



INTERGOVERNMENTAL FORUM  
on Mining, Minerals, Metals and  
Sustainable Development

IGF Guidance For Governments:  
Leveraging Local Content Decisions  
for Sustainable Development

## CASE STUDY

# TANZANIA: HORIZONTAL LINKAGES

## THE CHALLENGES OF MULTISTAKEHOLDER INFRASTRUCTURE PROJECTS

### OVERVIEW

#### LEVEL OF OPERATION:

Multinational

#### GOVERNMENT ROLE:

Program facilitator

#### LINK TO POLICY ADOPTED:

see [Tanzania Commission for Science and Technology](#); [Mineral Policy of Tanzania \(1997\)](#); [Mineral Policy of Tanzania \(2009\)](#); [Central Corridor Transit Transport Facilitation Agency](#)

#### KEY COMMODITIES:

Hydropower, gold, tin, phosphates, iron ore<sup>1</sup>

#### TOTAL NATURAL RESOURCE RENTS (AS % OF GDP) (2015):

6.9 per cent<sup>2</sup>

#### NATIONAL EXTRACTIVES COMPANY:

Tanzania Petroleum Development Corporation

#### UNDP HUMAN DEVELOPMENT INDEX VALUE (2016):

0.531 (Global Rank 151)<sup>3</sup>

This case looks at Tanzania's challenges in creating horizontal linkages. Capabilities-led linkages via a national system of innovation are challenging in a setting where there are few existing upstream or downstream linkages, and low existing skills development.

As to infrastructure-led linkages, the study examines the example of the Central Corridor (or Central Development Corridor, CDC), which highlights the difficulties of coordinating and implementing such large-scale multistakeholder infrastructure projects. The case study also shows how external factors can influence the project. Most commitments from mining firms will be contingent on mineral prices. The level of financing often requires multilateral development financing,

<sup>1</sup> Central Intelligence Agency (CIA). (2017). *The world factbook*. Washington, DC: CIA. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/fields/2111.html>

<sup>2</sup> World Bank Group. (2017). *Total natural resource rents (% of GDP)*. Washington, DC. Retrieved from <https://data.worldbank.org/indicator/NY.GDP.TOTL.RT.ZS>

<sup>3</sup> United Nations Development Programme. (2016). *Human Development Reports: Tanzania*. Geneva, Switzerland. Retrieved from <http://hdr.undp.org/en/countries/profiles/TZA>



which brings another set of requirements into the project. Things are even more complicated when an infrastructure system involves multiple countries, adding a requirement for interstate cooperation. Ultimately, these internal and external factors can cause seemingly worthwhile projects to be delayed or abandoned.

## THE MINING SECTOR IN TANZANIA

Mining has grown in importance in Tanzania over the past 20 years, following liberalization of the sector in the late 1990s. As part of wider economic reforms, the Mineral Policy of 1997 and the Mining Act of 1998 effectively ended exclusive state access to the country's mineral wealth.<sup>4</sup>

Tanzania began to attract increasing interest as commodity prices rose in the late 1990s and early 2000s. The most substantial development was in the gold sector, concentrated mainly in the northwest region. Since 1994, six new gold mines have begun operations, and the country has become the third largest gold producer in Africa. Two of the top global gold companies, Barrick Gold operating as African Barrick Gold (today Acacia Mining), which operates there four mines, and AngloGold Ashanti are involved in Tanzania.

Seeking to rationalize governance of the sector and maximize the contribution of mining to the national economy, the government replaced the 1997 Mineral Policy with a revised version in 2009. As of this writing in 2018, Tanzania is again reforming its mining governance framework as the government, under the new President, John Magufuli, argues that the sector is not contributing enough to the country. A range of laws have been amended or introduced, which effectively grant the government much greater bargaining power (e.g., to renegotiate terms which Parliament considers “unconscionable”),

greater oversight (e.g., the establishment of a Mining Commission), and greater revenue (e.g., through a tax on mineral exports and increased nationalization).<sup>5</sup>

In spite of its natural resources, Tanzania remains one of the poorest countries in the world, heavily dependent on agriculture and with underdeveloped industrial and service sectors. In 2013, the manufacturing sector accounted for 8.5 per cent of GDP, and mining for 3.3 per cent. While mining's contribution to GDP is relatively small, it is a major contributor to exports and foreign exchange (mainly gold).

