

**A COMPARATIVE STUDY OF FOREIGN DIRECT INVESTMENTS (FDIs) AND
THEIR CONTRIBUTION TO ECONOMIC GROWTH AND DEVELOPMENT OF
TANZANIA AND ZAMBIA (With Special Reference to the Countries' Mining Sectors)**

**The Tanzanite Value Chain Illustration of Key Issues, Challenges and
Opportunities
By Jackson J. Kilimba**

Submitted to: Prof. Rob Van Tulder
26/05/2008

THE TANZANITE VALUE CHAIN AND RELATED MINING CLUSTER IN NORTHERN TANZANIA	3
--	---

TABLE OF CONTENTS

1.0 Introduction.....	3
2.0 Mapping the Mining Cluster value chain for Tanzanite Mining in Tanzania.....	4
3.0 Key activities processes and transactions – Tanzanite Mining.....	4
4.0 Institutional environment: (i) internal to chain,& (ii) external	7
5.0 From value chain analysis to value chain developmentError! Bookmark not defined.	
6.0 Defining potential opportunities for upgrading.....	8
7.0 Defining the value chain development strategy.....	10
8.0 Monitoring the Impact of Interventions	13
Bibliographical Reference:.....	14

THE TANZANITE VALUE CHAIN AND RELATED MINING CLUSTER IN NORTHERN TANZANIA

1.0 Introduction

The concept of value chains is not an entirely new one. The older terminologies for the same concept include supply chains, commodity chains, and international production networks. Rather than focussing on the firm per se, the concept is much broader and looks at the bigger picture of the entire channel. While there are some methodological and analytical problems related to value chains (global, regional, country, sectoral, provincial and district level chains, for example), these cannot be taken as an excuse not to use this tool to improve socio-economic development where and when the benefits exceed the associated costs caused by these problems.

At what part of the chain level do we carry out appropriate intervention to enhance wealth creation among the poorer segments in society? Such questions while legitimate should not deter policy and decision makers from using value chain analysis to appraise points of entry for policy interventions. Thus, value chain promotion and development today refers to a process of identifying and developing unused market potential, primarily, but not exclusively in poor developing countries, for the purpose of creating new value, adding to incomes and generally reducing poverty. The underlying idea of value chain analysis is to promote growth opportunities by appropriately leveraging on marketing incentives and private sector investments as driving forces for development.

The objective of this paper, therefore, is to examine the value chain in the mining sector of Tanzania, focusing on tanzanite mining in the northern part of the country. There is often the issue of the resource curse phenomenon associated with the exploitation of natural resources that must be avoided as much as is possible. The “*resource curse*” is a phenomenon associated with resource rich countries that are *unable* or *unwilling* to put in place deliberate distributive and related facilitative policies (e.g. power, transportation, infrastructure and investments) that ensure equity in the distribution of the resulting abundant wealth, to its stakeholders.

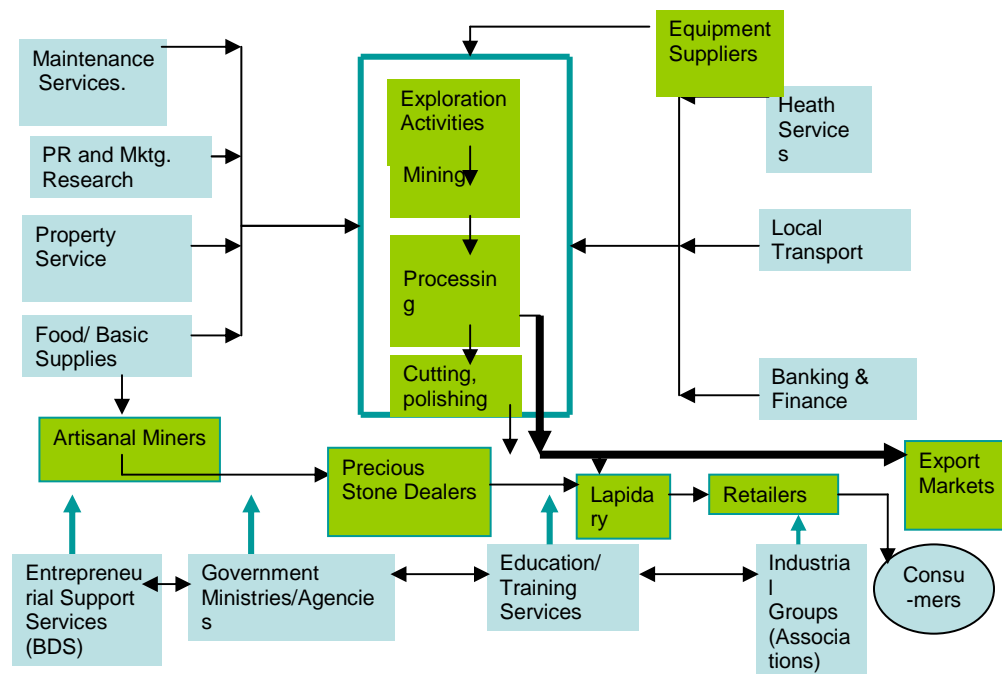
Resource curse theorists abound and have for a long time influenced the vast literature on natural resources and the curse they inflict on the countries that are abundantly rich in them. However, this research will argue that the curse is not inevitable. The curse is not an automatic feature. The curse can be exorcised even before it manifests itself. It can be prevented from taking roots in the countries that find themselves rich in natural resources, through deliberate actions of policy planners in deciding on how to exploit the resources, using what forms of foreign direct investments (FDIs), at what point in time, and how to handle and distribute the resulting wealth abundance for the benefit of all contributing stakeholders in society.

