Data Collection Survey for Potential Industries in Malawi

Summary of Final Report

August 2013

Japan International Cooperation Agency（JICA）

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PADECO Co.Ltd.

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1. Introduction

1.1. Background and Objectives of the Study

The main industries in Malawi are agriculture, retail trade, manufacturing, and the service sector. In each sector a few large companies dominate the market, and the number of medium- and small-size enterprises is very limited. Recently, Malawi's economic growth has been slowing down because of foreign currency shortages, fuel and electricity supply shortages, inflation and other reasons. Moreover, the high cost of transportation, which is at the highest level in the world, and inadequate electric and logistic infrastructure due to the landlocked geography of the country get in the way of industrial development in Malawi.

Although the Government of Malawi identified 9 Key Priority Areas in the Malawi Growth and Development Strategy II, and aimed at achieving an expanded industrial base, increased employment, increased industrial output, and increased value addition, an oligopoly of industrial structure still exists and effective policies have not been carried out. On the other hand, the Nacala Corridor and other relevant road network developments are on-going, and an extensive distribution network connecting Lusaka (Zambia) to the Port of Nacala (Mozambique) is expected to be in place. When this is achieved, Malawi will likely encounter both positive and negative impacts, as the country realizes better access to the Port of Nacala. Therefore, measures to strengthen Malawi's economy and promote industrial development are needed in order to respond to expected changes. Prior to the completion of the Nacala Corridor in 2017, it is important for JICA to analyze and estimate again the impact of the corridor development and regional integration, taking into consideration the various strategies and studies already prepared. It is also important for JICA to identify potential industries which could lead Malawi's economy, and to consider how to come up with possible forms of assistance for these prospective industries.

In this regard, JICA commenced the Data Collection Survey for Potential Industries in Malawi in order to achieve the following purposes:

i. To conduct economic and industrial analysis, and make projections regarding the economic structures of Malawi, taking into consideration the future development of international corridors including the Nacala Corridor,

ii. To identify potential industries (both export industries/products and related industries) which could become a critical driver for Malawi's economic growth, and

iii. To come up with possible forms of assistance for these prospective industries.

The analysis is focused on agriculture, manufacturing, and service industry from broad based, regional perspectives to identify potential industries in Malawi by approximately 2022, anticipating the completion of the Nacala Corridor development by around 2017.

1.2. Study Area

The area of the survey includes Malawi and its neighboring countries (Tanzania, Mozambique, Zambia and Zimbabwe). In South Africa, companies' interests in Malawi are also surveyed, information on Malawi is disseminated to Japanese companies.

1.3. Study Approach

To identify potential industries and develop growth scenarios, analyses from diversified viewpoints were conducted. These included: industry, trade and investment situation; policy framework and constraints; potential for export; policies of RECs; comparison with the benchmark countries; comparative advantage of industries with neighboring countries; assessment by neighboring countries; and impact of the Nacala corridor development.

In addition, a comprehensive survey of transfer of goods (and money) in the Southern Africa was carried out, namely: value chains in Malawi and neighboring countries; trends in large scale agriculture investment; potential of Malawi distribution industry; and international freight transfer forecast.

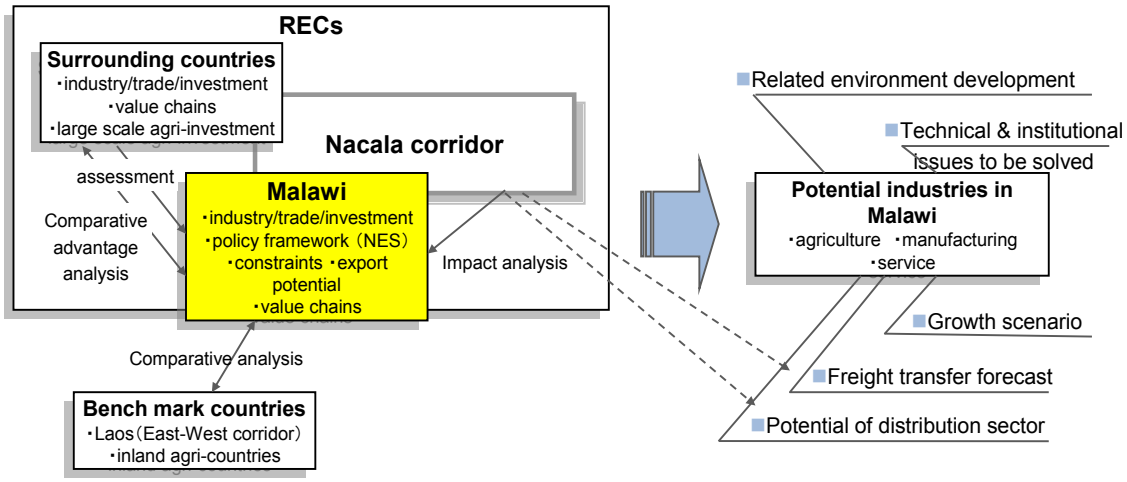


Figure 1.1 Study Approach (conceptual diagram)

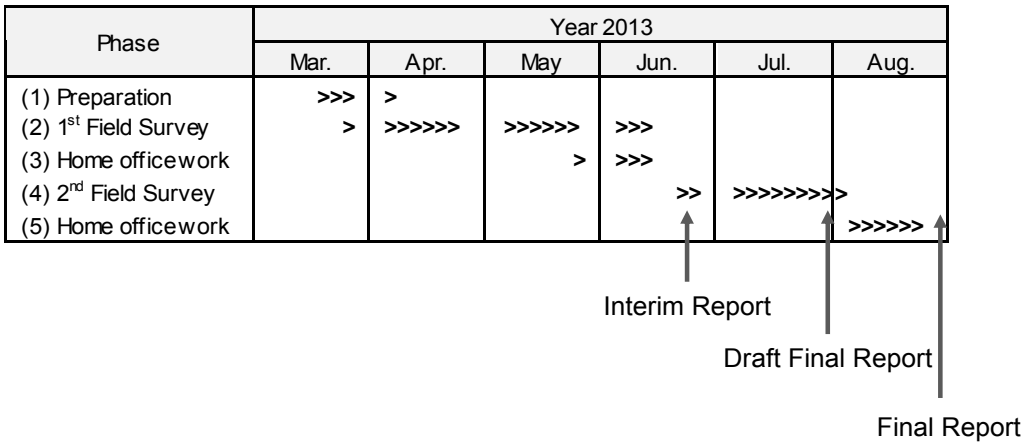
1.4. Study Team

The study team was set up through a joint collaboration between Mitsubishi UFJ Research & Consulting Co., Ltd. and PADECO Co. Ltd., including the following members.

Name	Company	Assignment in Charge
Kensuke Shimura (Mr.)	Mitsubishi UFJ Research and Consulting Co., Ltd.	Team Leader/ Economic and industrial analysis
Masumi Shimamura (Ms.)	Mitsubishi UFJ Research and Consulting Co., Ltd.	Sub Leader/ Trade & Investment, Regional Economic Analysis
Peter Mansell (Mr.)	PADECO Co., Ltd. (individual)	Freight Transport Forecasting
Takayuki Urade (Mr.)	PADECO Co., Ltd.	Industrial Development 1
Kozo Kamiya (Mr.)	PADECO Co., Ltd.	Industrial Development 2
Kazuharu Oide (Mr.)	PADECO (Nittsu Research Institute)	Logistic Industry Analysis
Izumi Takei (Ms.)	Mitsubishi UFJ Research and Consulting Co., Ltd.	Market-Oriented Agriculture 1
Takuya Akiyama (Mr.)	Mitsubishi UFJ Research and Consulting Co., Ltd.	Team Coordinator/ Market-Oriented Agriculture 2
Akane Maemura (Ms.)	Mitsubishi UFJ Research and Consulting Co., Ltd.	Market-Oriented Agriculture 3
Masako Hatta (Ms.)	PADECO Co., Ltd.	Economic Infrastructure (Hard Infrastructure and Soft Infrastructure)

1.5. Study Schedule

The study commenced at the end of March 2013 and finished at the end of August 2013.



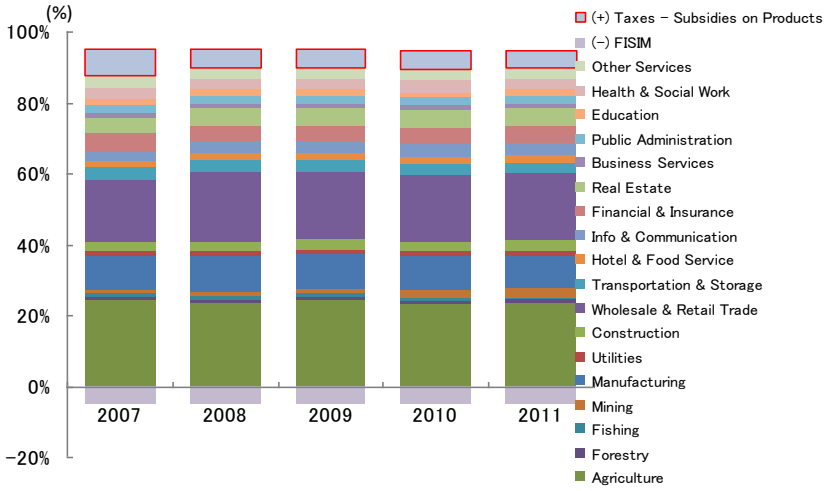
1.6. Structure and Contents of the Summary Report

The summary report consists of 10 chapters, including this section. **Chapter 2** includes the basic analysis of the characteristics of the industry, trade and investment of Malawi. **Chapter 3** conducts an extensive review of the National Export Strategy (NES) which contributes to the creation of economic growth scenarios in chapter 10. **Chapter 4** conducts analyses of the benchmark countries including Lao P.D.R and other agro-oriented inland countries, as well as identifying of the binding constraints for the Malawi economy utilizing the HRV framework. These analyses provide useful insights for potential growth scenarios for Malawi. **Chapter 5** examines the fundamentals of Malawi's domestic industries, in comparison with neighboring countries, to provide inputs to the evaluation of the growth potential of industries in the next chapter. **Chapter 6** includes the main analyses to identify potential industries/products, through in-depth observation of individual industries/products and comparative evaluation of industries from multidimensional viewpoints. **Chapters 7 and 8** make projections of freight transportation and distribution industry in Malawi. The analyses of these chapters provide the premises for the impact analysis of Nacala corridor development in **Chapter 9**. **Chapter 10**, which is the conclusion of the study, clearly specifies the potential industries/products and shows a possible image of economic growth in Malawi in terms of real GDP growth forecast, as well as development scenarios for individual industries. It should be noted that the summary report does not contain some parts included in the original report, because of the extensive nature of that document.

2. Industry, Trade and Investment in Malawi and Neighboring Countries

2.1. Industry

Over the past five years, the GDP structure in Malawi is nearly unchanged with agriculture 26-27%, manufacturing 10-11%, and wholesale and retail trade 20-21%. However, two particular sectors have notably increased GDP share. One is mining, of which the annual growth rate during the same period was 33% and GDP share increased from 1.1% to 2.9%. Another is information and communication, of which the annual growth rate was 18% and GDP share increased from 2.7% to 4.2%.



Source: National Statistical Office, *Statistic Yearbook 2011*

Figure 2.1 GDP by Sector (2007 prices)

Figure 2.2 shows each sector's average GDP growth, GDP contribution and GDP share in the last five years. The GDP share is indicated relatively by the size of the bubbles. This chart shows that agriculture and wholesale and retail trade, which have large GDP shares, have mainly contributed to the country's GDP growth. Manufacturing follows these two sectors. At the same time, mining, and information and communication, both of which have high growth rates, seem to have contributed to the country's economic growth to some extent. Similarly, related sectors like real estate, transportation and storage, and construction have shown a degree of contribution. On the contrary, the service industries like finance and insurance, hotel and food, and business service seem to have made very limited contribution.

