable basis.

The Report also considers the key question of local employment as an objective of the local content regulations, and looks at the current situation faced by mining industries and suppliers alike, including weaknesses with the labour market and training infrastructure.

2.4. Promoting supply chain development

Scaling up domestic suppliers' **capacity, capabilities and competitiveness** are critical conditions to reverse the trend of de-industrialisation and foster more linkages between the mineral sector and other economic activities. Ghana's large resource endowments, combined with a solid local customer base (the mining and oil and gas industries), naturally provide a comparative advantage and the necessary foundations upon which a competitive supplier base can be established.

A number of **supply side constraints** must be removed to allow domestic suppliers to take up procurement opportunities in the mining sector. In the market analysis, a number of specific items where Ghana could position itself to become a regional hub to supply some critical procurement items and services, including to its regional counterparts, were highlighted. In addition, a range of less technological intensive items can

also be supplied by local SMEs, provided they are adequately supported, and that a good network of suppliers is in place to match demand and supply. In that regard, the current local content policy must be complemented with a strong suppliers' development programme at the national level.

On its own, Ghana's **market is small** by international standards, and therefore the country must **leverage its regional weight** to become an attractive supply chain hub, including for 'big ticket' items and critical procurement. If local firms are adequately capacitated to become competitive, local sourcing could provide decisive costs advantages. In this regard, the local content policy must be reviewed to focus on supporting strategic industries, in particular by giving local companies the means to scale up their capabilities, through systematic support to quality, timely delivery, cost effectiveness, and performance improvement.

Public and private spending and collaboration on research and development (R&D), which are necessary to provide the right space and incentives for researchers, are currently insufficient together with incentives to promote innovation.

2.5. Setting up Mineral Supply Clusters

The report looks at the role of economic clusters in spurring value creation and local development surrounding Ghana's mining sector. Specifically, how can the mineral sector help spur industrialization in the economy at large, and how can scaled-up domestic industry feed inputs to the mineral sector? Also, how can geographical and sector-specific clusters that are accompanied by a set of government interventions spur these developments?

The report investigates the role that a Ghanaian Mineral Supply Cluster can play in this regard. Industrial clusters foster agglomeration and positive externality benefits amongst economic activities located in or linked with the clusters. These can take many forms and also include the Free Zones pursued by the government of Ghana, which have a particularly export-oriented focus. The report notes that several of these Zones are particularly poised to link with Ghana's mineral sector, expanding their services and outputs to mining firms while in turn benefiting from the outputs of and infrastructure surrounding mining. The zones of focus in this study are the Shama EPZ, Ashanti technology park and the informal

Suame magazine. Each of these provides a sectoral area of expertise, and can be linked remotely or geographically with the country's mineral endowments and areas of mining activity given that they are supported in having a domestic rather than an external orientation. Success in this will require a better linking of industrial, mineral, trade and free zones policies, with all these components thus far characterized as largely independent and lacking coherence. Furthermore, more thorough mapping exercises of circular mineral linkages are needed, wherein enhanced industrialization produces inputs for the mining process, and mineral outputs are better harnessed and processed to provide domestic inputs to industry.

2.6. Skilling up the workforce

A highly educated workforce is important to ensure proper technology and knowledge transfers and spillovers. **Labour productivity** remains low by international standards. Skills mismatches impact on the absorptive capacity of the supply chain. Moreover, the quality of the workforce is a major challenge in Ghana -- a large number of secondary school drop-outs leave a high number of young people without many options; the tertiary enrolment ratio is only 16 per cent, too low for the type labour force required for a knowledge-based economy.

The **school curriculum** is not sufficiently orientated towards Science, Technology, Engineering and Mathematics (STEM) fields and Information and Communications Technology (ICT). It is estimated that about 70 per cent of students follow social sciences. Apprenticeships and internships opportunities are limited, meaning that career choices are not informed by industrial needs.