## BUILDING LINKAGES THROUGH THE “NATIONAL SYSTEM OF INNOVATION”?

The Mineral Policy of 1997 suggests that Tanzania policy-makers were aware of the importance of a functional National System of Innovation (NSI) to generate spillovers and development from the mining sector. This vision assigned government a role in:

- “establishing centres of technical excellence in various fields for capacity building, and setting up mechanisms for exchange of knowledge and experience” (Tanzania Mineral Policy 1997, 21).
- “promoting linkages among universities, colleges, research institutions and industry for the productive utilization of their inter-dependencies for mineral sector development” (Tanzania Mineral Policy 1997, 28).

This policy vision was consistent with the objective of the Tanzania Commission for Science and Technology of “coordinating science and technology research and application for the development of Tanzania.” However, recent evidence indicates that its policy objectives were not fully fulfilled.<sup>6</sup> As late as 2011, no centres of excellence had been created.

<sup>4</sup> While there had been some private operators in the 1980s and early 1990s, there was limited major foreign direct investment.

<sup>5</sup> Leon, P., & Müller, E. (2017). *Significant recent changes to Tanzania's mineral law regime*. Herbert Smith Freehills LLP. Retrieved from <https://www.herbertsmithfreehills.com/latest-thinking/significant-recent-changes-to-tanzanias-mineral-law-regime>

<sup>6</sup> Mjimba, V. (2011). *The nature and determinants of linkages in emerging minerals commodity sectors: A case study of gold mining in Tanzania* (MMCP Discussion Paper No 7). Cape Town, the University of Cape Town, and Milton Keynes, the Open University. Retrieved from <https://open.uct.ac.za/handle/11427/20170?show=full>.



Existing higher educational institutions struggled to offer mining-related curricula and generate adequate generic and sector-specific training and skills development. There was only “minor

**All this underscores that Tanzania is probably missing key prerequisites for horizontal linkages to develop.**

and inadequate” interaction between the mining sector and universities, which displayed embryonic research capabilities that did not extend into highly technical mining science. Implementation was also not apparent in other relevant government bodies. For example, the Ministry of Trade, Industry and Marketing had no specific program for the fast-growing mining sector, and the country’s industrial research body (Tanzania Industrial Research and Development, or TIRDO) did not carry out any mining-related R&D. Lack of effective and coherent implementation means that the vision of an NSI as outlined in the Tanzania Mineral Policy remains unfulfilled, with few tangible results.

Meanwhile, technical skills shortages in Tanzania limited the opportunities for skills from the mining sector to migrate to other sectors of the economy. Instead, because of better wages, the mining industry tends to draw skills away from other sectors, harming their competitiveness (at least in the short run). The general opinion among industry insiders was that large-scale private sector mining was still developing and needed to address skills and experience deficits before horizontal linkages could occur.

Recently, there have been attempts to improve the technical skills of the mining workforce. For example, in 2015 the Australian government provided funding to develop the Vocational