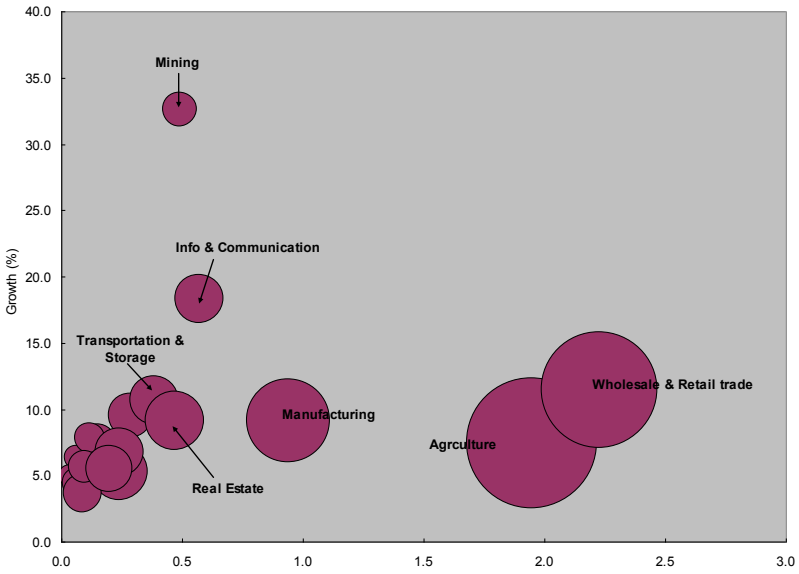
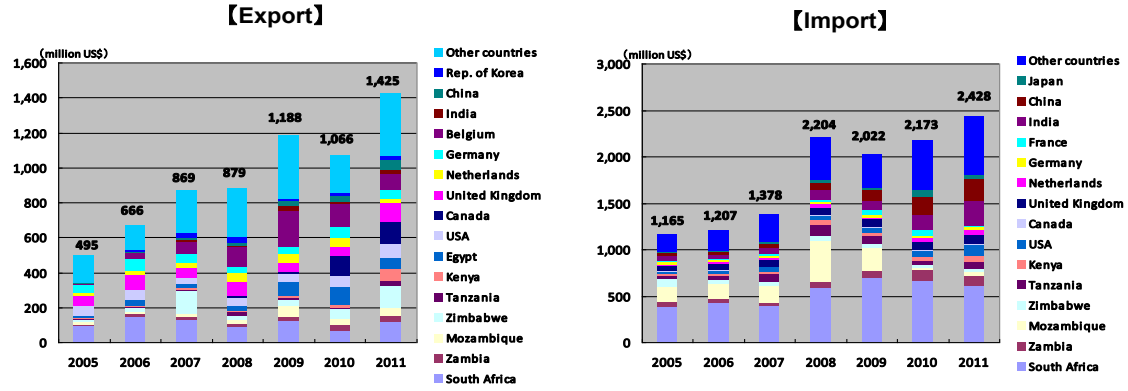


Figure 2.2 GDP Growth, GDP Growth Contribution and GDP Share by Sector (2007～11 average)

2.2. Trade

Both exports and imports show a trend towards increasing. During the last five years, exports have risen from around a bit less than 500 million dollars to over 1.4 billion, an increase of nearly three times. Also, imports have increased from around 1 billion to 2.4 billion. Obviously, the trade deficit remains unchanged. The main trading partner is South Africa for both export and import, with the largest share Malawi's imports at 25%. Regarding the imports, African countries, consisting of South Africa, the neighboring four countries plus Kenya, account for 38% of Malawi's total imports. Among the other countries, India and China are expanding their share in imports, now exceeding 20% of the total. On the other hand, export partners are rather more diversified than imports. South Africa, the neighboring four countries and Kenya make up a share of 34%, followed by US and Canada 14%, four European countries (namely UK, Netherlands, Germany and Belgium) have a share of 19%, and while India, China and Korea have a 7% share.



Source: UN COMTRADE

Source: UN COMTRADE

Figure 2.3 Export and Import Trends by Main Partner Country

Among the export items, unprocessed tobacco has the largest export value, stable at nearly 600 million dollars or more, except for 2007. Other than tobacco, mostly unprocessed agriculture products like sugar from sugarcane, tea, cotton, groundnuts, dried legumes, are the main items and their export has been increasing in recent years. In addition, uranium has started to be exported from 2010 and became the third largest export item, following the tobacco and sugarcane. Maize records a substantial amount of export in some years, while the export of other items like packaging/plastic products, clothes and natural rubbers has been increasing, although their amounts are still small. Due to these factors, tobacco's export share is decreasing, and export structure seems to be diversifying, gradually as a consequence.

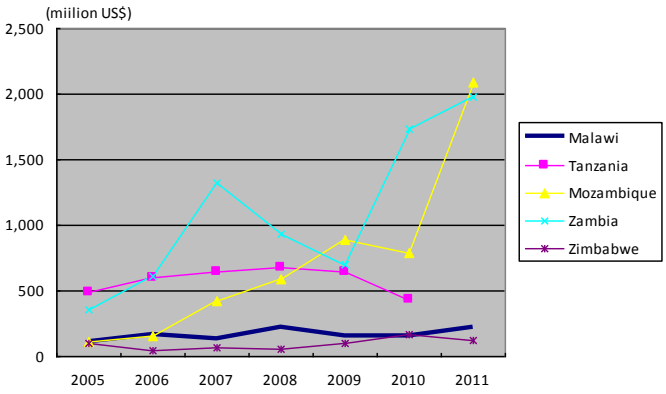
As regards imports, fuels and fertilizers are the main items, which make up around 20% of total imports, and seem to have substantial impact on the country's overall import structure. Other than these items, various intermediate and consumer goods are imported.

Looking at trade with neighboring countries, Malawi has constant trade deficit with Tanzania and Zambia. With Mozambique, Malawi has had large trade deficits, but since 2009, due to the rapid decrease of petrol and other imports, the county had a slight trade surplus in 2010. Consequentially, exports and imports were

almost balanced in 2011. Malawi has trade surplus with Zimbabwe, and this is increasing. This increase is supposed to be a result of the increase in export of Malawi's main export items, such as maize, sugar, tobacco, plastic products, cotton and groundnuts.

2.3. Investment

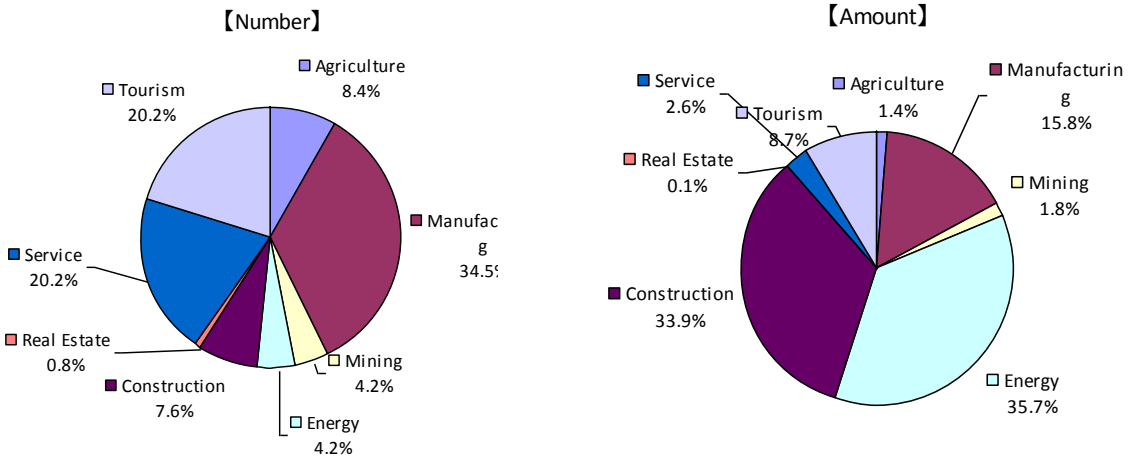
FDI inflow to Malawi was recorded at more than 200 million dollars in 2008 and 2011, and is gradually increasing. However, in fact, it should be said that FDI inflow is stagnant, when compared with neighboring countries, particularly Mozambique and Zambia, where FDI in mining sectors and agribusiness is rising sharply.



Source: SADC Statistics

Figure 2.4 FDI Inflow to Malawi and Neighboring Countries

Manufacturing, service and tourism are the main sectors in terms of number of investment pledges. On the other hand, energy and construction account for the majority, in terms of amount. This is because several large-scale projects are associated with these sectors, for example, power and energy generation by India, [illegible] uction by the Brazilian company Vale.



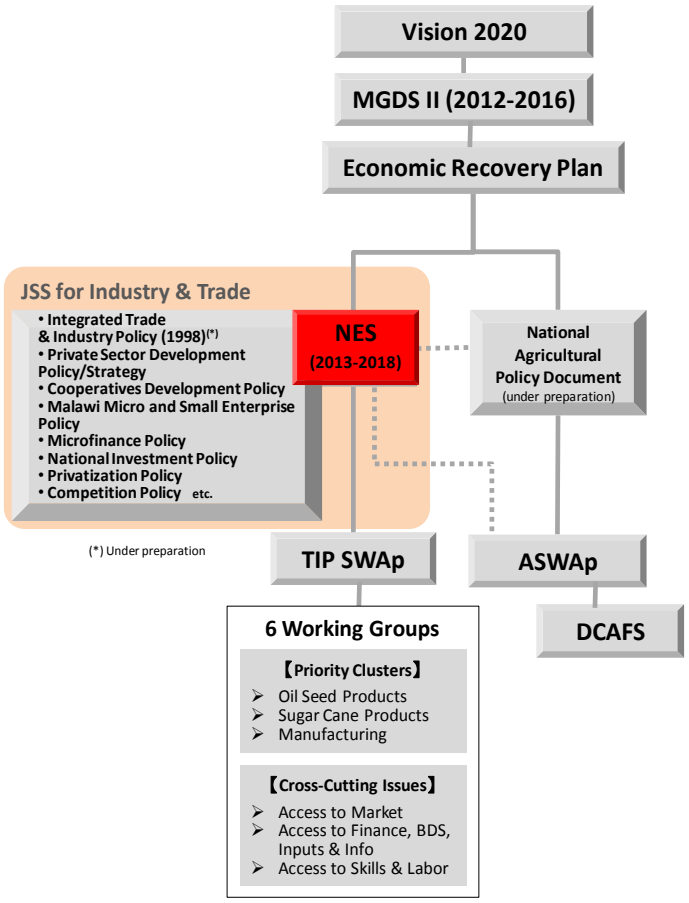
Source: Malawi Investment and Trade Centre

Figure 2.5 Investment Pledges in Malawi by Sector (2010～2013 April)

3. Review of the National Export Strategy (NES) and Relevant Stakeholders in the Areas of Industry and Trade

3.1. Policy Framework and Priority Areas of the NES

The policy framework with regards to the NES is shown below. The upstream, national policies are Vision 2020, the Malawi Growth and Development Strategy II (MGDS II) 2012-2016 and the Economic Recovery Plan (ERP). The NES is regarded as a part of the Joint Sector Strategy (JSS) for Industry and Trade Sector, aiming to transform the country from an import-dependent consuming nation to an export nation with a solid production base.