In the field of **technical and vocational training (TVET)**, the system is not sufficiently equipped with tools to improve the ability of the workforce to work in a complex and digital environment, process complex information, and to be creative and communicate effectively. For those who fall outside the system, there are insufficient policies and limited infrastructure to set up 'second chance schools'.

It is critical to remove institutional and trade barriers that impede the **movement of professionals** and participation of skilled and semi-skilled labour in regional value chains across borders within West Africa, and internationally. Ghana and its regional neighbours



must work on mutual recognition agreements, accreditation of professional bodies and circular professional migration schemes, which will allow the work force to gain international expertise.

2.7 Getting institutional coordination right

To ensure that policies are coherent and consistent, it is necessary to have structured policy and political dialogues among key Ministries, governmental agencies, private sector actors and academia/research institutions. This is a critical element to guarantee policy coordination, alignment of priorities, and strategic planning, and should be ensured nationally (through coordinated planning), regionally (by ensuring alignment between national priorities and the regional integration agenda), internationally (by actively participating in key multilateral initiatives to ensure that priorities are aligned).

While Ghana has strong institutions, there are gaps in terms of specific agencies that can (i) coordinate productivity and competitiveness efforts; (ii) support national innovation systems; (iii) accompany property rights; and (iv) ensure overall coordination and monitoring of policies across ministries and agencies. There is also a need for an independent body to take a key role in oversight to ensure effective implementation, support government in policy analysis, and translate policy into action.

3. POLICY OPTIONS

Using the mining sector as an anchor client, the purpose of this exercise was to identify the challenges and the gaps that currently limit the potential to stimulate deeper production linkages. It further examined the potential for broader industrial development, notably through clusters and stronger domestic supply chains. The Report proposes the following policy options to support the shift in paradigm towards a more sustainable economic model:

3.1 Addressing structural weaknesses

(i) Getting a detailed knowledge and understanding of upstream mining supply chains, in terms of (i) the types of activities that require targeted support based on their strategic importance to the mining sector but also to other economic sectors; (ii) the current capacity in Ghana in terms of productions, skills, markets, and how can these be scaled up in Ghana and abroad; (iii) the elements to upgrade the value

chain to ensure the sustainability of domestic suppliers over time. It is important to take into consideration the market dynamics, particularly in West Africa.

(ii) Reinforcing institutional coordination, at various levels, to ensure policy coherence, coordination and consistency. This means having an **inter-ministerial coordination mechanism under the leadership of the Economic Management Team and the Vice President**, which will ensure that all stakeholders are involved in the implementation of the reform programme and in turn, commit to take concrete actions to improve productivity of supply chains. Key performance indicators can be defined to ensure results and to facilitate monitoring of progress, and to allow policy adjustments when needed.

(iii) Ensuring policy coherence and coordination through structured policy and political dialogues among key Ministries and government agencies to guarantee policy coordination, alignment of priorities, and strategic planning.

(iv) State-business relations and collaborative partnerships – successful cases in Chile and elsewhere have shown that there is also a case to support strong collaborative partnerships with various types of stakeholders such as firms, governments, and research institutions to strengthen the competitiveness of local firms as well as increase their productive capabilities. To be truly effective, state-business relations must be a regular feature of Government consultative processes and must be well-structured so that both partners can find consensus on key strategic issues, related policy orientations regarding industrial development and practical measures to support to business development.

(v) Addressing competitiveness challenges, with particular attention given to macroeconomic challenges, such as exchange rate volatility and inflation; removing obstacles to industrial development through dedicated measures to foster technology absorption; encouraging technology and knowledge transfer and innovation; access to finance in particular for SMEs; and boosting technological readiness and improving access to emerging technologies.

3.2 Increasing the number and depth of local supply industries

(i) Creating the necessary conditions to stimulate suppliers' development by:

1. Improving the **overall business and investment climate** by removing all unnecessary barriers to production and to productivity. In particular, the following issues must be addressed as priorities:

- *Streamlining procedures* for business creation by setting up a one-stop shop to make procedures simpler or faster and reduce delays.
- *Facilitating property registration*. This has a direct impact on access to credit for domestic firms (property titles are often required as collaterals). Measures include reducing the number of procedures and time required to deliver the titles.
- *Improving tax administration* by streamlining the number of taxes to be paid and reducing the number of procedures, notably by creating online systems and computerising the tax administration.
- *Reducing the cost of trading across borders* to boost exports and facilitate the integration of Ghanaian supply chains in regional and global value chains.