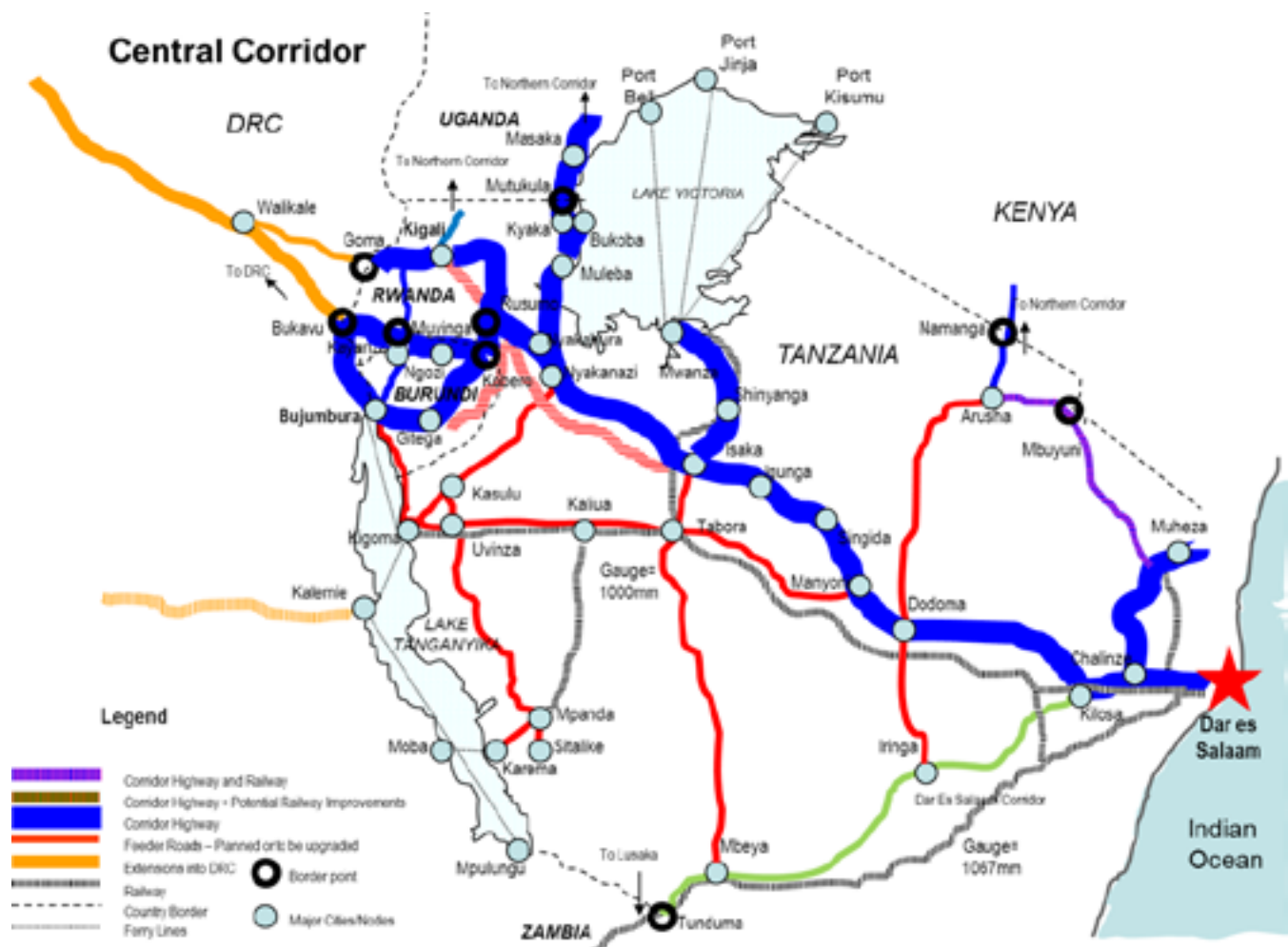
Education and Training Authority (established in 1994 in Moshi) into a Centre of Excellence for Skills Development in the Extractives Sector. This recent reform enables mining companies to play a greater role in training employees. It also places targets on local employment

(defined as Tanzanian nationals), which must be included as part of a local content plan. However, upstream and horizontal linkages will be difficult to create due to low industrial capacity, regional competition, a difficult investment environment (worsened, from a foreign investor’s perspective, by the reforms), and the persistent lack of technical skills. All this underscores that Tanzania is probably missing key prerequisites for horizontal linkages to develop.