Source: JICA Study Team

Figure 3.1 Policy Framework Related to Industry and Trade

The four areas of focus of the NES are as follows:

1. Export Clusters

- Export-oriented clusters for diversification : (1) oil seed products, (2) sugar cane products, (3) manufactures (beverages, agro-processing, plastics and packaging, assembly)
- Supporting exports of existing clusters : tobacco, mining, tourism, tea and services

2. Conducive environment

3. Supportive economic institutions to build the productive base of the economy

4. Competencies, skills and knowledge

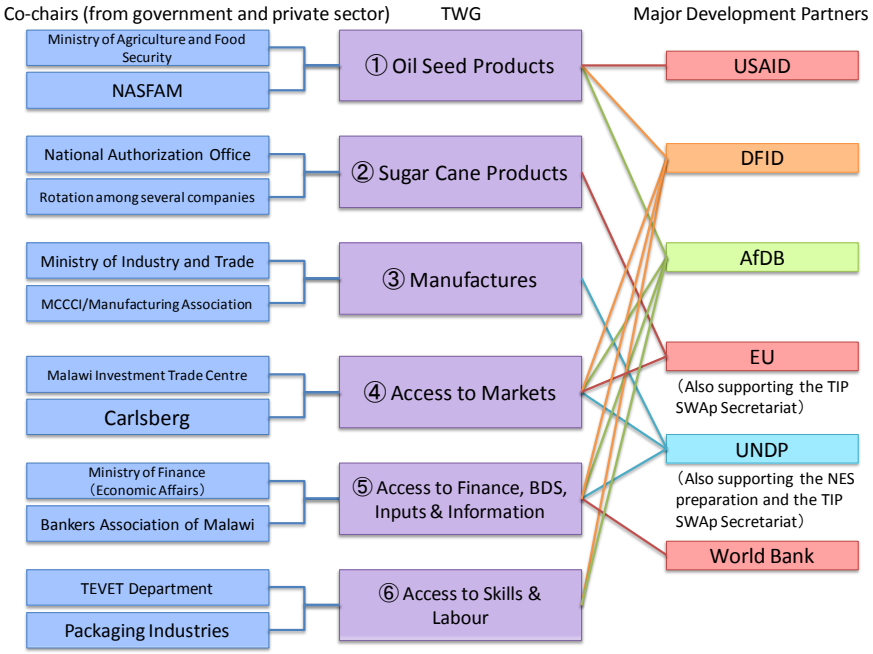
3.2. Institutional Mechanism for NES Implementation and Major Stakeholders in the Areas of Investment and Trade

The Trade Industry & Private Sector Development Sector Wide Approach (TIP SWAp) was established as a framework for the implementation mechanism of the NES. Government ministries, relevant organizations, private sector, civil society, development partners and others participate in this framework, and discussion of creating a basket fund is on-going. Based on the NES, six technical working groups (TWGs), consisting of three priority clusters and three cross-cutting issues, were set up under the TIP SWAp, and active discussions have been taking place since May 2013. The government emphasizes that TIP SWAp is a "government-led but private-driven" initiative, which explains the substantial participation from the private and financial sectors in the TWG. It should be noted that export-oriented industries identified in the NES as priority clusters are a part of the 17 industrial sectors[1] which the Ministry of Industry and Trade has been promoting.

In the NES, Malawi Investment and Trade Centre (MITC), Malawi Bureau of Standards (MBS), and Small and Medium Enterprise Development Institute (SMEDI) have been given highest priority for institutional reinforcement.

Major development partners in the areas of industry and trade participate in the TIP SWAp, and have been providing individual assistance projects and programs in their respective priority areas. The following figure summarizes the co-chairs of each TWG and major development partners providing funding for individual projects and programs in relation with TIP SWAp priority clusters and cross-cutting issues.

[1] The 17 industrial sectors promoted by the Ministry of Industry and Trade are: (1) tobacco industry, (2) mineral / mining industry, (3) tea and coffee industry, (4) textile industry, (5) wood and wood products industry, (6) leather industry, (7) pharmaceutical industry, (8) oil seeds industry, (9) sugar and sugar products industry, (10) beverage industry, (11) agro-processing industry, (12) plastic industry, (13) packaging industry, (14) cable manufacturing industry, (15) cement industry, (16) chemical industry, and (17) metallic and non-metallic industries. (Source: Ministry of Industry and Trade)



Source: JICA Study Team

Figure 3.2 TIP SWAp TWG Participants: Development Partners

3.3. Review of the NES

The NES is aligned with Vision 2020, MGDS II and ERP, the upstream, national policies of the government. The NES is also aligned with regional development initiatives (including SADC and COMESA regional integration). The objective of the NES – aiming to transform the country into export-oriented productive base – is highly relevant in terms of the direction of strategy and the timing of preparation, considering Malawi's political, economic and social situation at the time. The NES was prepared through participatory processes involving a wide range of stakeholders, including government ministries, related organizations, private sector, civil society, NGOs, development partners and others. The NES cluster prioritization was conducted based on clear criteria from economic perspectives: (1) higher spillover-effects, (2) higher economies of scale, and (3) longer-term comparative advantage. In light of the above, the government's decision to embark on the development of the NES, which emphasizes paradigm shift for achieving sustainable growth through transforming the country into a productive base, is evaluated here as being highly appropriate.

4. Benchmark Analysis

Benchmark analysis is conducted in this chapter – review of experience of a land-locked country in Asia taking up the case of the Lao Peoples Democratic Republic, comparative analysis on land-locked, agro-oriented countries across the world, and evaluation through the HRV Model.

4.1. Experience of a Land-locked Country in Asia: The Lao People's Democratic Republic

(1) Trend of Industry, Trade and Investment of the Lao P.D.R.

The Lao P.D.R., a single-party socialist republic, has maintained political stability, and in recent years has been demonstrating robust economic performance (real GDP growth rate: 8.1% p.a., by Asian Development Bank) backed by strong growth in the areas of mineral and hydroelectric resources. While the country has relied heavily on the Thai baht for trade and investment, financial diversification is gradually proceeding with the increase of FDI from the region, including Vietnam and China. Large-scale investment projects are under way, such as natural rubber plantations by a Vietnamese firm and construction of shopping malls and new town development by Chinese firms.

(2) National Development Policy and the National Export Strategy (NES) of the Lao P.D.R.

The government of Lao P.D.R. introduced a new economic policy called "Chintanakan Mai (New Thinking)" in 1986, under which the government started a program comprehensive reform focused on market-oriented economic reform (New Economic Mechanism). This reform requires political and social restructuring and institutional changes in various dimensions. The government has set the economic goal of graduating from LDC country status by 2020.

In the Seventh National Socio-Economic Development Plan (NSEDP) 2011-2015, the government laid out policy directions to accelerate economic growth and to maintain the country's stability and security, to bring about positive changes, emphasizing quality and sustainability of growth, achievement of the MDGs by 2015, and building the primary foundations for the future industrialization and modernization of the country. In this regard, securing access to deep-sea ports (removing obstacles as a landlocked country) through expanding economic relationships with neighboring countries such as Thailand, Vietnam and China has become the country's one of top priorities.

In line with the national development policy, the Ministry of Industry and Commerce has developed the National Export Strategy (NES) 2011-2015. The NES consists of nine sectoral export strategies[2] and six cross-sectoral strategies.[3] The NES of the Lao P.D.R. has been one reference document used in the course of the preparation of the NES of the government of Malawi.

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[2] The nine sectoral export strategies are: (1) Electricity (Hydro-power), (2) Tourism, (3) Organic agricultural products, (4) Mineral products, (5) Garments, (6) Lao silk and cotton handicraft, (7) Wood products, (8) Medicinal plants and spices, and (9) Products from local talent.

[3] Six cross-sectoral strategies are: (1) Export quality management, (2) Trade finance, (3) Trade information services, (4) Competitiveness development, (5) Marketing, and (6) Import for re-export.

(3) Lao's Participation in the Regional Economic Integration and Cooperation Framework

The Lao government has been actively participating in the regional economic integration and cooperation framework in order to overcome its bottleneck as a land-locked country. The government's participation in various multilateral regional economic development frameworks including the ASEAN Free Trade Area (AFTA), the Greater Mekong Subregion (GMS) Development Initiatives, Ayeyawady-Chao Phraya-Mekong Economic Co-operation Strategy (ACMECS), to name a few, has created a strong momentum for the country's economic leap. The government recently emphasizes the concept of "Land Linked Country", refocusing attention on the country's geographic advantage of its location in the center of Indochina peninsula.

(4) Economic Corridor Development under the Greater Mekong Subregion (GMS) Development Initiatives

Cross-border economic corridor development has been facilitated since 1992 under the GMS regional development initiative led by the Asian Development Bank. Among the nine economic corridors[4] under the GMS Economic Cooperation Program, the East-West Corridor (EWEC) which passes through Lao P.D.R. is given priority for development. Given that Lao P.D.R. (Laos) and Northeastern Thailand are a land-locked country and a region respectively, trade facilitation was expected to be realized by utilizing Central Vietnam's port facilities located at the east gateway of the EWEC.

Figure 4.1 Nine Economic Corridors in the Greater Mekong Subregion (GMS)

[4] The nine economic corridors are: the North-South Corridor, the Northern Corridor, the Eastern Corridor, the East-West Corridor, the Southern Corridor, the Southern Coastal Corridor, the Central Corridor, the Northeastern Corridor, and the Northwestern Corridor have been promoted.

(5) Economic Development Potential through Economic Corridor Development (Expected Changes)

The objective of the EWEC development was to effectively connect economic activities (production, distribution, processing, and export) along the areas of the EWEC (Northeastern Thailand, Laos and Central Vietnam) through facilitation of logistics, thereby achieving comprehensive development of the area. In fact, (1) creation of cross-border economic zones and facilitation of their business activities, and (2) formulation and expansion of transborder production networks in the GMS were the changes expected to come about through broad-based infrastructure development and regional economic integration.

(6) Broad-Based Impact through the EWEC Development and the Latest Business Developments of the Lao P.D.R.

The EWEC (total length of about 1,500km) extends across Indochina peninsula from Da Nang in Central Vietnam, passing through Laos (Savannakhet), Thailand (Mukdahan) to Myanmar (Mawlamyine). Japan provided assistance to Lao P.D.R. for the improvement of National Road No.9 (the Laos section of the EWEC) and construction of the Second Mekong International Bridge, connecting Laos (Savannakhet) and Thailand (Mukdahan) across the Mekong River. The Asian Development Bank assisted Laos in improving National Road No.9 (the Laos and Vietnam section of the EWEC), and the World Bank supported Vietnam in improvement of National Road No.1.

The results of the analysis on the effects of trade facilitation and economic spillover with respect to the EWEC revealed that (1) facilitation of bilateral trade between Laos and Thailand was confirmed, (2) enhancement of bilateral trade between Laos and Vietnam was seen to some extent, (3) activation of land transportation using the EWEC and the Second Mekong International Bridge was confirmed (see figure below for land route from Bangkok to Hanoi), and (4) emergence of FDI projects to the Savan Seno Special Economic Zone in Laos is seen as recent progress. As regards (4), it can be pointed out that Laos is also fortunate enough to benefit from external factors in addition to its own reform efforts – the private sector's corporate/investment strategy to diversify business risk to Laos after the devastating flooding in Thailand in October 2011, increasing labor cost and labor shortage in advanced ASEAN countries, and transition of industrial policies in neighboring countries.

Figure 4.2 Bangkok (Thailand) – Hanoi (Vietnam) Routes

Table 4.1 Comparison of Lead

Lead Time	
By Sea	**By Land (using Second Mekong International Bridge)**
10-15 days	3-4 days

Source: JICA Study on Challenges of the GMS Countries utilizing Cross-Border Transport

(7) Challenges for Further Utilization of the EWEC

Based on the result of analysis, challenges that must be overcome in order to further capitalize on the EWEC are: (1) further infrastructure development, (2) facilitation of trade and logistics, and (3) promotion of industrial development. As regards (1), Japan is providing grant assistance to the Lao government for improving National Road No.9, and is planning to support Lach Huyen Port development in Vietnam using yen loan assistance. As regards (2), institutional development related with streamlining and computerizing custom procedures, legal development to comply with the Cross-Border Transport Agreement (CBTA) regarding transport, and quality assurance of traded goods are necessary for each relevant country in the GMS. As regards (3), promotion of prospective industries (preparation of policy/strategy and its implementation), human resource development, productivity enhancement, to name a few, are required. In this regard, the Asian Development Bank is providing various technical cooperation projects for trade facilitation, industrial promotion and private sector development.

