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Analysis of transport logistics challenges affecting freight forwarding operations in Malawi

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Malawi is one of the landlocked countries within sub-Saharan Africa which faces serious challenges in managing her transport logistics. The provision of predictable, reliable and cost effective transport logistics is constrained due to deficiencies in road and rail infrastructure, inefficient port and transit border operations that contribute to very high transport cost. This study was undertaken to analyse the challenges facing the transport logistics industry in sub-Saharan Africa specifically Malawi. Data was solicited from a structured questionnaire that was circulated to purposely selected members from the population of the business community with expertise in transport logistics. Results from the study are also supported by literature and indicated that high transport cost, deficiencies in road and rail infrastructure, inefficient port and transit border delays pose serious challenges to transport logistics.

Key words: Transport logistics, infrastructure, trade facilitation, landlocked countries.

INTRODUCTION

Malawi is one of the landlocked countries within Southern African Development Community (SADC) that faces challenges in accessing international markets for her import and export traffic. The provision of predictable, competitive and reliable transport services is suggested to be challenged due to physical deficiencies in the rail and road networks as well as inefficient border operations that contribute to very high transport costs.

The ratio of transport costs in landlocked Malawi is up to 55% of the landed cost of the product which is in contrast with other landlocked countries in sub-Saharan Africa which averages below 20% as landed cost in terms of transport (Faye et al., 2004). The increase in global business development through economic liberalisation has brought rapid transformation to international business,

making it highly competitive that demand for quality of transport logistics has a major bearing on decisions by buyers and sellers on which consumer market will be attractive for their products (Schramm, 2003). Freight forwarders face many challenges that are complex in nature in reference to transport logistics and factors facilitate the flow of international trade to global markets. In the developed world, movement of commercial trade has witnessed a well-coordinated transport network making it possible for the outcome of transport logistics performance to be reliable, predictable and cost effective (Tseng et al., 2005).

This study therefore, purported to identify and recommend the need to critically look at the challenges that are barriers to trade facilitation in Malawi and the

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need to focus on regional integration strategies.

The study hence analysed the challenges faced by the freight forwarders in transport logistics as they perform operations of trade facilitation and the challenges faced by landlocked Malawi in terms of her position in the landlocked sub-Saharan economies in terms of development infrastructures such as road and rail networks that provide corridor routing for commercial trade to international markets through neighbouring territories.

LITERATURE REVIEW

Transport logistics in the global world

From a global perspective, movement of commercial trade across the globe has witnessed a well-coordinated transport network through economic liberalization making it possible for firms in the industrial and retail sector to register tremendous growth, with particular reference to the developed countries (Schramm, 2003). Over the years, most developed countries have been able to grow their economies through the network of the global village approach where importers and exporters from Europe, China, Asia, Middle East, Japan and Africa interact online and establish business deals that involve moving a large volume of trade using several modes of transport consolidated by a number of players such as freight forwarders (Schramm, 2003). Transport logistics operations determine the efficiency of moving products to international markets irrespective of distance so long as it is well coordinated and is moved with speed, reliability and in the most cost effective manner (Tseng et al., 2005).

The marine transport sector has the largest share of global merchant trade covering 90% of international business volume. Large shipping lines move huge volumes of trade between ports and are complimented by hinterland intermodal transport services such as rail, road and inland waterways (Grosso et al., 2014). Much as the marine transport sector is relatively cheaper in terms of shipping goods, the movement of goods from ports to hinterland in terms of costs is rather prohibitive. Hartzenberg (2011) illustrated that shipping a car from Japan to Abidjan could cost one thousand five United States Dollars inclusive of insurance, while the cost of moving the same unit from Addis Ababa to Abidjan would cost five thousand United States Dollars.

Djankov et al. (2006) further observed that it takes 116 days to move an export container from factory in Bangui (Central Africa Republic) to the nearest port for processing logistics formalities for exporting cargo and yet the same export formalities would take only 5 days from Copenhagen and 6 days from Berlin. Again this confirms the disparity in logistics aspects between developed and developing countries to a certain extent.

In order to address the bottle necks that contribute to delays facilitating movement of commercial trade, developing economies in the sub-Saharan countries need to review their transport regulatory framework and policies and implement the international conventions and instruments that facilitate trade as has been the case with the economies of the developed countries. The performance of freight forwarders is seriously challenged when institutional policies fail to address deficiencies in addressing barriers to trade.