## MULTIPURPOSE INFRASTRUCTURE DEVELOPMENT

The CDC (Central Corridor or Central Development Corridor) is a logistics system defined by three main elements: its port, railway and road systems connecting the Tanzanian maritime port of Dar es Salaam with the Great Lakes hinterland. Its reach extends into Rwanda, Burundi, the Democratic Republic of the Congo (DRC) and Uganda. The Central Corridor links the mining region (gold and nickel) in the interior<sup>7</sup> with the port of Dar es Salaam and runs through fertile agricultural regions in Tanzania.

<sup>7</sup> Tanzania’s cluster of gold mines is situated at the northwest extreme of the country’s part of the CDC.



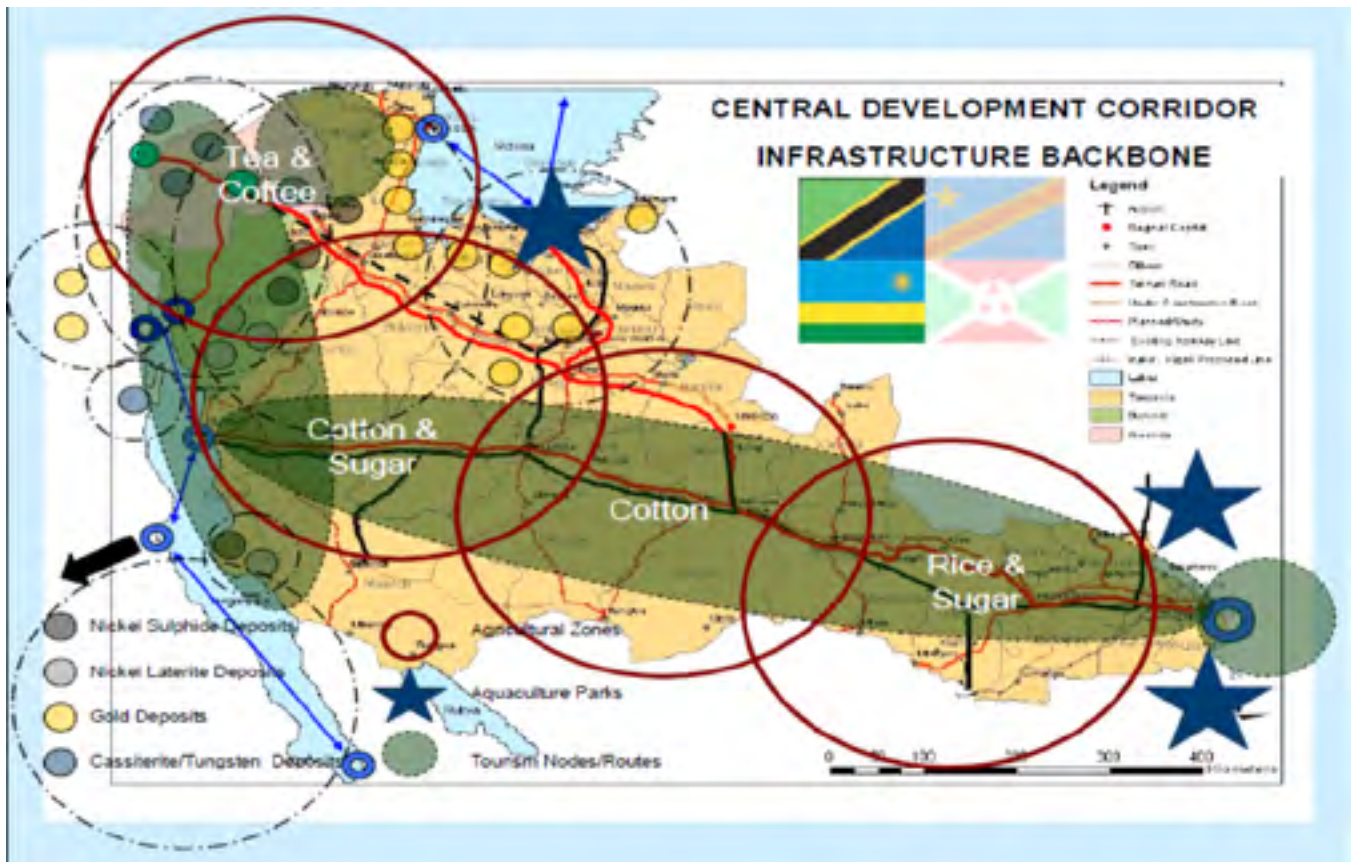
**Figure 1. Tanzania's Central Development Corridor**