(8) Lessons Learned for Project Preparation and Implementation of Broad-Based Infrastructure Development

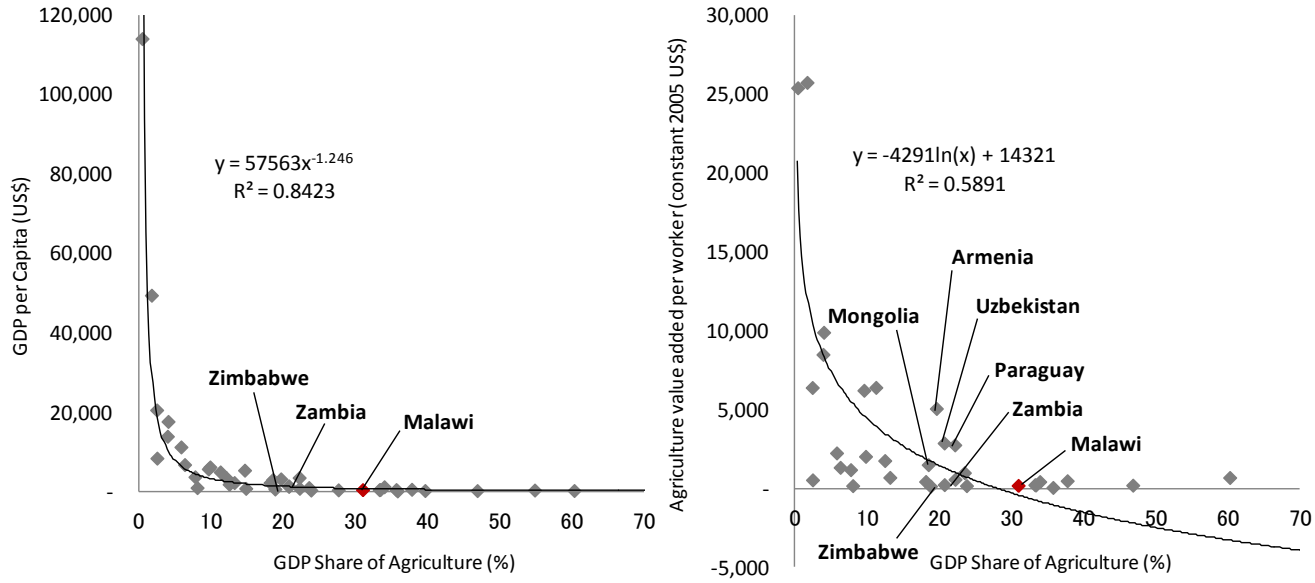
One lesson learned from the experiences of Lao P.D.R. in project preparation and implementation of broad-based infrastructure development, is the crucial need to pay ample attention to integrated and consistent development with relevant countries in the region with respect to policy and institutional issues. In fact, since the GMS economic cooperation framework is relatively loose, harmonization of institutional aspects among relevant countries becomes the key to effective regional development.

On the other hand, for Malawi, it is expected that development of institutional aspects including One Stop Border Post (OSBP) and customs procedures would be relatively easier compared with the case of the GMS, given the on-going progress of soft infrastructure development under the SADC regional economic cooperation framework.

4.2. Comparative Analysis: Agro-Oriented Inland Countries

The next comparative analysis focuses on ‘land-locked’ (= with no coast line) ‘agro-oriented’ countries across the world. An inverse relationship between economic efficiency (measured in terms of ‘GDP per capita (US$)’ on the left side graph, and ‘agriculture value-added per worker (US$)’ on the right side graph) and the share of agriculture in GDP (%) implies that an economy with a greater share of agriculture tends to have lower efficiency/productivity, both for the agro-sector and for the whole economy. This also implies the possible existence of a ‘ceiling’ or ‘upper limit’ for the value added that an agro-oriented economy can generate.

If the Malawian economy grows at 12% on a nominal basis (as assumed under NES) for the next twenty years, GDP per capita and agriculture value added per worker will be around $3,500 and $1,500, respectively, which are close to the current level for countries such as Mongolia, Uzbekistan and Paraguay. But given that there are almost no countries beyond them in terms of efficiency, this may become the future reality faced by Malawi, if the country goes for a strategy of ‘agro-centered’ economic development. In other words, with this strategy, Malawi will not be able to maintain accelerated growth forever, and it should therefore work for another couple of decades to take advantage of what they have, and to shift toward export oriented economy.



Source: JICA Study Team from the World Bank

Figure 4.3 Inland Countries: Economic Efficiency and Share of Agriculture

4.3. Comparative Analysis: Evaluation of constraints to growth through HRV Model

Another cross-national analytical exercise is to identify the binding constraints that restrict Malawi's economy from growing further. For this purpose, we use a scoring system utilizing the HRV framework, developed by Hausmann, Rodrik and Velasco (2005)[5]. Under the HRV framework, binding constraints are decomposed into ten factors (#1-10 at the end of the tree in the figure below) as shown below. The degree of each of the 10 constraints was scored using data items describing the extent of each constraint, and as many countries as possible were ranked for each constraint year by year. If a country is ranked higher (i.e. 'less constrained'), it receives a higher score[6].

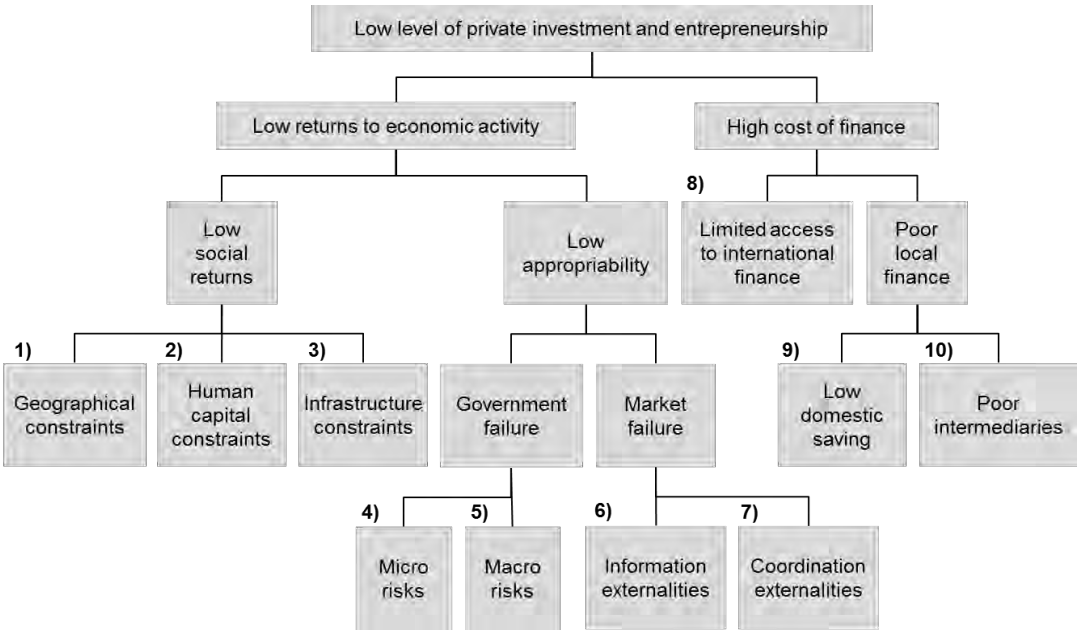
The summary results for Malawi and neighboring countries (Mozambique, Tanzania, Zambia and Zimbabwe) for eight categories[7] are shown below. As a result of this scoring, the most binding constraints for Malawi have been indentified to be; 1) **infrastructure constraints**, 2) **geographical constraints**, and 3) **financial constraints** (namely, **access to international finance**, **poor intermediaries** and **low domestic savings**), of which 1) and 3) are more or less common across the region. Also considering the macroeconomic instability of recent years, the relevant score for Malawi (**macroeconomic risks**) is most likely to be deteriorating, although that has not been captured due to the limed data availability (only up to

[5] See, e.g., Ricardo Hausmann, Dani Rodrik, and Andrés Velasco. 2005. Growth Diagnostics, Manuscript, Inter- American Development Bank; see also Ricardo Hausmann, Bailey Klinger, and Rodrigo Wagner. September 2008. Growth Diagnostics in Practice: A 'Mindbook', Center for International Development (CID) at Harvard University, CID Working Paper No. 177 [citing the 2005 manuscript].

[6] The most constrained countries were scored 0 out of 10, while the least constrained countries were scored 10 out of 10. When more than one data item was used to score one constraint, the scores were made from the view point of each data item, and then the mean value calculated to determine the score of the constraint.

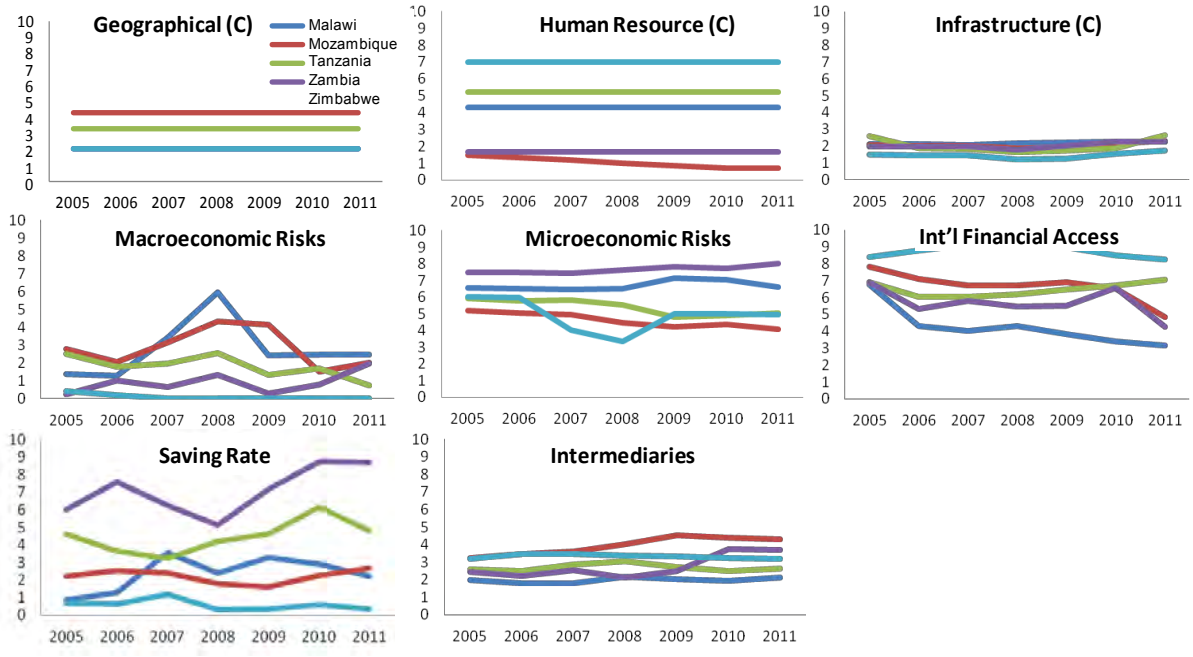
[7] No score is available for 6) information externalities and 7) coordination externalities, since the relevant indicators were not identified.

2011). By the same token, the score for 'intermediaries', with interest rate spread as one of the components, should be worse in 2012 than in 2011.



Source: JICA Study Team from Hausmann, Rodrik and Velasco (2005)

Figure 4.4 HRV Model (Conceptual Framework)



Source: JICA Study Team from the World Bank

Figure 4.5 HRV Scoring Results (by Item)

4.4. Implications for the Future Directions of Malawi

Three implications can be derived from the above bench mark analysis: (1) in case Malawi pursues the development of agriculture and agriculture-related industries as the country's growth driver, it should also recognize possible limitations stemming from being a land-locked agricultural country, (2) in case Malawi seeks an agriculture-oriented economy for its development path, then exploring possibilities for a "regional solution" would be the way forward, and (3) in order to effectively pursue a "regional solution", overcoming Malawi's constraints to growth including "geographical conditions", "infrastructure", and "access to finance" becomes critically important.

Seeking a "regional solution", taking advantage of economic growth in neighboring countries in the region, would be a relevant policy option for Malawi. In other words, developing and strengthening "win-win" relationships with neighboring countries is crucial for Malawi to make an economic leap. For example, facilitating a "complementary business relationship (development of production base)" in cooperation with Mozambique and Zambia, based around a Special Economic Zone to be established near Blantyre is extremely important.

In fact, a framework for seeking a "regional solution" – the Zambia Malawi Mozambique Growth Triangle (ZMM-GT) – is already in place. Malawi would be able to take the opportunity to pursue such a "regional solution" utilizing this framework.

Following are some examples of a possible "regional solution" for consideration.

<Examples of possible "regional solution">

"Import soy beans and cotton produced in Zambia through the Nacala Corridor, and create a food processing industry and textile industry in collaboration with the SME clusters to be established in the SEZ near Blantyre".[8]

"Take advantage of coal development in Tete Province, Mozambique and import lower cost fertilizers in order to increase agricultural productivity, and create food processing industry in the SEZ to be established near Blantyre for export inside and outside the region".