It is expected that the study will highlight the potential opportunities for foreign direct investments, not only in mines per se, but also in related business cluster developments associated with the dramatic growth of this sector in the country, to contribute to economic growth and development, in ways that make it possible to avoid the ‘*resource curse*’. In addition, specific constraints, key issues and challenges will also be highlighted while proposing ways and means to deal with them.

2.0 Mapping the Mining Cluster value chain for Tanzanite Mining in Tanzania

In this section the paper will present the conceptual framework for the tanzanite mining value chain, reflecting the key functions, the key actors and their relative location in the chain, end user, products and or services.

Figure 1: Tanzanite/Precious Stones Mining-Cluster: Tanzania



In the above figure (figure 1), the “*mining cluster*” players includes all key stakeholders, like, equipment maintenance service providers, public relations and marketing service providers, property developers, government agencies on mining sites, education and training services, industrial/labour associations and consumer groups, in addition to banking and finance services, as well as transportation and health providers. In figure 1, these are shaded light blue.

The mining chain is made up of actors directly engaged in value adding economic activities. They are shaded in light green in figure 1 above.

3.0 Key activities processes and transactions – Tanzanite Mining

The mining sector in Tanzania is a potentially bright spot for both local and foreign direct investments. From 1999 to 2003 this sector has grown at a compounded annual

rate of 56.1%, even though margins have continued to remain small due to the preponderance of exporting raw state minerals (Tanzania Economic Surveys 2003). Between 2001 and 2003, tanzanite accounted for 80% of the value of all gemstone production in Tanzania.

However with the regulatory changes that took place in July 2006, (banning exports of raw tanzanite), the situation has expanded the opportunities for forward integration into lapidary and jewellery business in the ‘tanzanite’ value chain. Presently the key players in the tanzanite value chain are principally

- TanzaniteOne Company Ltd; (mining in Block C)
- Tanzanite Trading Ltd;
- Tanzanite Marketing;
- Tanzanite Foundation;
- Arusha Region Miners Association; (mining in Blocks B and D)
- Tanzanite Africa Ltd; (mining in Block D)
- Kilimanjaro Mines Ltd, (mining in Block B), and
- Manyara Region Miners Association (mining in Blocks B and D).

The first four are actually the dominant player since 2005, when they formed a DeBeers-like arrangement, carrying out mining, buying from other miners and selling most of the produced tanzanite abroad. However, by 2004, blocks B and D were already home to some 10,000 miners working on small scale mines and accounting for nearly 65% of tanzanite production.

(<http://minerals.usgs.gov/minerals/pubs/country2003/tzmyb03.pdf>)

The diagram below highlights the key activities, processes, and transactions typical of the tanzanite value chain at present.