Source: Mjimba, 2011.<sup>6</sup>

The CDC needs substantial core infrastructure investment, including improved road networks, a rail upgrade and extension, port facility upgrades, increased electricity generation and an expansion of the electricity grid. Since 2005, much work has been completed in understanding the key economic and infrastructure drivers of future corridor development. In 2006 the Central Corridor Transit Transport Facilitation Agency (CCTTFA) was established as a multilateral agency formed by the five national governments to coordinate and implement the CDC. Each country is ultimately responsible for building and maintaining its part of the infrastructure,

although some multilateral agencies may commit to funding across multiple countries. Many key anchor investment projects have also been identified, which, if realized, will provide an infrastructure platform for more diversified economic growth and development.

<sup>6</sup> Id. note 6.



**Figure 2. CDC minerals deposits and agricultural opportunities**

Source: Mjimba, 2011.<sup>9</sup>

A range of potential mineral development opportunities<sup>10</sup> could create sufficient demand to make the necessary enabling investments in transportation and energy infrastructure economically viable. Thus, CDC has focused on securing a critical mass of investment commitments that would allow the funding of large-scale infrastructure. A series of studies has made a strong case to develop the infrastructure to match the timing of mineral investments. Through private investment, the mineral wealth would be used to finance core infrastructure upgrades and would generate tax revenues for publicly-financed secondary and tertiary infrastructure investment. Beyond a consideration of anchor mining projects,

the potential impact emerges from greater regional trade flows and investment opportunities into the agriculture, fisheries and aquaculture sectors, as well as tourism.

However, the provision of infrastructure to enable the realization of economic opportunities within the CDC requires the alignment of complex institutional arrangements for the provision and operation of parts of that infrastructure system. The quality of hinterland access depends on the smooth cooperation of many economic agents, such as terminal operators, freight forwarders, transport operators, port authorities, and government institutions, including customs. Since these actors do not gain all the benefits from

<sup>9</sup> Id. note 6

<sup>10</sup> These include the existing Tanzanian gold mines, two major nickel sulphide mines in northwest Tanzania (Kabanga) and Burundi (Murumera), one new gold mine, and two further gold prospects being developed in South Kivu in the DRC by Banro, three lateritic nickel mines in Burundi, a number of coltan, tungsten and cassiterite mines in north and south Kivu in the DRC and a number of new gold prospects in north-western Tanzania.



cooperation, they effectively face a collective action problem.<sup>11</sup> For example, providing greater access to interior infrastructure without port reforms essentially means a shift in the constraint rather than a resolution of it.

To provide one example, the Tanzanian railway system was conceded in 2007 for 25 years to Tanzania Railways Limited (TRL), a private company controlled by RITES Ltd. of India (51 per cent, with the government owning the remaining 49 per cent). The arrangement provided oversight and monitoring powers, as well as the responsibility for implementation of future investments in the railway to a 100 per cent government-owned entity, Rail Asset Holding Company (RAHCO). Within three years, the concession failed and was terminated. Due to problems with the TRL railway and congestion and inefficiencies at the Dar es Salaam port, the CDC lost business to competing logistic routes.

Despite considerable efforts to facilitate the necessary coordinated decision making between public and private actors, little real progress in CDC projects has occurred. A growing gold mining sector and an impending anchor investment in a large-scale nickel mine both in northwest Tanzania (alongside other nickel and gold prospects in Burundi and eastern DRC respectively) were expected to provide the impetus forward. However, the Kabanga nickel project by Xstrata was derailed due to the railway dysfunction and the steep decline of nickel from USD 54,000 per ton in mid-2007 to less than USD 9,000 in early 2009 in the wake of the financial crisis.