"Export consumer goods, service and labour to an expected growth pole in Tete Province to achieve "win-win" situation for both countries".[9]

[8] This is an "ideal" future picture. It will facilitate import substitution for soya bean oil and textile/ apparel as well as achieve expansion of exports inside and outside the region. On the other hand, employment considerations should be made – the key is to facilitate new employment for farmers who may lose their jobs due to the shift in agricultural production and industrial structures.

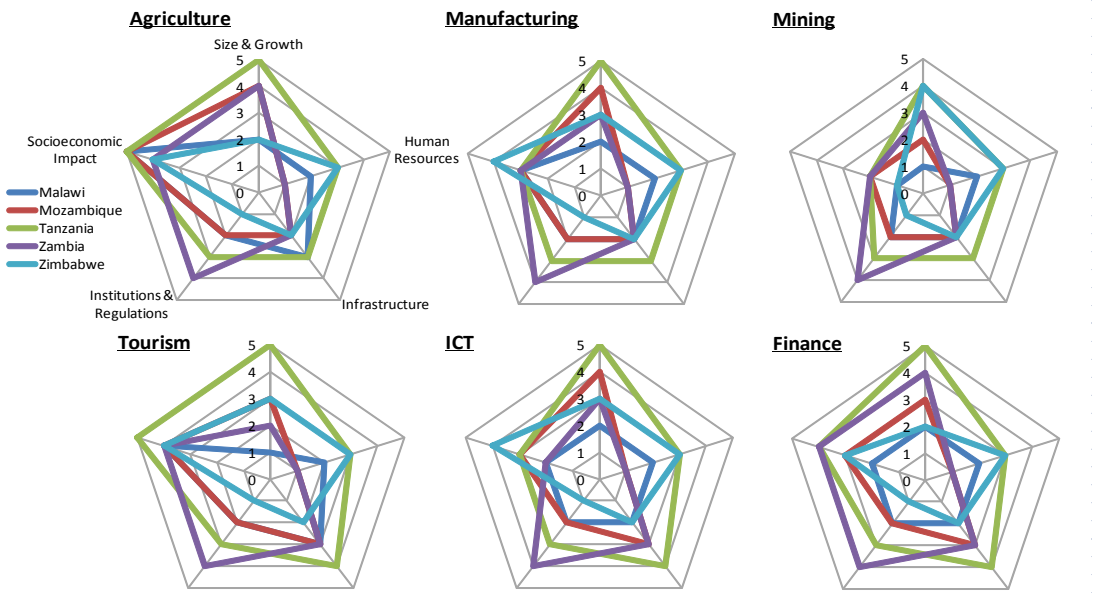
[9] This is "relatively realistic" future picture. It will facilitate exports of consumer goods from Malawi to Mozambique, and will be able to formalize informal sector labour in Malawi. While at the same time, Mozambique, experiencing significant foreign currency inflow from activated resource-based industries, could avoid falling into "Dutch disease" through import promotion from Malawi.

5. Comparative Advantage and Potential of Malawi Industry Fundamentals vis-à-vis Neighboring Countries

This chapter examines the fundamentals of Malawi's domestic industry in comparison with its neighboring countries (Mozambique, Tanzania, Zambia and Zimbabwe) for six sectors (agriculture, manufacturing, mining, tourism, ICT and finance) based on the assessment of five aspects --- 1) industry size/growth, 2) human resources, 3) infrastructure, 4) institution/regulatory environment and 5) socioeconomic impact.

Assessment using a 1-5 grading is based on the combination of quantitative and qualitative aspects, in which 1) relies more on the actual data, whereas 2) and 3) utilizes the HRV scoring [10] and 4) is based on the result of 'Doing Business 2013'[11] by the World Bank. Lastly, 5) is based on the qualitative assessment of 'job creation/poverty reduction potential' and 'environmental burden'. While the scores for 2), 3) and 4) are based on relative terms among all the sample countries, those for 1) and 5) are only among the neighboring countries mentioned above.

The summary results are shown below.



Source: JICA Study Team

Figure 5.1 Summary Results of Industry Scoring for Malawi and Neighboring Countries

One caveat regarding this scoring is that those for different categories cannot be added up to obtain a single score for each country, due to the varying scoring criteria and possibly varying degree of contributions to economic growth. Therefore, these results are used, along with export potential evaluated in Chapter 6 and

[10] Employment/unemployment ratios, wage level, school enrollment and literacy rate were used for 'human resource' scoring, whereas customs efficiency, cost of import/export, logistics performance index (by the World Bank), road density, percentage of roads paved, water access and other sector-specific indicators were used for the 'infrastructure' scoring.

[11] 'Ease of starting a business', 'dealing with construction permits', 'access to electricity', 'property registration', 'getting credit', 'investor protection', 'taxation', 'border trade', 'contract enforcement' and 'resolving insolvency' were examined for the 'institution/regulatory environment' scoring.

the impact of facilitating the Nacala Corridor examined in Chapter 9, as inputs for identifying the industries which potentially can be growth drivers for Malawi.

As far as the 'domestic' aspect of the industry fundamentals is concerned, some extent of comparative advantage over neighboring countries can be identified for agriculture and part of manufacturing (food processing, packaging and beverages), which can leverage synergy with agriculture. Some of the contributing factors in these sectors are; 1) existing agricultural infrastructure (such as road and water access), and 2) job creation potential resulting from the existing and envisioned agro-oriented economic structure of Malawi (reflected on 'socioeconomic impact' in Figure 5-1). Also for the tourism sector, although not as much as with agro-related sectors, some extent of contribution in job creation and foreign currency earning opportunities should be expected, if the potential of existing tourism resources are maximized. In most of the other sectors, on the other hand, there are virtually no categories for which Malawi has advantages over neighboring countries. This is reflected in the pentagons for Malawi fitting completely inside those for other countries for mining, ICT and financial sectors, implying the difficulty Malawi will encounter when seeking any form of comparative advantage in the immediate future.

6. Growth and Export Potential of Industries in Malawi

6.1. Agricultural and Agro-Processing Products Sector

In order to shift Malawian traditional agriculture into market-oriented agriculture, there are several obstacles and challenges such as traditional customary land systems, old inefficient production, logistics and market mechanisms. There also need for a paradigm shift from the perspective of the production side, for example, “what we can produce”, to the perspective of market demand such as “what the current market or consumer needs” (and then consider “what we can produce for that market”), considering not only the market for agricultural products but also for whole value chains of production, processing, logistics and wholesaling.

These perspectives are quite similar to company strategies in the private sector. When we consider the promotion of agriculture and the agricultural processing industry in Malawi, the scheme to collaborate with the private sector and transfer their market-oriented strategies to farmers is required for the palladium shift mentioned above. Under the Malawian oligopoly market, where a limited number of companies dominates each market with few competition, prices tend to be set at a relatively high level, combined with high transportation costs. The investment and market environment in Malawi is also not so favorable to foreign companies to invest in Malawi, especially in the agricultural sector because of some laws and regulations.

Based on these factors and demands for agriculture and agricultural products in the neighboring countries, this chapter examined the potential of the agricultural and agro-processing sectors as analytical background and situation for each agricultural product or the sector.

(1) Cluster 1：Oil Seed Products

Four kinds of oil seed (sunflower, ground nut, soya, and cotton) listed in NES have high demand both from domestic and international markets since they can be processed into various products including cooking oil. However most of the companies processing oil seed in Malawi produce and sell their products for local markets, not for export markets.

Sunflower is easy to grow and the productivity is relatively high in Malawi compared to the neighboring countries. Groundnuts have high potential for export, if the issues related to aflatoxin are solved. There is high potential for soya (white Non-GMO beans) export to international markets, and to develop processing and value added industries as the manufacturing sector develops. Cotton seed oil has relatively low potential compared to these three seeds.

(2) Cluster 2：Sugarcane Products

The sugarcane market is almost monopolized except for a few small scale companies there. It is exported to EU due to the import quota, and to surrounding countries as well. This trend seems to be continued because the EU continues to set the quota for the time being, and sugarcane productivity in Malawi is the highest among neighboring countries and other export countries. Sugarcane in Malawi can be processed into rum, confectionery, ethanol, and demand for these processed products will be higher as the economy develops. However, sugarcane must be planted in irrigated land and near to the factory since they have to be squeezed within the certain time. This means that a well-established production system and inputs are needed for sugarcane production.

(3) Cluster 3：Manufacturing (Dairy, Maize, Rice, Wheat, Vegetables, Fruits)

As for dairy, there is a shortage of products and they are mostly imported from the South Africa. This means that there is room for import substitution. Neighboring countries also import dairy products, so the export potential will be there if Malawi can process dried milk or skim milk, which can be carried without cold chain equipment and under insufficient transportation conditions.

Export of maize was banned several times due to repeated serious famine during this decade but the amount of both formal and informal (Informal Cross Border Trade: ICBT) export has been increasing.

Rice is also one potential agricultural product, for which demand from neighboring countries is high. Some farmers in the Northern region, including One Village One Product groups, have already exported high quality rice, which is selected and graded to eliminate cracked rice and stones, to the other countries.

Imported wheat is consumed in Malawi and domestic production is limited. Wheat cultivation requires agricultural inputs and knowledge, and the potential for export is relatively low compared to the other products.

Most local vegetables and fruits are produced and sold locally. However, supermarkets in Lilongwe and Blantyre do sell imported vegetables and fruits from the South Africa. There is potential to substitute these imported vegetables and fruits with locally grown produce. Small scale beverage companies use domestic materials but the large scale companies import fruits extracts from South Africa. The potential for exporting processed fruit is relatively low due to low technology and unstable supply (harvest loss is very high).

(4) Existing Cluster：Tobacco, Tea

Tobacco is the main export product in Malawi. Considering decreasing demand from the developed countries under the global anti-tobacco movement and increasing demand from the middle income countries, total global demand will gradually decrease in the middle- to long-term. Productivity of tobacco in Malawi is the same level as in neighboring counties.

Tea productivity is relatively high and the amount of production in Africa is large. Malawian tea has beautiful red color but the quality is not high, and is therefore mainly used for blended tea. Malawian tea is unknown in the global market and factors surrounding tea production such as decreasing production and an aging labor force will be obstacles to developing and expanding this product.

(5) Others

Cassava (there is almost no export/import in Malawi but demand from surrounding countries and potential for processing various industrial products are high), coffee (a small amount of high quality coffee is exported), peas (pigeon peas are exported to India) and sesame (informal trade through Mozambique) will be potential products.

6.2. Other Industries (Manufacturing, Mining, Tourism, ICT, Banking Sector)

(1) Manufacturing

The GDP share of the manufacturing sector is the largest among non-agro sectors (10.8%, 2007-11). On the other hand, sector growth is slow in recent years, at 2.2 % in 2010, 1.7 percent in 2011 and 2.0 percent in 2012. The growth rate of manufacturing is the lowest level among the sectors.

Table 6.1 GDP Growth by Sector

	2009	2010	2011	2012
Agriculture, forestry and fishing	13.1	2.0	6.4	4.1
Mining	4.9	80.2	(4.5)	13.9
Manufacturing	4.8	2.2	1.7	2.0
Electricity, gas and water supply	6.6	4.0	4.4	2.0
Construction	7.4	16.1	(2.4)	4.2
Wholesale and storage	6.6	8.0	3.5	5.0
Transportation and storage	8.9	4.2	2.7	4.2
Accommodation and communication	13.2	8.4	0.4	6.0
Information and communication	10.5	10.0	6.5	7.5
Financial and insurance activities	7.8	10.6	10.0	8.7
Real estate activities	12.1	11.0	2.6	2.6
Public administration and defense	4.9	5.8	(1.8)	1.1
GDP at constant market prices	8.9	6.7	4.3	4.3

Source: Annual Economic Report 2012

The majority of exports in the manufacturing sector is agro-processing (50.6%), followed by plastic/packaging (28.6%) and then assembly (18.2%). Beverages is rather small (2.6%). Plastic/packaging is in high demanded in surrounding countries. Beverages (beer) is the only franchise in the region.

The major constraint for the manufacturing sector is the high interest rate, which hinders SMEs (for example, in agro-processing, plastic/packaging) to expand their export business. For beverages, high tariff rates in the surrounding countries (except Zambia) have been a barrier to exporting.