Figure 2: Current Tanzanite Value Chain- General

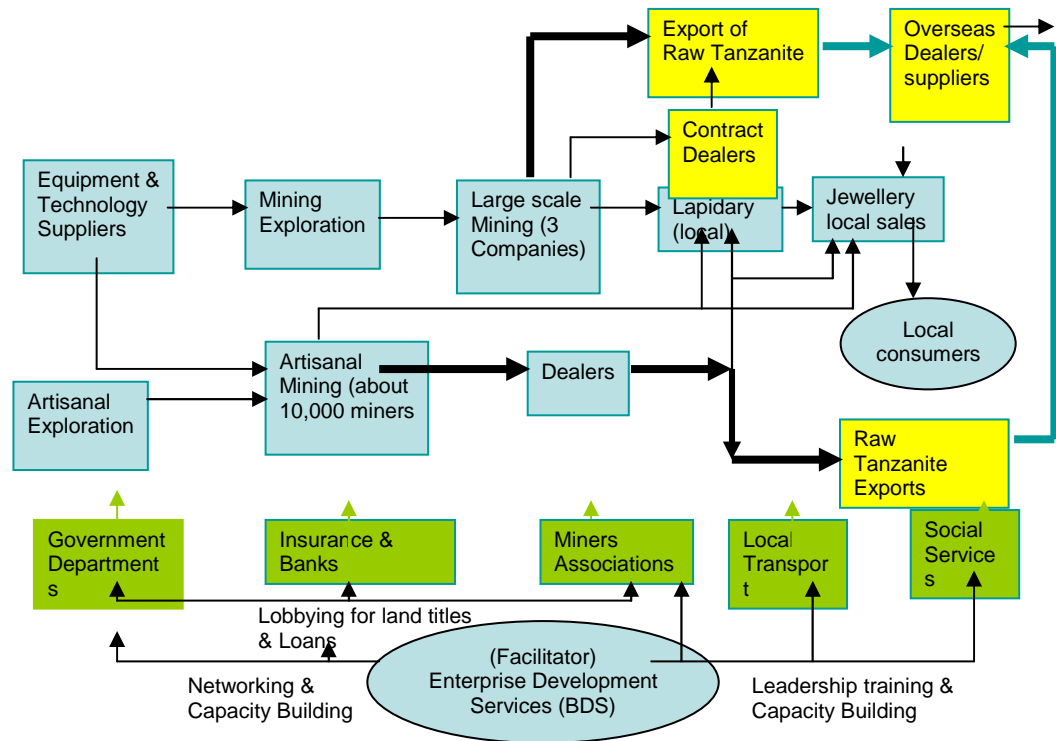


Figure 2 above shows the key activities and processes that can be identified in this value chain. The external actors are shaded yellow, non core service providers are shaded green, and key value chain players are in light blue figures. The value chain activities (economic/ value adding) are: (i) mining exploration, (ii) mining per se, (iii) ore crushing and processing, (iv) transportation, (v) dealers and dedicated/contract buying, (vi) jewellery manufacture, (vii) wholesale and (ix) retailing. Included in dealership activities is Tanzanite Trading

Mining and processing activities as well as buying of tanzanite production is now dominated by TanzaniteOne company. Almost all significant mining exploration activity is done by TanzaniteOne. The little polishing and cutting activity done locally is done by TanzaniteOne. The other two mining companies, Kilimanjaro Mines and Tanzanite Africa, (both locally owned) are comparatively smaller than TanzaniteOne Mining. Almost all of the artisanal miners are concentrated in blocks B and D. The buying arm of the company is Tanzanite Trading and targets production sales from the other mining companies and small scale miners. Tanzanite Marketing then sells the sorted tanzanite to five designated “sight- holders” overseas (USD 41.1 million in 2005) (TanzaniteOne Annual Report 2005).

4.0 Institutional environment: (i) internal to chain,& (ii) external

The mining sector in Tanzania falls under the jurisdiction of the Ministry of Energy and Mining. There is also a Chamber of Mining that oversees the development of the sector and serves the interests of large, small and artisanal miners in collaboration with Tanzania Miners Development Association (TAMIDA). The mining, exploration and research centre located in Dodoma serves as referral centre for all technological studies and related research. Tanzanite mining from now on will take on a different format as the government institutes a ban on the export of rough tanzanite. Foreign investors partnered with local investors are the most favoured for licensing purposes. It is thus expected that this will result into a dramatic increase in the demand for local processing of the mineral. This means more investments in lapidary and jewellery manufacture and capacity building for relevant local skills.