Transport logistics in developing countries

The most important aspect of transport relates to the ability to convey and facilitate movement of international commercial trade as well as passenger traffic. The efficiency of transport logistics system provides economic and social opportunities that bring with them job creations, access to market for their commercial trade and reduction in cost of doing business just like the economies of the developed countries in Europe, USA, Japan and China (Rodrigue, 2013).

World Bank (2013) observed that transport strategy indicates support for the developing countries through the encouragement of public and private infrastructure investment to overcome physical challenges in transport logistics that will influence free flow of movement of goods and services and increased capacities in trade facilitation. Several initiatives to improve infrastructure in the Southern Africa includes the North-South Corridor programme being championed both by SADC and Common Market for Eastern and Southern Africa (COMESA) with countries in the region with emphasis to rail network which has comparative advantage to road (African Development Bank, 2011). The concessioning of the Nacala railways in Mozambique and Central East African railways in Malawi proves to be a good development in terms of Public-Private Partnership Initiatives to improve on infrastructure which will lead to improved environment of doing business in both these countries (Murithi et al., 2011).

Transport logistics in sub-Saharan Africa

Transport logistics in sub-Saharan Africa is overshadowed by a small national fragmented market which includes sixteen countries that are landlocked (Hartzenberg, 2011). The landlocked countries are Mali, Burkina Faso and Niger in West Africa; Chad, Central African Republic, Southern Sudan in North Central Africa; Ethiopia, Uganda, Rwanda, Burundi in East Africa; Malawi, Zambia, Zimbabwe in Central Africa; and Swaziland, Botswana and Lesotho in Southern Africa. It has been noted by Hartzenberg (2011) that there has been development from African governments in the region to move towards

trade liberalization and regional integration as an important development strategy that will be able to promote trade and investment with the traditional partners such as European Union and new emerging markets such as Central Asia Pacific and China.

In this case, political stability of the region needs to be guarded by all countries in the region to ensure that economic growth through trade facilitation and developing strategic instruments to allow region integration to be effective.

For example, during the civil war in Mozambique, Malawi was forced to re-route 95% of its commercial trade through the ports of Durban and Dar es Salaam which normally pass through Beira and Nacala, resulting in very high costs (Snow et al., 2003).

Challenges for landlocked countries in sub-Saharan Africa

Access to major global markets has been one of the biggest constrains to poverty reduction efforts and economic integration of the landlocked developing countries (Faye et al., 2004). Literature reveals the challenges faces by landlocked countries as discussed herein.

Access to ports

The literature review on landlocked countries in sub-Saharan Africa concludes that most of these countries share a common problem. Lack of direct access to the sea and hence to ports marginalises Sub-Saharan Africa's landlocked countries in terms of transport and logistics to enable them move their commercial trade to international markets.

Arvis et al. (2010) and Faye et al. (2004) observed that being landlocked is associated with high cost of imports and reduced export revenue and at the same time, coastal countries may have political incentives to impose on landlocked countries.

The Southern Africa region constitutes a huge opportunity for growth and poverty reduction as it is blessed with natural resources to improve productivities in agriculture and agro-processing for value addition, energy generation and mining as well as oil. Despite the huge opportunities to economic development, Southern Africa accounted for less than 1% of global trade in 2008 (African Development Bank, 2011). According to Raballand et al. (2012), Dar es Salaam port handles traffic to DR Congo, Zambia, Burundi and Malawi with an average dwell time of 18 days. Thus storage and container demurrage charges contribute to high transport costs for Malawi.

Except for South Africa which is the main trade hub for Southern Africa, inter-regional trade between countries in

the region remains very low as can be witnessed by the poor road/rail infrastructure and lack of energy generation capacity which results in unreliable electricity generation (African Development Bank, 2011).

Poor infrastructure

The review identified challenges on poor infrastructure such as road and railway network. In sub-Saharan Africa, 90% of international trade is conveyed to international market using overland road transport service with linkages to coastal countries that offer port services facilities to move cargo overseas. In this context, the conditions of road infrastructure become paramount for firms that produce and export goods and services at competitive prices. Poor infrastructure renders the countries in sub-Saharan Africa to be placed at a disadvantage in the regional and global markets due to increased costs of trade, thereby making it difficult to compete on the world market (USITC, 2009).