(2) Mining

The GDP share of the mining sector is relatively small (1.8%, 2007-11), even though the sector's growth is the fastest in the whole economy. However, this growth is volatile, at 4.9 percent in 2009, 80.2 percent in 2010, minus 4.5 percent in 2011, and 13.9% in 2012. Uranium dominates in terms of export value. Malawi exports several minerals (coal, uranium, agriculture lime, gemstones), and uranium is the second largest export item among all sectors (10% of total exports in 2011).

The opportunities for the mining sector are as follows.

- Sustainable export-led growth requires diversification of exports, reducing reliance on products that are vulnerable to seasonal shocks. The mining sector is expected to contribute diversification.
- It is deemed that Malawi has abundant mineral resources.

On the other hand, the constraints for the sector are as follows.

- The price of uranium declined sharply immediately after the tsunami in Japan, from US$72/lb in 2011 to US$40/lb in 2013.
- Ad-hoc arrangements for concession negotiation under the Mining Act 1981 (such as royalty and tax) hinders investments in the mining sector in Malawi.

(3) Tourism

The GDP share of the tourism sector is small (2.1%, 2007-11) with moderate growth in recent years, at 13.2% in 2009, 8.4% in 2010, 0.4% in 2011 and 6.0% in 2012.

The majority of visitors is for 'official/business' reasons. Visitors arriving for holidays are limited, at only 20-30%.

Table 6.2 Number, Nights, Purpose of Visitors to Malawi

	Non-resident departures (number)	Average nights spent per visitor	Average expenditures per person per night	Mode of departure		Purpose of visit		
				Air (number)	Other (number)	Holiday (number)	Official/ business	Visit relatives/friend
2008	742,458	8	81,568	227,143	515,312	179,300	372,276	190,881
2009	755,031	7	89,800	250,960	504,071	245,527	381,845	127,658
2010	746,129	9	79,568	224,578	517,906	189,239	434,957	121,933

Source: Quarterly Statistical Bulletin June 2012

The opportunity for the tourism sector is that Malawi has abundant tourism resources, such as Lake Malawi, national parks and other cultural heritage sites. On the other hand, limited air access to Malawi (SA, Kenya Airways, and Ethiopian Airlines) means that high-spending tourists avoid Malawi and makes it expensive for other travelers as well.

(4) ICT

The GDP share of the ICT sector is still small (3.8%, 2007-11), but showing robust growth, at 10.5% in 2009, 10.0% in 2010, 6.5% in 2011, and 7.5% in 2012.

GSM (Global System for Mobile Communications) area coverage is 99.5% in the territory of Malawi, but mobile penetration is only 26.7%.

Table 6.3 Indicators of ICT Penetration

	Unit	2009	2012
GSM coverage	%	93.30	99.55
Mobile subscribers	per100 person	5.20	26.69
Fixed-line subscribers	per100 person	1.30	0.50
Internet users	per100 person	0.15	4.94

Source: Malawi's Infrastructure, World Bank, 2011; RCIPMW Monitoring and Evaluation,

There is still room for penetration of both mobile phones and internet. The current socioeconomic situation in Malawi stimulates new business opportunities in the ICT sector, such as mobile banking. It would make access to finance easier for people located in isolated area. However, high electricity cost has been passed through to ICT users. A shortage of skilled labor is also one of the obstacles.

(5) Finance and Banking

The GDP share of the finance and banking sector is moderate (5.0%, 2007-11) among service sectors. However sector growth has been robust in recent years, and it is the second fastest growing among sectors, at 7.8% in 2009, 10.6% in 2010, 10.0% in 2011, and 8.7% in 2012.

Commercial Banks

There is a high level of bank profitability due to interest rate structure (that is, low deposit interest rate vis-à-vis high borrowing rate), which results in very little competitive pressure on the commercial banks to expand their client base and develop new markets. The majority of loans to private entities is short-term lending with high interest. As a result, money spills into consumption spending (on products like fuel), not capital investment.

Micro Finance Institutes

High interest rates, a limited number of access points in remote areas, and road infrastructure restrict the rural population's access to financial resources.

Whereas the development of financial sector is vital for economic development, the contribution of this sector in Malawi has been insufficient due to the constraints stated above. Another constraint is that the outreach of the financial service is limited (only 26% of adult population has access to formal financial services). It is necessary that the financial sector has a positive impact on the economic growth of Malawi by increasing lending for production (capital investment) rather than for consumption.

6.3. Evaluation of Potential Industries

In this section, the growth potential of industries in Malawi is evaluated using multidimensional viewpoints, as discussed in prior chapters.

Evaluation Items

Items for which current status and potential are evaluated are:

i) GDP share (average of 2007-11), ii) Real GDP growth rate (average of 2007-11), iii) Export (2010, million USD), iv) Foreign exchange earning potential, v) Policy support, vi) Job creation potential, vii) Comparative advantage within the region, and viii) Impact of Nacala Corridor.

Items which are evaluated as constraints are:

i) Access to finance, ii) Impact of financial costs (high interest rate), iii) Impact of shortage of power, iv) Impact of transport infrastructure (hard and soft), v) Institutional constraints, vi) Access to markets, and vii) Access to labor.

Method of Scoring

Scoring for each evaluation item is made on a five-grade scale. A score of five (5) is the highest score, decreases with lower numbers down to one (1), which is the lowest score.

The purpose of this scoring is to "compare relative superiority/inferiority between sectors". Scoring is not made based on quantitative criteria. "Growth potential", as a final outcome of the evaluation, can not be calculated by simply adding up the results of scoring in each evaluation item. Instead, "Growth potential" is determined by comprehensive analysis scoring results for each evaluation item.

Evaluation

The results of the evaluation for each industry are shown in the table below.

Table 6.4 Evaluation for Potential Industry

			Agriculture	Manufacturing			Mining	Tourism	ICT	Finance and Banking	Transportation &Storage
				Agro-processing	Plastic /Packagin	Beverage					
Macro Economics	GDP share (average of 2007-11)		26.4	10.8			0.9	2.1	3.8	5.0	3.8
	Real GDP growth rate (average of 2007-11)		7.4	9.1			32.6	7.5	18.3	5.3	10.7
	FDI (share in 2010-13, value base)		0.0%	33.9%			1.8%	8.7%	2.6%	2.6%	0.0%
	Export (2010, million USD)		666	149	22	2	114	70	N/A	N/A	N/A
	Foreign exchange earning potential	5: hign～1:low	5	4	3	2	4	3	1	1	3
Policy support		5: strong～1: weak	5	5	5	5	3	3	4	4	3
Job creation potential		5: high～1: low	5	4	3	2	2	3	2	2	3
Comparative advantage within the region		5: strong～1: less	4	3	3	2	2	2	1	1	2
Impact of Nacala Corridor		5: high～1: low	5	5	3	4	1	2	1	1	5
Constraints	Access to Finance	5: excelent～1: poor	1	2	3	3	5	3	4	N/A	4
	Impact of financial cost (high interest rate)	5: low～1: high	1	2	2	2	5	2	3	N/A	2
	Impact of shortage of the power	5: low～1: high	4	3	2	2	1	3	2	3	N/A
	Impact of transport infrastructure (hard & soft)	5: low～1: high	1	2	2	2	2	1	5	5	3
	Institutional constraints	5: low～1: high	2	3	3	3	1	4	5	5	3
	Access to Market	5: excelent～1: poor	1	3	3	3	2	2	3	2	2
	Access to Labor	5: excelent～1: poor	5	4	3	3	2	3	2	2	3
Growth Potential		5: high～1: low	5	4			2	2	3	3	3

Source: JICA Study Team

7. Forecasting of Freight Transport after Nacala Corridor Development

7.1. Introduction

In this chapter, the international and transit freight traffic in 2022 is forecasted by route. The impact of ongoing improvements to rail, road and port infrastructure of the Nacala Corridor is the primary focus.

International freight traffic volume, modal split and routing in 2022 will be determined by: (i) growth in population and the economy; (ii) increased trade intensity, reflected in crop diversification, the development of the mining and manufacturing sectors for traded goods; (iii) competition between modes and ports in service quality and price; and (iv) reduction of non-tariff barriers. Transit traffic volume will depend on new infrastructure opportunities (primarily those on the Nacala Corridor) and regional development. Malawi will be primarily a transit country by 2022, in volume terms.

One particular uncertainty is how much of the transport cost reduction resulting from improved infrastructure will feed through to final prices and stimulate international trade. Rigidities in ownership and operation will need to be addressed to maximize gains. A further uncertainty is whether seamless multimodal transport will develop, through the establishment of dry ports.

7.2. Target Transport Corridors

Transport corridors defined in this study of freight transport forecasting and the major development projects along those corridors are shown in Figure 7.1 and Figure 7.2. Comparing the road transport distance of the target corridors from Blantyre, Beira and Nacala shows that they are almost equidistant, while Dar es Salaam is 220% as far and Durban 287% as far. From Lilongwe, Beira is closer than Nacala, by 9% compared with Nacala by rail, and 18% closer than Nacala by road. Dar es Salaam is 35% farther than Nacala by road, and Durban is 221% farther. Given the long distances and the distance saving from using Nacala compared to Dar es Salaam and Durban, an efficient rail service would be the mode of choice for all suitable port traffic. However, some commodities need intermediate processing in Johannesburg or Harare, and combined with trade imbalances, the availability or lack of backhauls, and road network's more reliable and flexible scheduling, road can still be competitive even over longer distances.

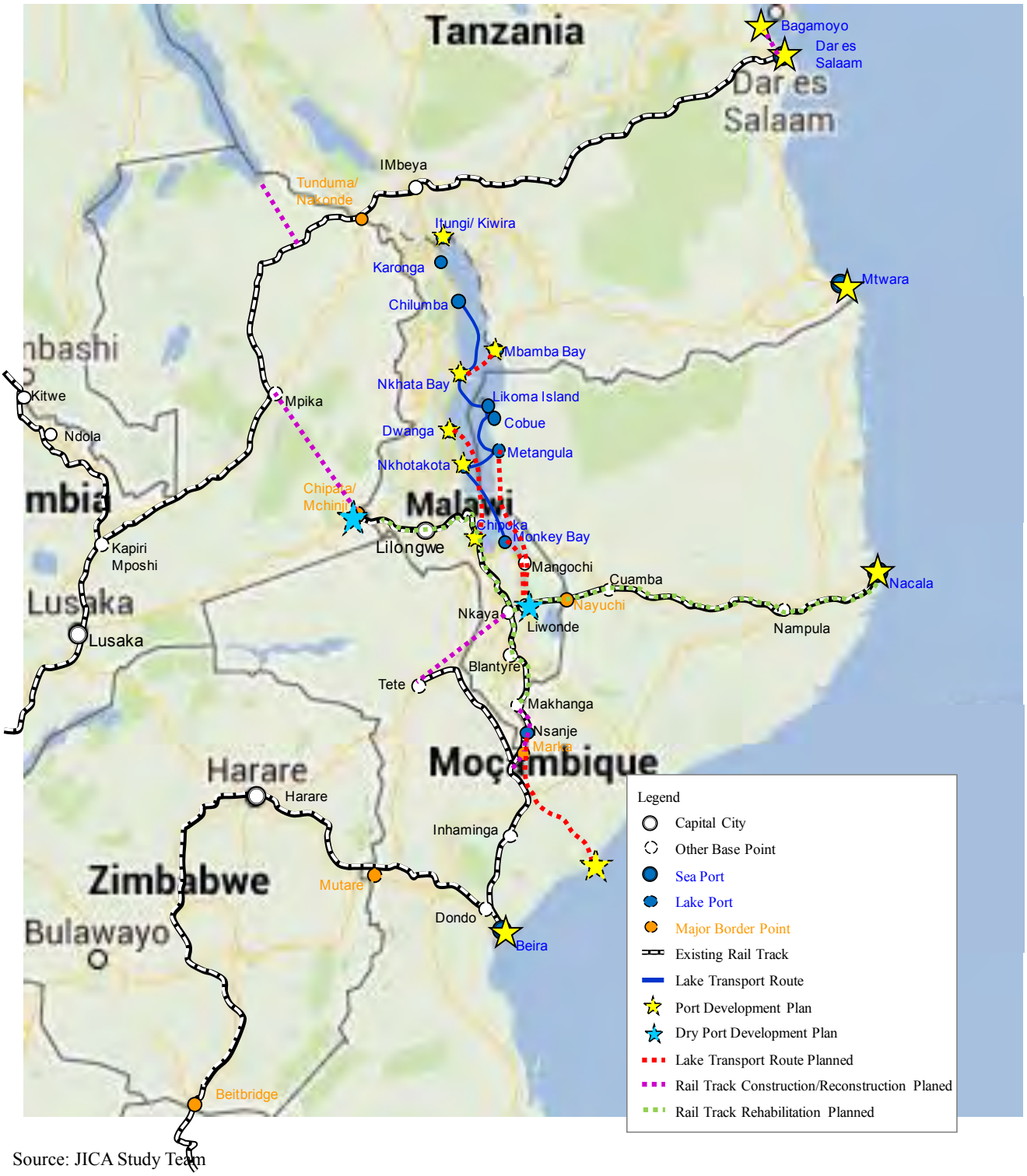
7.3. Exports, Imports and Transit Traffic in 2022

Exports, imports and transit traffic volumes in 2022 for major commodities, including tobacco, sugar, tea, cotton, pulses, coal, niobium, uranium, coal, petroleum products, fertilizer, clinker, cement, lime, steel, and vehicles were estimated by considering the business plans of each industry. However, elasticities to GDP 2010–2022 of 1.3 for imports and of 1.5 for exports have been applied to forecast "other items", giving annual growth rates of 6.1 and 7.1% respectively.