5.0 The Technological and Operating Environment

Since 2004, mining in blocks B and D have gone to deeper levels where it is more difficult to extract the tanzanite, requiring more sophisticated equipment investment to meet safety and quality standards. As the bulk of production in these blocks is by small scale miners who lack adequate capital, production has begun to suffer in a significant way. Recently (April 2008) most of these mines were struck by another disaster. Heavy rains caused heavy flooding in these areas. The mine shafts in blocks B and D were seriously flooded and some seventy lives were lost. This was largely due to little investment in mining safety related to rain water drainage around the mining shafts in blocks B and D

Mining in the other blocks A and C is presently by large scale operators, principally TanzaniteOne Mining Company. The safety and quality standards maintained in these blocks are higher than in blocks B and D, and did not suffer the flooding, for example.

Processing and selling of Tanzania is now controlled by Tanzanite Trading, the subsidiary of TanzaniteOne Mining.

Because of the fragmented nature of operations generally in the mining area, almost every business tries to do all things for themselves: bulk supplies procurement from long distances (mining equipment and food), health services, transportation, technological and social infrastructure development, small scale lapidary work, entrepreneurial development and employee capacity building. The result is uncoordinated growth and development of the mining area.

With very little tanzanite still being processed domestically due to the slow growth in lapidary capacity, the greater value of margins still accrue overseas, as is shown in the figure 3 on page 8 . With over 80% of production exported to India's Jaipur lapidaries (i.e. until 2006) the margins have been skewed in favour of overseas processors, cutters and polishers (jewellery manufacturers and retailers).

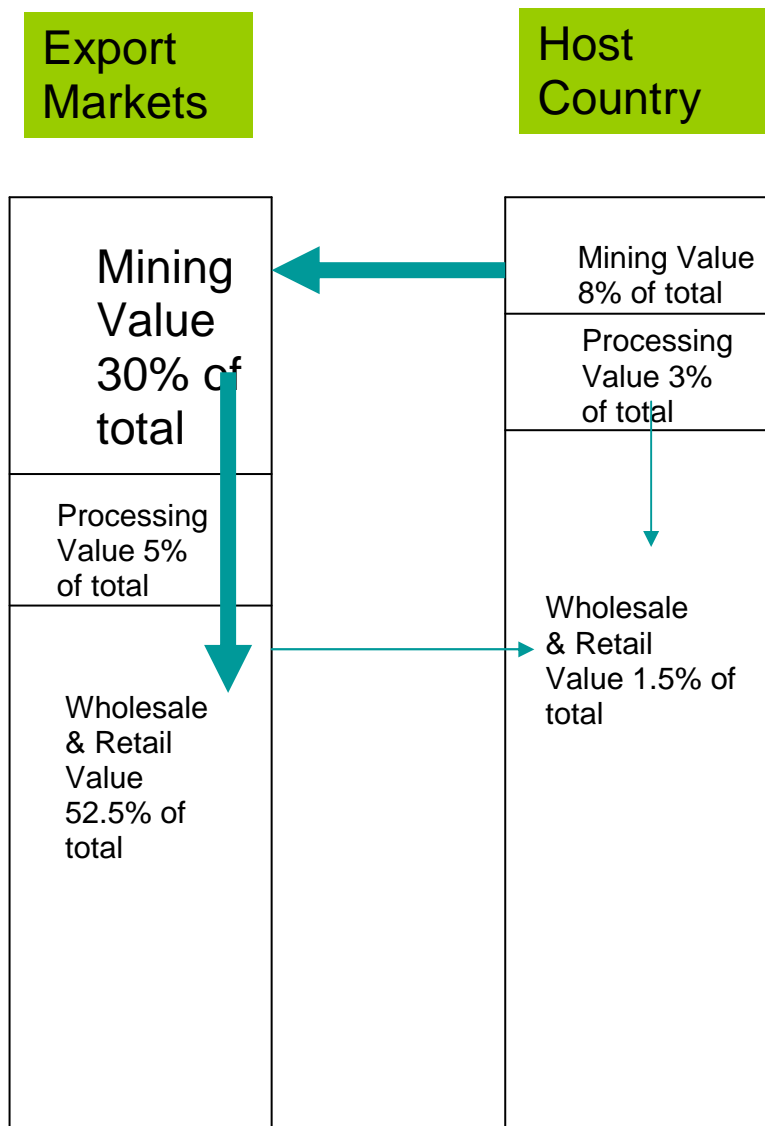


Figure 3: Value Chain Analysis of value Flows (Estimated, 2006, source: Author's estimates based on raw prices against polished prices (May 2008)

Figure 3 above illustrates in relative terms the values in the economic activities chain, based on 2008 prices of *raw tanzanite* at about US\$ 9-14 per carat and the prices of about US\$ 250-500 per carat of *polished/cut tanzanite*. Since about 80-90% of rough tanzanite is still processed overseas for lack of local processing and consuming capacity, the bulk of processing value (Jaipur, India) and retail value (USA, Europe and Asia) accrues overseas.