Observations indicate that challenges in respect of road, rail and marine, and energy infrastructure in sub-Saharan Africa are huge that no single country or government even with donor aid can go it alone. Many sub-Saharan countries have entered into partnership by developing regional integration instruments that would be able to address constraints to improve infrastructure conditions (USITC, 2009). Sub-Saharan Africa is made up of small and fragile countries such as Malawi, Mozambique, Madagascar and Niger, who have difficulties in sustaining road maintenance operations due to inadequate funds and inability to follow strict budget lines (Freeman, 2014).

From a global perspective, rail transportation has the capacity to move huge volumes of goods and products to international market in comparison to any form of ground transport. Rail freighting is critical to growth of economic activities in the developed and developing countries due to cost effectiveness it bears when compared with road transportation (African Development Bank, 2011).

Rail infrastructure development in sub-Saharan Africa has not been prioritised by various governments for lack of political will to invest in this sector. Against this background, cost of transport cannot be reduced as the rail sector is not actively involved in conveyance of international trade in sub-Saharan region, except for a few countries like South Africa. Hence, the sub-Saharan Africa has more dominance on the road when compared with the rail infrastructure.

Challenges in freight forwarding operations in sub-Saharan Africa

The challenges facing the freight forwarding industry in

Africa is largely due to a number of factors that constrain on the performance index of their operations. Trade logistics in the global economy is critical for the success of any economy in the conveyance of its merchandise across borders quickly, reliably and cheaply (Arvis et al., 2007). There is need to address constraints that impede on trade facilitation that contribute to high transport cost such as transit border delays, port inefficiencies, customs documentation procedures in order to improve the competitiveness of the products from sub-Saharan Africa on the global market.

Challenges in freight forwarding operations in Malawi

From the Malawi perspective, the challenges faced by the freight forwarding industry in terms of transport logistics are almost shared on the African continent due to her landlockedness and dependence on her neighbours to access ports of her import and export traffic. Malawi is regarded as one of the poorest developing countries in sub-Saharan Africa with a very small market whose economy depends on a few export crops like tobacco, tea and cotton. However, her infrastructure in terms of rail and road remains in poor state which contribute to very high cost of transportation, making it difficult to adequately compete on the international markets (Faye et al., 2004).

In comparison to other landlocked countries within sub-Saharan Africa such as Zambia and Zimbabwe, Malawi's export base remains the weakest as she mostly depend on seasonal crops to export her products, whereas Zambia and Zimbabwe have very strong mining sectors that undertake mining exports throughout the year.

Transport ratio cost of the landlocked developing countries in Southern Africa average 20% but Malawi is singled out as the highest at 55% and this is mainly due to complete dependence on the road network and Malawi's inability to balance its trade deficit in volumes between imports and exports. The ratio of imports is currently at 70 to 30% which covers export trade. Transporters are therefore forced to charge for a round trip from ports that serve Malawi as they are not guaranteed a return load (Faye et al., 2004).

The Almaty program of action report by World Bank (2013) is clear on the objectives proposed for action in order to achieve sustainable development. These are establishing a global framework for landlocked developing countries for efficient transit and transport systems, to help partner countries to establish governance, strategies, and policies for development of economic, financial, environmental and social sustainability.

In conclusion, transport logistics determines the efficiency of moving products to international markets irrespective of distance so long as it is well coordinated and moved with speed, reliability and cheaply (Tseng et al., 2005).

RESEARCH METHODOLOGY

The study was done through a survey and data was collected through face to face interviews and questionnaires that were purposely circulated to selected representatives from the population of the business community involved in transport logistics in Blantyre and Lilongwe districts. The research involved getting specific details in order to analyse the data collected and comparing that to other statements that bear the same texture in the review materials of the research topic (Williams, 2007; Hox and Boejie, 2005).

A qualitative research approach reveal a high degree of social challenges that impact on doing business through the face to face interactions as many of the respondents were very specific to the constraints on trade facilitation from Sub-Saharan landlocked countries including Malawi to international markets (Creswell, 2003).

On the other hand, a quantitative research approach that involved the use of a questionnaire as a survey instrument to obtain data for analysing and evaluating the information. The challenge with this method is that becomes difficult to examine the accuracy of the given information if the questionnaire is completed in the absence of the researcher as anyone apart from the intended respondent may have responded to it (Creswell, 2003).