The forecast international and transit traffic volumes and the modal split assumptions are given in Table 7.1, with the 2010 figures for comparison.

Source: JICA Study Team

Figure 7.1 Major Development Plans of Regional Road Corridors in and around Malawi



Source: JICA Study Team

Figure 7.2 Major Development Plans of Railway, Port, and Dry Port in and around Malawi

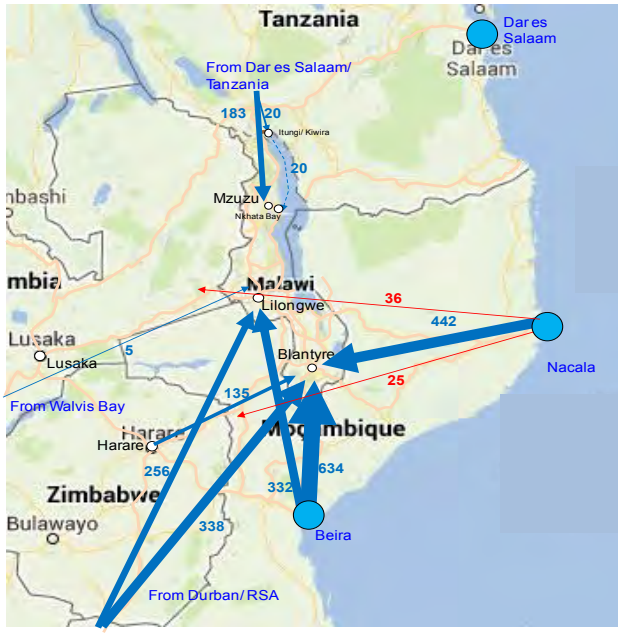
Table 7.1 International and Transit Traffic Volume 2010 - 2022

	Year 2010 (Actual)		Year 2022 (Forecasted)			
	Transport volume (1,000 ton)	Growth rate (%)	Transport volume (1,000 ton)	By Rail (%)	Railway Transport Volume (1,000 ton)	Road Transport Volume (1,000 ton)
1. Exports:						
Tobacco	154	-0.2	150	30	45	105
Sugar	98	7.2	225	65	146	80
Tea	52	-1.2	45	10	5	41
Cotton	24	12.6	100	20	20	80
Pulses	30	10.5	100	40	40	60
Coal	13	5.6	25	0	0	25
Niobium	0	na	4	100	4	0
Uranium	1	10.5	2	0	0	2
Others	217	7.1	494	13	64	429
Total Exports	**588**	**5.7**	**1,145**	**28**	**324**	**821**
2. Imports:						
Coal	20	46.8	2,000	100	2,000	0
Petroleum products	243	8.4	640	60	384	256
Fertilizer	333	4.8	584	30	175	409
Clinker	200	-2.4	150	30	45	105
Cement	47	-12.1	10	0	0	10
Lime	38	-5.2	20	0	0	20
Steel	28	6.6	60	40	24	36
Tobacco	20	0.0	20	0	0	20
Vehicles	15	5.9	30	0	0	30
Others	837	6.1	1,703	10	170	1,533
Total Imports	**1,781**	**9.4**	**5,217**	**54**	**2,798**	**2,422**
3. Transit:						
Coal (Mozambique west to Mozambique east)	0		18,100	100	18,100	0
Others (Zambia to Mozambique)	Na		120	70	84	36
Others (Mozambique to Zambia)	Na		120	70	84	36
Others (Mozambique west to Mozambique east)	Na		50	50	25	25
Others (Mozambique east to Mozambique west)	Na		50	50	25	25
Transit Total	**Na**		**18,440**	**99**	**18,318**	**122**
Grand Total	**Na**		**24,802**	**86**	**21,440**	**3,365**

Source: JICA Study Team

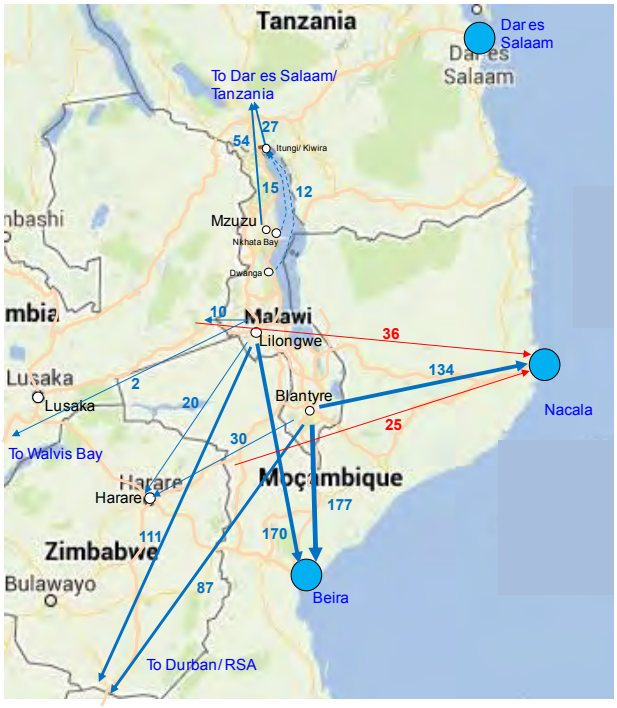
7.4. International Freight Traffic OD 2022

Figure 7.3 and Figure 7.4 show the forecasted road traffic in 2022. The rail traffic forecast is given in Figure 7.5 and Figure 7.6. The volumes are indicative and may vary greatly in practice, as may the modal split.



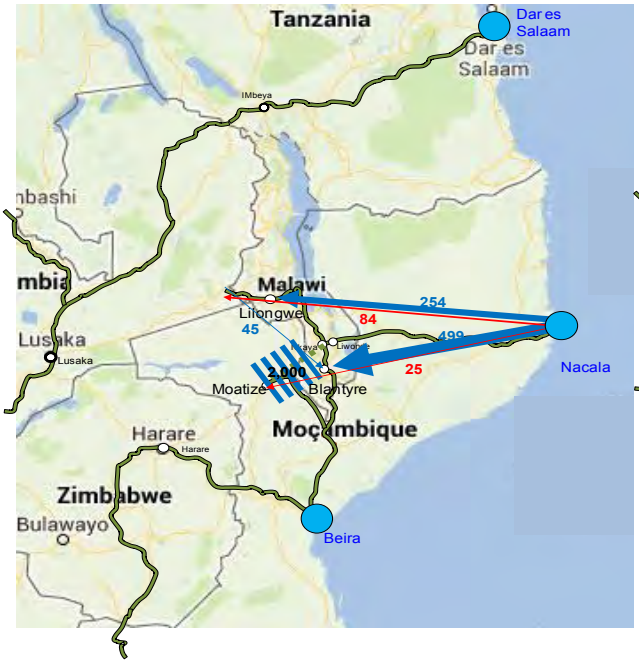
Source: JICA Study Team

Figure 7.3 Imports and Import Transit Traffic Volume by Road in 2022 (Unit: 1,000 ton/ year)



Source: JICA Study Team

Figure 7.4 Exports and Export Transit Traffic Volume by Road in 2022 (Unit: 1,000 ton/ year)



Source: JICA Study Team

Figure 7.5 Imports and Import Transit Traffic Volume by Rail in 2022 (Unit: 1,000 ton/ year)

Source: JICA Study Team

Figure 7.6 Exports and Export Transit Traffic Volume by Rail in 2022 (Unit: 1,000 ton/ year)

8. Potential of Logistics and Wholesale/Retail Industries in Malawi

8.1. Growth Potential of Industries based on Nacala Corridor Development

(1) Expectation for Nacala Corridor Development

It is widely considered that the Nacala corridor will be effective for cost reduction in international transportation. The development of the Nacala corridor will draw up the other corridor's service standard by promoting a competition among corridors. This is beneficial for users who have the options for corridor selection. At the same time, this means that users will not necessarily use the Nacala corridor if its service standard is inferior to the other corridors. Comparing with the Durban corridor, the Nacala corridor seems to have stronger competitiveness especially for Asian export/import cargo. Since Asia is the center of economic growth, the Nacala corridor seems to have good potential.

There are high expectations for railway development because it is believed that railway is a more cost effective mode than truck. Vale's commitment to railways is widely regarded as a good opportunity for better railway service. It is unfortunate that no concrete plan for general cargo transportation is fixed, besides capacity volume being provided by Vale so far.

Zambia is also enthusiastic about the Nacala corridor development, particularly for the benefit of the North-Eastern region of the country. The benefit of cost reduction by railway transportation will be bigger in Zambia because it covers a longer distance than in Malawi. It is also expected that an agro-processing supply chain will be established across Zambia and Malawi, which would utilize the mass production capacity in Zambia and potential export-processing capacity in Malawi (a win-win relation).

Zambia is planning to develop the Chipata railway terminal, but estimated cargo volume remains low. Nonetheless, collaboration with Malawi is necessary.

(2) Potentiality

In order to realize qualified railway service (dedicated, scheduled frequent service), it is critical to effectively use rail space provided by the Vale concession. As the maximum transportation capacity provided by the concession will be very large (3 million tons per year), it is important to accumulate as much cargo volume as possible, as well. Accumulating cargo is essential to realizing weekly service.

Based on our demand forecast, the practical solution is as follows:

- Northern part: cargo volume will be nearly enough for weekly service, which means that cargo accumulation effort is essential, targeting Cipoka, Chipata and Lilongwe cargo.
- Southern part: import volume of petrol will reach large volumes, equivalent to weekly service. It is practical to provide weekly service for general cargo utilizing tank return delivery. It is desirable to realize biweekly services.

8.2. Infrastructure Development Plan for Logistics Industries

Besides basic infrastructure development including rail, truck and/or wagon, the following development plans appear to be necessary for the development of logistics and wholesale/retail industries.

(1) Liwonde Logistics Function

Liwonde seems to be a good location for serving multimodal functions, such as 1) northern part rail cargo

accumulation points and 2) lake-rail-truck mode connecting points.

(2) Blantyre Dry Port

A new private sector terminal, the Chilinba terminal is planned to provide comprehensive railway service, including customs clearance and container depot. Unless this new terminal has enough capacity, it is necessary to develop a new facility or expand the capacity of the existing facility.

(3) Lake Transport

Since the private sector has been trying to revive lake transportation, this should be connected with the Nacala corridor, together with multimodal facilities. Chipoka port already has a rail connection, but renovation and improvement are necessary for smooth multimodal service. Chirumba and Nkatabe ports need to develop their facilities.

(4) Lilongwe Cargo Combining Function

In comparison with Blantyre, the northern part does not have enough cargo volume for weekly rail service. It is necessary to have a cargo accumulation function, combining Lilongwe and Chipata cargo.

(5) Border Crossing Point

Besides the railway, truck delivery is an important mode. Regarding international truck transportation, smooth border crossings are of utmost importance.