2. Creating the necessary business environment **for local suppliers** to develop products or services that are not necessarily available in the market place. This includes:

- providing incentives and technical support to meet technical specifications and regulatory compliance; standards, human and safety requirements to improve quality, reliability, and time delivery;
- providing administrative support to respond to tenders to upgrade business and managerial skills;
- reducing the cost of doing business for local suppliers; and
- sourcing locally for suppliers to the mining industry and domestic and international logistics.

(ii) Increasing the level of industrialisation. In order to address the weakness of the current industrial tissue, it is necessary to:

- Strengthen the industrial policy with clear mechanisms to create necessary institutional structures and provide specific incentives;
- Diversify the production basket and intensify value creation and value capture. The BGR model provides a starting point to find niche markets and product



potentials for the mining sector. Many of those items have other industrial applications and can therefore be used more widely.

- Address informality;
- Identify the systemic difficulties facing small firms and preventing them from growing to a size where they can become self-sustainable.

3.3 Boosting productivity

(i) Improving labour productivity by:

- Improving work force efficiency, including the quality of health, education and training, at all levels. Education and skills should be looked at in terms of both the skills needed to capacitate the current work force but also in terms of the skills of the future work force.
- Having an effective and flexible labour market that takes on board the current high level of informality in the country, maintains a balance between job protection and firms' productivity, and ensures decent job conditions. Specific policies to improve the labour market includes (i) ensuring mobility of labour, in particular occupational mobility and industrial mobility; (ii) providing



continuous training and skills development; and (iii) providing public access to information about job vacancies.

- Improving the secondary and tertiary enrolment ratio.
- Providing higher quality of expenditure on education.
- Improving the adaptability of the current curriculum to the needs of the job market. Certain subjects such as Science Technology Engineering and Mathematics (STEM) must be particularly put forward.

(ii) Improving firms' productivity:

(a) Government may consider **establishing and coordinating national innovation systems** to initiate, stimulate, and diffuse knowledge and technology across economic sectors. It is therefore important to address market and systemic failures, and combine action on horizontal issues such as education, training, access to finance, or knowledge dissemination with vertical ones supporting specific sectors or technologies. It requires in particular:

- **Strengthening the innovation climate**, notably through an efficient intellectual property rights regime and solid institutions to protect innovation and ideas.
- **Setting up institutions to support firms' productivity and competitiveness. A National**

Competitiveness and Productivity

Council could be set up to stimulate and generate productivity and quality consciousness and drive the productivity and quality movement in all sectors of the economy.

- **Addressing under-investment in R&D** by raising public and private spending and collaboration to provide the right space and incentives for researchers.
- **Partnering with the business community** in particular in strategic sectors and priority areas for industrial development and supply chain development to help the diffusion of technologies to domestic industries and SMEs in particular.

(b) **Improved and cost-effective logistics**, such as the infrastructure network and storage and handling capacity but also items such as time management, quality of products, frequency and speed of IT connectivity, etc. In particular, it is necessary to:

- Scale up the availability and quality of infrastructure.
- Provide dedicated support to quality improvement and setting up cost-efficient logistics systems and related infrastructure, to facilitate industrial activities.

(c) **Improved supply chain reliability.** Effective government support is needed to support domestic suppliers in sustaining their

activities. This includes eliminating all the bottlenecks that affect supply chain operations.

3.4 Promoting, attracting and facilitating investment

It is important to review the current investment package in view of the new priorities, and to ensure that there are no inconsistencies across various policies, such as free zones, local content, investment, and trade policies. Bottlenecks perceived by investors as acting as deterrents to investment or business expansion must be addressed.