In addition, secondary data was collected from literature review related to the freight forwarding Industry.

On validity, the data was collected from a variety of sources through published research work Morse et al (2002), as well as from the respondents. Even on the selection of respondents, care was made to ensure that the responses were from authenticated sources, i.e. those with relevant experience. The sample frame included representatives drawn from major stakeholders such as Road Transporters Association (RTOA), Malawi Revenue Authority (MRA), Central and Eastern African Railway (CEAR), Shipping Lines, Clearing and Forwarding Agents Association of Malawi (CAFAAM), Ministry of Transport and Public Works and importers/exporters in the manufacturing and retail sectors.

Non probability sampling method was applied to the population of the business community involved in freight forwarding, transportation, manufacturing, shipping lines, importers and exporters, totalling 29. Out of the 29 selected for sample size, 22 respondents responded, representing a 75% response.

The questionnaire which was the data collection tool was divided into 10 sections. The questions in the questionnaire related to issues identified in literature review. Apart from demographics, the questionnaire required respondents to identify major challenges that impede on freight forwarding operations in terms of transport logistics and suggestions as to how the challenges would be addressed.

The purpose of using a simple rating method was to allow the respondents provide clear answers to the challenges that affect the operations of the transport logistics and the collected data was analysed using the Microsoft Excel spreadsheet. As no research technique can be perfect as articulated by Leming (1979), results from survey responses will depend on the relevant information that is received for undertaking the analysis. Therefore, to ensure data reliability and validity, data was purposely selected from industry experts who it was felt had information and experience on the subject matter.

The study targeted specific players in the market who were mostly involved in transport logistics such as transporters, freight forwarders, manufacturers, shipping lines, relevant government ministry and regulators as well as importers and exporters.

FINDINGS AND DISCUSSION

The physical characteristics of landlocked countries in

Logistics Challenges 120 100 80 Percentage 60 Logistics Challenges 40 20 0 High Delay in MRA process Corruption at Transport transit Transit Border Post Cost

Figure 1. Transport logistics challenges.

sub-Saharan Africa have a bearing on transport logistics challenges in terms of high transport cost emanating from deficiencies in road and rail infrastructure, long transit delays and port inefficiencies in conveyance of international trade to overseas markets (Arvis et al., 2010). Transport cost in Malawi, a landlocked country in sub-Saharan Africa, accounts for up to 55% of the landed cost of the product which is one of the highest transport ratios in the world (Faye et al., 2004).

Demographic profile results reflected that female respondents were 9%, while males were 91%, agreeing with the general observation that most Malawian female traditionally assume nursing, teaching, sales, and secretarial professions. It is therefore suggested that the dominance of the males in the transport logistics in Malawi is due to cultural preferences.

Transport logistics challenges

As summarized in Figure 1 on challenges, the major challenges revealed by the survey are high transportation costs, transit delays, inefficient Malawi revenue processes, and corruption at border. Much as Malawi is landlocked in sub-Saharan Africa, her main challenges emanate from weak export base because the market is very small to be able to compete on her own from a global perspective. The respondents' responses on high transport cost is further constrained by the dominance of road haul for Malawi's import and export traffic accounting for 90% of the volume that is moved as stated by Lall et al. (2009). The burden of high transport costs in Malawi will not be addressed unless the government undertakes to rehabilitate the rail sector so as to

effectively compete with the road freight operations. Respondents (95%) on high transport costs share the view that government must invest in the rail sector if Malawi is to achieve reduction of the high cost of doing business.

Respondents (76%) raised the issue on transit delays in transiting through maritime neighbors due to documentation processes, inefficient port operations resulting in high demurrage and storage costs on their traffic as has been stated by Hartzenberg (2011). Respondents (36%) noted that the MRA processes contribute to delays despite many years of advancing in new Asycuda Systems that would have seen total elimination of documentation process. Several human interventions need to be removed to allow the system operate independently. Respondents (5%) raised the issue of corruption at the border.

Since border operations involve several government agencies who are also involved in providing transit formalities, these government agencies contribute to delays in facilitating trade. For example, the Bureau of Standards, weighbridges and health departments, all these have an interest in the same traffic. Hence, 9% of the respondents suggest that delays in border processing are also contributed by other government agencies.