6.0 Defining potential opportunities for upgrading

Like most extractive industrial activities, tanzanite mining remains largely a capital intensive process, dominated by TanzaniteOne Mining Company Limited. The Mining Company is 75% foreign owned (largely South African?) at present. “5 % of the shares are owned by a local partner based in Arusha.

Among the activities that can be focussed upon include, (i) “*process upgrading*”. This refers to a situation where inputs are transformed to outputs more effectively by reorganising the process or employing superior techniques. (ii) “*Product upgrading*”, where a better quality product is produced or made and which carries a higher value and better price than previously.

While both (i) and (ii) above may be considered opportunities to be explored, their feasibility in the present stage of socio-economic development of Tanzania and in the context of Tanzanite mining, must be viewed differently from such value chains as in the food and vegetable staples for one main reason: the final product – jewellery is predominantly consumed outside the country and continent, coupled by the fact that tanzanite does not pose complex logistical challenges in terms of not being a bulky product. The result is that tanzanite mining in Tanzania continues to be associated with exportation of the bulk of the production (processed and unprocessed) outside the country closer to the final consumers in Asia, Europe and North America. A large part of the exported Tanzania has hitherto been processed at Jaipur in India, which then, re-exports most of the polished and cut tanzanite to the jewellery manufactures in the USA, Canada and Europe and some back to Tanzania jewellers!

Nevertheless, product upgrading is a real possibility in the area of lapidary work so that a larger volume of tanzanite can be locally processed in order to increase the volume and value of cut and polished tanzanite for domestic as well as export sales. An opportunity is thus available for foreign investors with the relevant technology and skills to partner with local businesses in order to train and process, cut and polish the tanzanite locally prior to exportation to world consuming centers. TanzaniteOne processes only a small amount at its local lapidaries in Arusha and some at its South African lapidaries.

(iii) “*Functional upgrading*” which involves repositioning a given firm at a higher level in the value chain. This may include vertical integration activities, to enhance supply accessibility and guarantee availability. TanzaniteOne (the main mining company) is already doing this through its owned subsidiaries, Tanzanite Trading (for local buying from small scale miners and registered local dealers), Tanzanite Marketing (for rough as well as cut/polished sales) and Tanzanite foundation (the CSR champion of the group). (*TanzaniteOne Annual Report, 2006*).

The smaller miners can also be better organised than they presently are (Manyara Region Miners Association (MAREMA) and Arusha Region Miners Association (AREMA) to carry out some of their own marketing and trading functions, independently from TanzaniteOne trading and marketing activities. The objective will be not to stifle the main miners operations but to enhance the quality, competitiveness

and sustainability of the economic activities of the entire tanzanite mining cluster in the longer term.

(iv) *Inter-sectoral shifts* may also be considered feasible such as in the consideration of “*business development services*” that will be able to service a wider business/entrepreneurial communities of both mining and non mining clusters. This seems to be an option that can greatly benefit the mining clusters through the partnering of foreign investors with locally fragmented and uncoordinated business development service providers.

The scenario will entail the coordination of the existing fragmented service providers and the associations into a solid network that is facilitative to the various suppliers (equipment, technology chemicals, etc;) and other service providers in and around the mining communities. If the business development services will be strengthened say, through appropriate capacity building of local mining and related entrepreneurs, and the development and design of a data base appropriate to the tanzanite mining cluster, this should enable the clusters to function more effectively by, for example, outsourcing those services that are not considered core to their business operations, (health, transport, financing, training/capacity building) from the “business development services” network of specialists. Such an arrangement will be able to cut operating costs and improve overall operating and production efficiency for each cluster player. If this is successful, the model could be replicated, with modifications to similar mining clusters across the country.