A study conducted in 2011 showed that despite dialogue that had taken place through the Chamber of Mines, the CDC concept was not meeting strong response from mining investors except for a company interested in exploiting

bulk-export commodities, which requires substantial rail and road infrastructure, not just in Tanzania but at a regional level.

Recently the CDC has made some progress. In 2013 the Central Corridor Transport Observatory Project was launched by the Interstate Council of Ministers (the highest organ of the Central Corridor Transit Transport Facilitation Agency). Its aim was to enable the corridor to increase competitiveness by monitoring 28 indicators measuring performance of the corridor. These indicators cover transit times, value of transaction, costs of services and transport, and efficiency and productivity.

The CDC's Spatial Development Initiative (SDI) was set up jointly by Tanzania and Rwanda per an agreement signed in 2015. The CDC SDI agreement provides for access by other corridor countries, and in certain key economic sectors there is coverage of the Burundian and eastern DRC regional economies.<sup>12</sup> This was coupled with infrastructure

**Transit times from Rwanda to Dar es Salaam have fallen from a minimum of seven days to fewer than four days.**

investments, including modernization of the Dar es Salaam port. The port cargo dwell time has dropped significantly from 22 days in 2008 to less than 7 days in 2016. In the past five years, transit times from Rwanda, Burundi, and Democratic Republic of Congo to Dar es Salaam have fallen from a minimum of seven days to fewer than four days. This was possible due to investments in one-stop checkpoints along the corridor (reducing the number of police checkpoints and weighbridges) and the implementation of One-stop Border Services (Central Corridor Transit Transport Facility Agency 2016). The construction of a standard

<sup>11</sup> African Development Bank Group. (2014, July). *Tanzania's Seaports and Transport Corridors as Development Opportunity for East and Southern Africa*. NEPAD, Regional Integration and Trade Department - No. 3. Retrieved from [https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Regional\\_Integration\\_Brief\\_N-3.pdf](https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Regional_Integration_Brief_N-3.pdf)

<sup>12</sup> Although not signatories, Burundi and DRC participate in the CDC SDI process.



gauge railway from Dar es Salaam to Musongati in southwestern Burundi also commenced in late 2017 (at a predicted cost of USD 7.6 billion for 2,190 kilometres). Therefore, after 12 years the CDC project is still busy being developed and the exact form is likely to differ from initial plans.

It is worth noting that the investments in rail and the port upgrade were not funded by mining projects; rather, they were funded by the Tanzanian government to support broad economic development, including inland mining projects.

## KEY LESSONS

- NSI policies require buy-in across a range of government departments/agencies beyond the mining department, and cooperation of many more role players. The system of innovation extends to industry-focused government departments, research entities whether public or private, the mining sector, the manufacturing industry, etc.
- The availability and level of skills in the economy determine the absorptive capacity. Without an adequate skills base, horizontal linkages are likely to be limited. Skills and knowledge gaps need to be addressed first or in conjunction with horizontal linkages policies.
- The business environment determines how (or if) linkages occur. Policies to promote horizontal linkages are unlikely to be successful when the overall business environment is not conducive.
- Coordinating and implementing large-scale multistakeholder infrastructure projects is complex and subject to many internal and external constraints. The benefits of additional conditions on the route, type, and capabilities of the infrastructure should be weighed against the additional costs, including the cost of delays. Overcoming coordination constraints involves expending significant resources in the planning stages and requires time, commitment and political will.
- To guarantee multipurpose access to infrastructure, the government will need a high level of intervention. This may require it to retain ownership or control of the infrastructure, as well as adequate levels of regulatory capacity. It may also mean that government needs to invest proactively in the infrastructure, rather than requiring mining investors to construct shared facilities.
- The feasibility of mining infrastructure projects depends on the overall return on the investment. Requiring the development of multipurpose infrastructure lowers this potential return and increases risk.
- Monitoring infrastructure utilization is key to determining policy and its impact. Data on the many economic variables in infrastructure decision making are not readily available or easily observable. An independent observatory or statistical agency can help policy-makers to determine the baseline, set targets and monitor progress.



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