International corridors for Malawi

On the condition of the transport infrastructure, respondents indicated that for the road/rail infrastructure, 9 and 64% of the respondents suggest that the road and rail condition in Malawi is in bad state, respectively.

In summary, the condition of the road and rail from the

respondents' perspective, in terms of international transport corridors' road appear to be in good and usable condition, while the condition on the international corridor on rail requires serious attention to be able to attract new traffic. Currently, 90% of Malawi's traffic is moved by road, while the rail network attracts only 10% or less.

Transit time from ports to Inland-Malawi

An assessment of the duration of cargo in transit indicates that the Beira road takes between 2 and 5 days to get to Malawi as reported by 32% of the respondents, whilst 9% of the respondents suggest 10 days and 23% of the respondents indicate 15 days transit period. On the other hand, the Nacala rail sector respondents indicate that 23% of the users that utilize this route experience a 25 day transit time and 14% indicate 10 days transit time, while 5% of the respondents indicate transit time of 15 days. The majority of the respondents representing a scorecard of 50% suggest that the rail sector is very slow with an average transit days of 20.

The road and rail sector survey results indicate that there are significant improvements in the transit time by road from Beira, while the Nacala railway corridor reflects that this link has major challenges to do with its infrastructure. It is envisaged that once the rehabilitation works on the Nacala railway corridor in Mozambique, transit time will improve.

Role of government in trade facilitation

The role of government in ensuring the processes of trade facilitation are sustainable was also assessed and it showed that the majority of the respondents (50%), particularly, from the freight forwarding, transport, shipping lines, manufacturing and exporters were aware and appreciate that the government is very much involved in trade facilitation in the region as it is one of the government mandate to ensure that barriers to trade are removed as one way of promoting growth of the economy. In addition, 27% of the respondents indicate that government participates in various trade protocols, whilst 5% of the respondents indicated that the government does not play any part in trade facilitation and one would be inclined to conclude that those respondents are not very much aware on the role of government. Respondents (18%) were just aware that government provides support in trade facilitation through several trade protocols that have been signed with regional blocks such as SADC and COMESA.

Road/Rail fund administration

The study also determined as to whether the survey

participants were aware of government commitment in terms of road and rail fund administration.

Respondents (95%) indicate that they are aware that government established a road fund through fuel levy, while 5% of the respondents indicate that they are aware that there is a rail levy for maintenance of rail infrastructure. Respondents on the survey questionnaire declared that they were aware of the toll tax on fuel levy which the government collects for road development. The fund is called Road Fund Administration and has been in operation for over 20 years period.

Respondents (82%) are not aware of any rail administration fund that have been established by government through fuel lewy or any other fund, while 5% of the respondents indicate that they are not sure on the position of government, how they fund rail infrastructure maintenance and the other 5% of the respondents are not very clear on how rail fund is administered. There is no clear policy that has been established on the rail fund maintenance and it would appear that the rail infrastructure maintenance is done through budget allocation interventions on annual basis. It must be mentioned that as the rail traffic activities have been very low, the funding for the rail infrastructure has also received very little attention from government. It must also be noted that the railway network was concessional to CEAR in a public, private partnership deal, but government still owns the rail infrastructure itself, while CEAR owns the locomotives and the wagons and take responsibility to run the operations. The policy issue of funding the rail in terms of infrastructure maintenance is not very clear to the general public.

Choice of freight forwarder

The selection of a freight forwarding agent by various stakeholders is critical in ensuring that the flow of trade is moved with minimum delays. In response to how freight forwarders are chosen, the survey results indicated that 86% of the respondents prefer to utilize the services of a freight forwarder who is efficient, whilst 9% would opt for a freight forwarder who has international establishment and another 9% of the respondents would seriously consider the size as one of the criteria for selection of the agent.

Limbe/Beira Sena corridor

The Limbe/Beira rail Sena line used to be the main transport corridor for Malawi's imports and exports until the civil war in Mozambique which caused its closure. Although, the war in Mozambique ended, the line has not been operational to traffic due to the extensive damage following floods in the lower Shire. Malawi was forced to re-route 95% of its commercial traffic using the port of

Durban following civil was in Mozambique that disrupted traditional ports of Nacala and Beira (Faye et al., 2004).