7.0 Specifying the Challenges & Defining the value chain development strategy

So far we have identified several key challenges facing the tanzanite mining industry in Tanzania. They include, (i) scarcity of appropriate technology for artisanal miners, (ii) uncoordinated individualised socio-economic development efforts in the mining area, (iii) lack of processing/polishing and cutting capacity, (iv) low price offering for raw tanzanite (one twentieth of the final value of polished and cut tanzanite) and therefore low gross margins for artisanal miners without their own polishing and cutting capacity, (v) single dominant buyer of raw and polished tanzanite and thus little bargaining capacity for small scale and artisanal miners for more favourable pricing in the consuming markets, (vi) and low multiplier/spill-over effects of tanzanite mining to related potential economic activities, as a result of the combined effect of all the above.

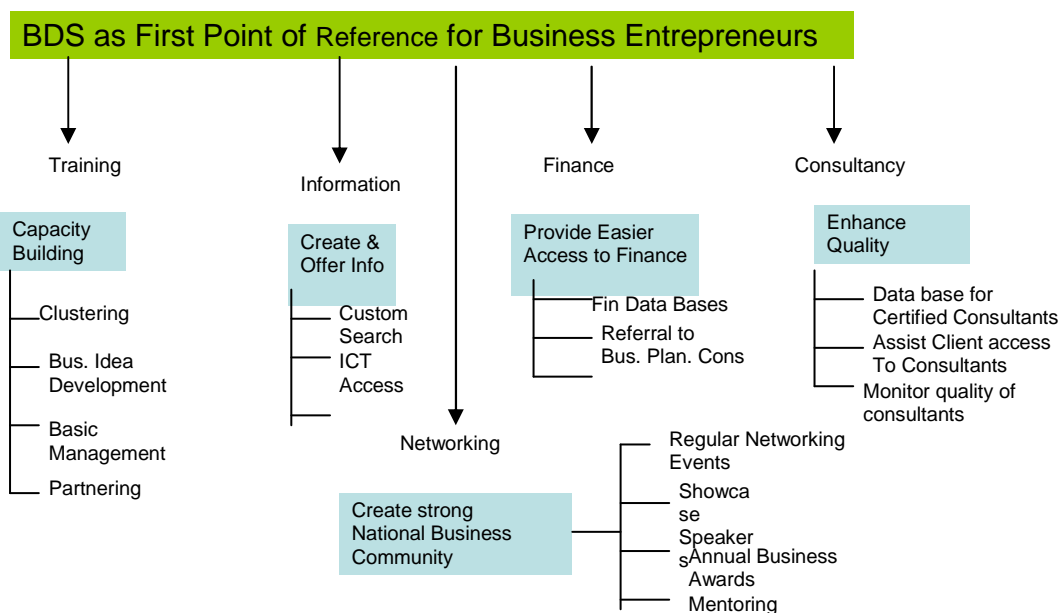
Given the foregoing and as amplified in figure 3 above, what potential opportunities can be identified at this stage? While a good number may be identified, the key business opportunities that can be identified to have significant potential for development and sustainability is product upgrading through increasing capacity for local cutting and polishing activities, and, the creation of a networked “business development services” (BDS) function/capacity, that can be established to service all of the tanzanite mining cluster’s key stakeholders, and possibly with a capacity to develop into a nationwide network, to service both large and small scale entrepreneurs in the country’s mining sector. Product upgrading through relevant

mining and processing technology improvements will raise the gross margin component retained at the local level and possibly guarantee higher incomes and reduced poverty levels. BDS potential is also indicated primarily due to the fact that in Tanzania, access to business development services offerings has been concentrated mainly in and around Dares Salaam, the commercial capital of Tanzania. The offerings at present are largely provided in an uncoordinated manner, targeting mainly basic micro enterprises or very large companies. Such services can be of great service to small and medium enterprises and other businesses in and around the mining clusters, in helping them to target better market niches, to improve their productivity and to serve more sophisticated customers in and around the expanding mining industry. To achieve this, it will require the development of some kind of a national BDS network capacity that could serve as a “one stop- service centre” for the bulk of small and medium enterprises in and around the mines, and other entrepreneurs around the province and possibly the country as a whole.