It is equally necessary to facilitate business-to-business (B2B) matchmaking to allow companies to benefit from technological and knowledge transfer.

Together with the investment package, Ghana can consider providing and securing market access opportunities for suppliers with mining industries within the country and abroad, and with other industries outside the mining sector. This means putting in place mechanisms such as:

- An online database where national and regional procurement/tender opportunities are published for local suppliers. These should also include guidelines and deadlines as well as frequently asked questions to help local suppliers meet the specifications.
- Networks of suppliers, per category of products/ services; An online platform for information exchange regarding standards, requirements, tender procedures. The platform can provide models for compliance;
- A dedicated unit to support suppliers with market access information/ opportunities (i) by industry in the mining sector and beyond, and (ii) in Ghana and abroad. A special dedicated window can be made for SMEs.

3.5 Setting up a national suppliers' development programme

One of the proposals is to set up a **National Suppliers' Development Programme (NSDP)** to create and maintain a network of competent suppliers and to improve various suppliers' capabilities that are necessary for a mining company to meet its competitiveness challenges. A functional and effective NSDP would be based

on two distinct but complementary components, both aimed at enabling suppliers and their ecosystems to ensure they can deliver world-class products and services and meet changing competitive requirements. These are:

- A pillar to reinforce suppliers' skills and capacitate the workforce through the development of a skills strategy; labour market reforms; adapted training programmes; apprenticeship/internship schemes; adaption of school curriculum based on industrial needs; and
- A pillar to empower and support existing and new suppliers; identify future potential; consolidate the network of suppliers; create the necessary support services and infrastructure for a competitive supply base; and facilitate access to technology and know - how, including through business match - making with international investors.

The programme will necessarily have to be implemented through an effective multi-stakeholder process, including the participation of government authorities, private sector actors and academic/ research institutions.

3.6 Strengthening industrial clusters

Industrial clusters are an effective way to create the conditions for supply chain development. In that regard, it is necessary to review existing policies around Free Zones, which are currently essentially focused on exports, and explore ways to extend incentives to industries that linked to mineral supply chains. Today, it seems that companies that produce for export have more favourable conditions than do supply industries based in Ghana, despite policies to foster local content. This highlights that accessing the regional market is fundamental. Success in this will require a better linking of industrial, mineral, trade, and free zones policies, which were historically characterized as largely independent and lacking coherence.

It is therefore proposed to establish mineral suppliers' clusters as an integral part of the One District One Cluster policy and in line with the Strategic Anchor Initiative. In order to entrench transformation as a main tenet of economic clustering, these clusters will build on the mineral sector specialization that has developed over time, and link it with the framework and existing examples of economic zones. This initiative thus fits well with the new agenda, which seeks not only factories but integrated industrial clusters.

3.7 Fostering capabilities

To compete effectively in the global market, mining companies must have a network of competent suppliers. It is therefore important to conduct an in-depth capabilities assessment to have a detailed understanding of skills demand and supply and hence be able to determine the gaps, needs, and solutions to address immediate shortages and mismatches of skills and talents that are needed along the suppliers' value chain.

As technology evolves and as industrial capacity increases, the capabilities assessment will allow government and companies to monitor the evolution of skills demand, and be in a position to forecast future skills needs.

Possible tools to improve knowledge of labour market include:

- Developing a national skills strategy;
- Setting up a labour market observatory;
- Creating a catalogue to reference existing skill development programmes to avoid duplication and ensure quality and coherence, in line with Government's policy and firms' priorities;
- Regularly analysing vacancies and job advertisement to keep abreast of market needs;
- Regular surveying of the unemployed;
- Analysing the labour market that goes into details about skills sets, per category of workers; and a sectoral of skills concentration per economic activity;
- Setting up of a forecasting tool for future jobs as technology requires adaptation.