In response to the usability of the Limbe/Beira Sena corridor, 77% recommended the re-opening of the said route, stating that it will have an impact reducing cost of transport. Respondents (59%) feel the re-opening of this old rail route will help reduce transit time, whilst 45% of the respondents feel that the route will also be able to accommodate passenger traffic which was closed during the civil was in Mozambique. Only 5% were not aware of the existence of this route at all.

Advancing regional integration on sound transport infrastructure in Southern Africa

Malawi as a landlocked country in sub-Saharan Africa and a member of SADC needs the support of a sound transport infrastructure on movement of her commercial trade. It was therefore important to seek the views of various stakeholders on what benefit regional integration initiative will bring to Malawi in regards to improvement on rail and road infrastructure. Respondents' views as to advancing regional integration on sound transport infrastructure in Southern Africa and the benefits it may likely bring to the country were sought. Respondents (77%) indicate that the advancement of regional integration on sound transport infrastructure in Southern Africa will contribute towards cost reduction in transport cost, 64% of the respondents indicate that the regional integration will improve on efficiencies in terms of border crossings and trade facilitation. Respondents (68%) indicate that transit time which contributes to high transport cost and is one of the barriers to trade facilitation which will reduce transit time and 32% of the respondents suggest that integration will bring positive changes to border management.

Strategies to reduce high transport costs in Malawi

The transport ratio cost in Malawi is at 55% of the landed cost of the product, while the average transport ratio cost in sub-Saharan Africa is 20% (Faye et al., 2004). It was important to seek the views of the various stakeholders in establishing solutions to the challenges of high transport costs in Malawi. Respondents (68%) feel that government needs to diversify into rail transport so as to effectively compete with the road which currently handles almost 90% of the commercial traffic. Respondents (18%) state that government must improve on its road condition, while 18% of the respondents would like to see improvement in transit time. Another 18% of the respondents suggested building oil pipe line from the ports in order to reduce cost of fuel and 9% of the respondents are of the opinion that regional integration must also address issues to do with human development and training by adopting the use of an efficient IT system that would work to the benefit of the region. Harmonization of integrated border management system would be a case in point.

CONCLUSIONS AND RECOMMENDATIONS

It is envisaged that this study is important as it will help policy makers in government and other stakeholders in the industry to take necessary action in addressing deficiencies in the system that will help promote the growth and expansion of export trade to regional as well as international markets and reduce the high transport costs that has a huge bearing on the competitiveness of the Malawi products.

In conclusion therefore, the research study has established that Malawi government may reflect on the following priority areas for the purpose of reducing its burden on high transport cost from the transport logistics perspective.

In order to address challenges that relate to high transport cost, landlocked countries in sub-Saharan Africa such as Malawi must put emphasis on developing internal transport infrastructure as stated by Faye et al. (2004). Much as government formulated a policy to collect fuel levy for road maintenance, which is operational, there is, however, no clear policy on how it raises funds for rail infrastructure maintenance which is a very critical sector in economic development as well as cost reduction in trade.

Limbe/Sena rail route is seen as a better option going by results from the survey. The JICA (2012) feasibility study report suggests that the benefits for this are many. For example, trains are able to move a large number of wagons loaded with high volumes of cargo at very competitive rates compared to road freight. Delays of border crossings are minimised because trains are not usually subject to interruptions on route such as what road freight operators experience in terms of road blocks.

Regional integration instruments that the region has developed through regional blocks such as SADC and COMESA needs the political will of heads of states and governments of sub-Saharan countries to develop a common market and be able to compete from a global perspective (Hertzenberg, 2011).

The overall challenge for sub-Saharan region is that most of the trade is conveyed by road making it a very expensive destination compared to other regions such as Central Europe and Central Asia where some of the economies share similar characteristics of being landlocked. The promotion of integrated regional rail network would be most ideal for reducing cost and promotion of trade in order to address issues of poverty reduction.

Rail infrastructure development and rehabilitation will help Malawi achieve its goal in reducing transport cost, because the rail sector has high volume in terms of capacity and this can compete well with road freighting. The rehabilitation of the Nacala Corridor line to move

large volumes of cargo from Moartize via Malawi to Nacala is a case in point (Murithi et al., 2012). Thus, the partnership the Malawi government has with CEAR regarding the concessioning of the railway sector needs support on the rail infrastructure and rehabilitation in particular reference to domestic feeder lines.

Conflict of Interests

The authors have not declared any conflict of interests.

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