With mining in blocks B and D having gone to deeper levels since early 2004, where it is now more difficult to extract the tanzanite, more sophisticated technology and equipment investment, is now required in order to meet even the minimum safety and quality standards needed at those great depths. Since the bulk of production in these two blocks is by small scale artisanal miners who lack adequate capital, production has begun to suffer significantly. Tanzanite Trading reported in 2006 that the quantity and quality of tanzanite has continued to decline, as low level ores are exhausted. This situation presents an opportunity for foreign investors with capital to partner with these miners and mine in these greater depths. An active BDS node could be of assistance here in coordinating capacity building, consulting activities, information sharing, and facilitating capital and operating financial procurement

The diagram below summarises the BDS services potential worth considering:

Figure 4: Illustrating the Mining BDS Potential



Needless to say, the above business opportunity potential is not without constraints that must be addressed. Firstly, Mererani in Arusha Region of Tanzania is the only location to date that produces this unique precious stone. Eventual model replication may not be easy.

It is envisaged, therefore that a ‘business development services’ provider can be organised, linking foreign and local private sector investors, in coordination/consultation with the two mining associations in the area, namely AREMA and MAREMA. This business services provider will be able to organise services that the mining cluster players can outsource (equipment servicing, health and other social services, transportation, business training) as they concentrate and dedicate their efforts to main mining activities.

The diagram above (figure 4) illustrates how the BDS services can be usefully deployed in and among both large enterprises (multinational mining firms) and other smaller mining cluster entrepreneurs who will require the needed facilitation. But obtaining the agreement of all the possible key players is going to be one of the main constraints. A localised business development services unit will have to visibly show its usefulness to these miners used to “going it alone” on all services that are not core to their mainstay mining operations. Quick results will be required to be shown in a relatively short period of time.

Needless to say, the above business opportunity potential is not without constraints that must be addressed. Firstly, Mererani in Arusha Region of Tanzania is the only location to date that produces this unique precious stone. Secondly TanzaniteOne company may not look at this scenario very kindly, and they will have to be factored in.

Thirdly, the facilitator(s) may look at the mining cluster as too small, though one should not lose sight of the fact that while it may be focussed into tanzanite mining cluster, they can quickly become a nucleus for a nationally coordinated “Business Development Services” provider for the mining as well as other affiliated sectors.

Business development service providers, business trainers’ consortia, (foreign and local) could be invited to future roundtables so that they can examine the viability and rationality of this proposed solution. A mutually acceptable arrangement (e.g. some form of partnership) between interested foreign and local private sector investors can provide a framework for long term sustainability of the venture as the mining community around the mines gets more empowered with incomes and employment results to match.

Figure 5: From chains to partnerships: an illustration of Tanzanite Mining

CHAIN	STAKEHOLDER	ISSUES	INTERVENTION	ACTOR?
-Equipment Supply -Small/Large Scale Mining	-Equip/Input Suppliers -Artisanal Miners -Large scale Miners	-Imported inputs -Licensing& Land Ownership -Environmental impact -Organisation Capacity -Certification -Techno Capacity -Branding	-Mining policy/Regulation -Basic Business Skills training -Organisation Capacity building -Lapidary skills Capacity building -Capital financing -Environmental Impact Assessment -Linking demand To suppliers	-Tanzania Investment Centre -National Environment Mgt authority -Local Govt. -Ngo/BDS -Local/foreign Partners (BDS) -Central Govt. -International dealers
-Dealers -Lapidary Process	-Dealers			
-Wholesaling -Retailing -Consumption	-Wholesalers -Retailers -Consumers			

8.0 Monitoring the Impact of Interventions

If the suggested interventions are carried out in a coordinated and determined way, there will be visible changes to the quality of life and living to a wide number of communities in and around the Arusha region and beyond. The state of affairs before and after the operationalization of this business idea can be measured and changes determined to assess whether or not they are significantly attributable to the establishment of a more coordinated business development network for the mining cluster (quality and variety of product/service upgrades, new jobs created, incomes growth for the businesses within the cluster, for example).

Mining policies and regulations reviews will change the way tanzanite is exported out of Tanzania, (a finished rather than a raw/rough), a product of added value, and thus enhancing incomes to miners and associated institutions. A more organised tanzanite industry should essentially be able to avoid the occurrence of the ‘resource curse’ normally associated with abundance of such natural resources.

Basic business and management training will empower the artisanal miners to plan, implement and manage their operations better, and coordinate their operations more effectively, while better land allocation and management policies will reduce land triggered conflicts between miners and enable the mining environment to be greener and more community friendly.

Lapidary capacity building will ensure greater capacity to process all mined tanzanite production within the country and improve value of output, and incomes to many, including both the local and central government authorities via enhanced tax collections from larger and more efficient registered businesses in the mining cluster.