Key steps needed to address the weaknesses and challenges regarding employment:

1. Adapting the curriculum and teaching styles: moving towards more scientific educational training and flexible thinking

This will involve supporting and designing adapted curriculum and educational programmes together with the private sector, including increased focus on Science, Technology, Engineering and Mathematics (STEM) and the use of ICTs. For those who chose to engage in technical and vocational training (TVET), the system needs to equip people with the ability to work in a complex and digital environment, process complex information to be creative and communicate effectively to meet today's requirements but also to prepare for future challenges. In this regard, the educational

framework must be modernised to offer life-long learning opportunities, teach students/trainees to think critically, and encourage the sharing of knowledge across educational fields.

2. Scaling up institutional capabilities

The Ministry responsible for Education needs to develop a tool to map existing skills sets and to forecast potential types of skills that would be needed as the industry evolves. As technology and automation evolve, this will enable the country to invest in human capacity development ahead of time in order to meet the needs of the industry.

It is also necessary to strengthen academic and training institutions:

- in terms of physical support, by helping them to acquire the latest materials and scientific equipment needed to train students and workers;
- with the best qualified trainers, by equipping students the highest level of competencies and skills. Some rural areas may be suffering from weak training structures with the absence of higher education or tertiary facilities.

In addition, in order to maximize the use of technology and foster innovative capacity, the government can **facilitate the creation of business incubators, innovation hubs, and technological labs**, either by providing physical environment, by giving financial support to purchase the highest quality materials and equipment, or by incentivising private operators to host such facilities (in which case, the Government would then provide bursaries to workers to use those facilities).

Patents and industrial designs are important tools for the development of technical solutions for the mining sector. In Ghana, it seems that local businesses do not sufficiently take advantage of such tools, especially those that are already in the public domain. Though considered as 'outdated' they can still be useful; SMEs in particular can improve them to create new innovations. It would therefore be useful to have an online tool to disseminate the information regarding patents, industrial designs, and copyrights. Ghana can also host a regional centre of excellence to provide training and technical expertise to other countries in the region.

3. Training and skills development

Human resources and skills development is at the heart of a knowledge-based economy. A number of policies can support human resources and skills development:

- Regularly updating and reviewing skills strategies to allow for adaptation to changes in the job market.
- Customising training programmes based on an understanding of current and future needs to reduce skills gaps and minimise mismatches and missing skills sets that are affecting the recruitment of local labour force.
- Providing continuous and on-the-job training to ensure the employability and mobility of staff in Ghana and abroad.
- Addressing disparities across localities and regions, in particular between rural and urban regions, to materialise the One District One Factory policy, and aim of developing industrial clusters in each region.
- Working with the business community to provide targeted funding to joint educational programmes and research projects.
- Attracting and retaining talents in the country.
- Integrating the potentialities that currently lie in the informal sector and within in the work force.
- Promoting programmes to provide raining or adult education to economically inactive people.
- Retaining attendance in training programmes. Flexible vocational training programme can be put in place in regions with low retention rates to allow drop-outs to re-integrate the programme within a determined period of time so they can obtain a recognised certificate for competencies gained successfully during the course of their training.

4. Movement of talents, skills and competencies in Ghana and in West Africa

It is also critical to remove institutional and trade barriers that impede the movement of professionals and participation of skilled and semi-skilled labour across West Africa, and internationally. Therefore, government can consider focusing on:

- The movement of skills and talent across the country and in the region. Dedicated programmes can be put in place to create well-functioning regional networks of professionals, and by profession and by sector in Ghana and in West Africa. Ghana can become a hub of excellence
- Professional competencies in fields such as engineering or for technical graduates are generally subject to individual countries' accreditation system. Cooperation among national professional councils is therefore important to facilitate the movement of professionals, notably through mutual recognition agreements to facilitate accreditation procedures and mechanisms for equivalence.
- Joining international mutual recognition agreements is one way of ensuring that national qualifications are recognised. Ghana should therefore consider joining international Accords, and should encourage other West African countries to do the same. This will facilitate the recognition of qualifications and hiring of workers across the region.

The full report details the entire analysis of the mineral sector, experience with clustering and value addition, and basis on which these policy recommendations were devised.