9.0 Areas for Further Research

Figure 5 above also summarises some of the key issues that are the subject matter for the DBA research to be carried out at a later stage. For example, how can FDI flows into the mining sectors of the two countries of Tanzania and Zambia be structured in order to avoid the typical resource curse scenario? Can FDI flows into the mining sectors be made to make a greater contribution to economic growth and development in a sustainable way? What key factors need to be set in place to guarantee achievement of such sustainability? Can investing multinational enterprises (MNEs) be expected to use some of their profits to go along with national development priorities of their host countries and, under what conditions? Can the proposed BDS model be replicated in Zambia’s mining sector clusters? The answers to these questions will provide some insights into solving some of the poverty and growth issues that affect the two countries, and the region in general.

Bibliographical Reference:

- AITKEN, B. J. AND A.E. HARRISON (1999) “Do Domestic Firms Benefit from Direct Foreign Investments? Evidence from Venezuela”, *American Economic Review*, Vol. 89
- ALFARO, L; A. CHANDA, S. KALEMIL-OZCAN AND S. SAYEK (2001), *FDI and Economic Growth: The Role of Local Financial markets*.
- BRIGITTE BACOU-KABERUKA (1991): *Exploiting the Mineral Potential of Africa* Blackwell Publishers.
- BISHOP, M; J. KAY AND C. MAYER (eds) (1994), *Privatization and Economic Performance*, Oxford University press.

- BLOMSTROM, M; S. GLOBERMAN AND A. KOKKO (1999), “ The Determinants of Host Country Spillovers from Foreign Direct Investments: Review and Synthesis of Literature”, SSE/EFI Working Paper Series in Economic and Finance”, no 239.
- CHEN, E. (1996) Transnational Corporations and Technology Transfer to Developing Countries, in UNCTAD, Transnational Corporations and World Development
- DE MELLO, L. R; Jr. (1997) “Foreign Direct investment in developing Countries and Growth: A Selective Survey”, *Journal of Development Studies*.
- FORTANIER, F Multinational Enterprises, Institutions, and Sustainable Development ISBN978-90-77219-38-6 (2008) Published PhD Dissertation.
- GERSHENBERG, I. (1987), ”The training and Spread of Managerial Know-How: A Comparative Analysis of Multinational and Other Firms in Kenya”, *World Development* Vol. 15, pp. 931-39.
- HASKEL, J. E; S. C. PEREIRA AND M. J. SLAUGHTER (2001), Does Inward Foreign Direct investment Boost The Productivity of Domestic Firms?” International Technology Diffusion/Sloan/ATP Project Report Presentation
- IMF: 2006 Regional Economic Outlook: sub-Saharan Africa (September 2006), Washington DC.
- KOKKO, A. (1996)” Productivity Spillovers from Competition Between Local Firms and Foreign Affiliates”, *Journal of International development*
- KOLK & TULDER: “Poverty as a Business Strategy”, in *World development Report* Vol. 35 No. 5 pp. 789-801.
- MOHAMMED IBRAHIM, “Mohamed Ibrahim’s Africa Governance Index 2007”
- OMAN, C. (2000) Policy Competition for Foreign Direct Investments, Development Centre Studies, ECD Development Centre.
- SOTO, M. (2000) “ Capital flows and Growth in development Countries: Recent Empirical Evidence, Technical Paper, No. 160, OECD Development Centre, Paris.
- SALA-I-MARTIN, X. AND E. V. ARTADI: 2004 “The Global Competitiveness Index” in *The Global Competitiveness Report 2004-5*.
- TANZANIA PLANNING COMMISSION ECONOMIC SURVEYS (2002-3) TANZANITEONE Annual Report, 2006
- UNCTAD: (2001) World Investment Report: Promoting Linkages, United Nations, New York, and Geneva.
- VAN TULDER, R. D VAN DEN BERGHE AND MULLER (2001), ”Erasmus Scoreboard of Core Companies The Worlds Largest Firms and Internationalisation”, Rotterdam: Erasmus University/ Rotterdam School of Management.
- VAN TULDER, R. & ALEX VAN DER ZWART (2006): *International Business – Society Management: Linking Corporate Responsibility and Globalisation*.
- World Economic Forum Survey 2007: *The Global Competitive Report 2006-7*. Hampshire, Palgrave.

XU, B. (1999) “Multinational Enterprises, Technology Diffusion and Host Country productivity Growth”, *Journal of Economics*, Volume 62, pp. 477-493