The neighboring countries use the same IT customs system (ASYCUDA) which can allow border crossings in bonded status and customs clearance at the destination. In reality, since harmonization and standardization among regional countries have not yet been achieved, bonded border crossing remains unsustainable. Harmonization and standardization for bonded border crossing is necessary.

Although the OSBP program has been improving, redundant inspection still remains. Improvement and facilitation for border crossing procedures are necessary.

(6) Qualified Warehouse Service

According to our demand forecast, it is estimated that approximately 470 thousand tons of high valued cargo will be imported through the Nacala corridor. In order to handle this cargo, qualified inventory-oriented warehouse facilities should be improved.

Since Malawian wholesalers and retailers are forced to accept low cargo turnaround and long order cycles from South Africa, bonded inventory-warehouse combined with dedicated and regular railway service is expected to achieve lower inventory storage and punctual procurement operations.

According to our demand forecast, Blantyre has the potential for developing an inventory-oriented facility adjacent to the rail cargo terminal.

9. Impact Analysis of the Nacala Corridor Development

This chapter analyses the impact of the Nacala Corridor development on the Malawi economy. This is examined in terms of 1) transformation of transportation costs, and 2) demand shift among neighboring countries competing for exports.

9.1. Impact on Transportation Costs

Quantitative analysis for transportation cost reduction by opening the Nacala Corridor is conducted, based on i) a change in freight flow passing Nacala Corridor and alternative routes in the territory of Malawi in 2022, ii) export/import items, and iii) mode of transportation. The amount of cost reduction as a result of the analysis is shown in the table 9.1.

Based on the amount of cost reduction in export/import, the ratio to nominal GDP of Malawi is calculated. As shown in the table 9.2, the ratio of cost reduction in transportation to GDP in 2022 is expected to be 0.3%, 0.2%, 0.4% in the main scenario, upside scenario and downside scenario respectively. This means that the effect of boosting GDP could be realized in proportion to transportation cost reduced by opening the Nacala Corridor. It should be mentioned that such impacts are not negligible.

9.2. Demand shift

(1) Agriculture

It is expected that trade and logistics among Malawi and five provinces in Mozambique along the Nacala Corridor will be activated when the corridor is completed. Most agricultural products made in these provinces are similar to Malawi's, and most are staple foods, especially maize and cassava. Malawi also produces these products itself, so there is almost no impact projected for these products after the Corridor opens.

Cashew nuts from Mozambique are not a competitor to Malawi's, since Malawi does not produce that much. Tobacco has a regional division of labor, in which leaf produced in Tete is transferred to Blantyre to be processed and then transported to the port via the corridor. This division of labor will be strengthened when the corridor is established. Malawi's rice has competitiveness with Mozambique's rice in terms of quality and taste. Given that rice has been imported through ICBT from Malawi to Mozambique, the amount of rice exported will expand.

As Malawi imports most of its agricultural inputs such as fertilizer, chemicals and machines, the total cost for these imported products will be reduced since the transportation cost via the Nacala corridor will be lower, and this will lead to decreased agricultural production costs.

Some agricultural products that are currently exported via the Nacala corridor will receive slight impact from the completion of the corridor. To the contrary, however, agricultural products which are exported via the Beira corridor such as tobacco, tea, sugar, cotton, coffee, and sesame, may enjoy benefits from the Nacala corridor because it will reduce both the transportation and input costs, which include imported fertilizers and chemicals used mostly in estates or by commercial farmers. In this regard, export of these products to surrounding and international markets will be positively influenced, and it is expected that export of these will expand.

Table 9.1 Amount of Cost Reduction by Export/Import, Commodities, Routes, and Transportation Modes

【Export】

Country	items	From	to	Routes and transportation				Cost reduction ($/ton) (C) = (A) - (B)	traffic volume/year (thousand ton、yr 2022) (D)	Cost reduction/year (thousand $、yr 2022) (C) X (D)
				Current routes	Cost ($/ton) (A)	After preparation	Cost ($/ton) (B)			
Malawi	Sugar	Blantyre area（Nchalo）	off shore trade	Beira Corridor	37.2	Nacala Corridor（road）	39.0	-1.8	45	-81
Malawi	Tabaco	Blantyre area	off shore trade	Beira Corridor	65.1	Nacala Corridor（railways）	40.2	24.9	5	125
Malawi	Tabaco	Lilongwe area	off shore trade	Beira Corridor	75.0	Nacala Corridor（railways）	50.0	25.0	20	500
Malawi	Tabaco	Nkhata Bay area	off shore trade	Beira Corridor	112.5	Nacala Corridor（railways+water t	54.0	58.5	20	1,170
Malawi	Tea	Blantyre area	off shore trade	Beira Corridor	65.1	Nacala Corridor（railways）	40.2	24.9	5	125
Malawi	Sugar	Dwangwa	off shore trade	Beira Corridor	58.7	Nacala Corridor（railways+water t	47.0	11.7	51	597
Malawi	Cotton	Lilongwe area	off shore trade	Beira Corridor（40%）、South-North Corridor（Dirban 60%）	135.0	Nacara Corridor（railways）	50.0	85.0	20	1,700
Total										4,216

【Import】

Country	items	From	to	Routes and transportation				Cost reduction ($/ton) (C) = (A) - (B)	traffic volume/year (thousant ton、yr 2022) (D)	Cost reduction/year (thousant $、yr 2022) (C) X (D)
				Current routes	Cost ($/ton) (A)	After preparation	Cost ($/ton) (B)			
Malawi	Petroleum	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（road）	72.7	-3.2	51	-163
Malawi	Fertilizer	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（road）	72.7	-3.2	90	-288
Malawi	Coal	Moatize	Kammuwamba	Road	10.5	Nacala Corridor（railways）	3.9	6.6	2,000	13,200
Malawi	Petroleum	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（railways）	48.6	20.9	269	5,622
Malawi	Petroleum	off shore trade	Lilongwe area	Beira Corridor	80.0	Nacala Corridor（railways）	60.5	19.5	115	2,243
Malawi	Fertilizer	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（railways）	48.6	20.9	70	1,463
Malawi	Fertilizer	off shore trade	Lilongwe area	Beira Corridor	80.0	Nacala Corridor（railways）	60.5	19.5	105	2,048
Malawi	Clinker	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（railways）	48.6	20.9	45	941
Malawi	Irons	off shore trade	Blantyre area	Beira Corridor	69.5	Nacala Corridor（railways）	48.6	20.9	24	502
Total										26,017

Table 9.2 Impact on Malawi Economy by Transportation Cost Reduction

Malawi: Cost reduction in export/Year (thousand USD, yr 2022)	4,216
Malawi: Cost reduction in import/Year (thousand USD, yr 2023)	26,017
Malawi: Total cost reduction /Year (thousand USD, yr 2024)	30,233
Elasticity for GDP: Export	1.52
Elasticity for GDP: Import	1.31

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Inflation rate (%p.a.)	Main scenario	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%	7.0%	7.0%	7.0%	7.0%
	Upside scenario	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%
	Downside scenario	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Exchange rate (KW/$)	Main scenario	249	350	345	340	335	330	325	320	315	310	305
	Upside scenario	249	350	345	340	335	330	320	310	300	290	280
	Downside scenario	249	350	345	340	340	345	350	353	355	358	360
Nominal GDP (million MKW)	Main scenario	1,273,162	1,417,222	1,578,089	1,757,758	1,958,464	2,182,711	2,405,710	2,652,470	2,925,637	3,228,168	3,563,361
	Upside scenario	1,273,162	1,451,781	1,655,660	1,888,483	2,154,496	2,458,598	2,784,565	3,156,400	3,580,983	4,066,291	4,621,582
	Downside scenario	1,273,061	1,399,365	1,538,523	1,691,854	1,860,808	2,046,988	2,203,576	2,372,386	2,554,391	2,750,638	2,962,263
Nominal GDP (thousand USD)	Main scenario	5,110,843	4,049,206	4,574,171	5,169,877	5,846,162	6,614,274	7,402,184	8,288,968	9,287,738	10,413,444	11,683,151
	Upside scenario	5,110,843	4,147,945	4,799,013	5,554,361	6,431,333	7,450,298	8,701,765	10,181,936	11,936,611	14,021,695	16,505,649
	Downside scenario	5,110,439	3,998,185	4,459,487	4,976,040	5,472,965	5,933,299	6,295,930	6,730,173	7,195,467	7,694,093	8,228,509
Nominal GDP growth rate (%)	Main scenario		-20.8%	13.0%	13.0%	13.1%	13.1%	11.9%	12.0%	12.0%	12.1%	12.2%
	Upside scenario		-18.8%	15.7%	15.7%	15.8%	15.8%	16.8%	17.0%	17.2%	17.5%	17.7%
	Downside scenario		-21.8%	11.5%	11.6%	10.0%	8.4%	6.1%	6.9%	6.9%	6.9%	6.9%
Nominal export amount (million MKW)	Main scenario											919,542
	Upside scenario											1,412,514
	Downside scenario											642,827
Nominal import amount (million MKW)	Main scenario											877,664
	Upside scenario											940,441
	Downside scenario											746,872
Cost reduction in transportation/year (thousand USD)	Main scenario											30,233
	Upside scenario											32,630
	Downside scenario											28,001
Cost reduction in transportation/GDP(%)	Main scenario											**0.3%**
	Upside scenario											**0.2%**
	Downside scenario											**0.3%**

(2) Manufacturing (Beverages, Plastics and Packaging)

The manufacturing sector in Malawi conducts limited trade outside the region, and most of the impact from the Nacala corridor will appear in trade within the region.

In the plastics and packaging sector, almost all materials (plastic pellets) are imported within the region and many logistics will be expected to shift from Beira to Nacala port and corridor, in anticipation of reduced transportation cost and time. Plastics and packaging products made in Malawi are exported to Zimbabwe, Zambia, and Mozambique with competitiveness vis-a-vis these neighboring countries. Exports of pipes and hose pipes will be increased because Mozambique does not produce these to any significant degree, and therefore there is no competition between the two. The packaging industry will probably compete with Mozambique products after the completion of the Nacala corridor.

Regarding beverages, fruits juice is made from domestic materials by the most companies in Malawi. According to our interviews, some private beverage companies plan to export their fruit juice to regional markets, signaling a potential expansion of this sector. However Mozambique has received so many foreign investments in the agricultural sector in recent years, and some beverage products might flow into Malawi via the corridor and Malawian products will have to compete with these.

Most materials for beer production are imported and the cost will be reduced and logistics will be shifted from Beira to Nacala. It is expected that beer export will not influenced because there are high tariffs on beer in the surrounding countries, excepting Zambia.

10. Potential Industries in Malawi and Growth Scenarios

10.1. Potential Industries in Agriculture, Manufacturing and Service Sectors in Malawi

Based on the analyses above, which are industrial structure analysis (chapter 2), comparative advantage and potential analysis (chapter 5), evaluation of export potential of industries (chapter 6), and impact analysis of Nacala Corridor development (chapter 9) in particular, the following industries/products are identified as the potential industries/products that the donor countries should support:

- Agriculture: oil seeds (sun flower, groundnuts, soy bean, cotton), sugarcane, rice, pea and dairy products
- Manufacturing: agro-processing, plastic packaging
- Service: ICT, finance and logistics (transportation and storage)

10.2. Infrastructure Development Necessary for Potential Industries

(1) Transport Infrastructure

Currently, the Nacala road development project, which will connect Malawi to Nacala Port in Mozambique by road, is under implementation and the Nacala Port container terminal rehabilitation and expansion are also planned. The comprehensive Nacala Corridor development will dramatically reduce road transport time between Malawi and a sea port where large vessels can call. In addition, the capital dredging project of the access channel of Baira Port and Mtwara Port are planned as a part of development projects of the major sea ports in the region. The Mtwara road corridor will be upgraded and paved, and road improvement projects along Tete Corridor and North-South Corridor are planned as well. Many new development projects, as well as sea port and road improvement projects along the major corridors from/to/through Malawi are expected to be implemented by 2022.

On the other hand, considering the transport distance from/to sea port, railway transport service improvement and capacity increment is a critical issue for Malawi. Although rehabilitation of the Nacala railway track has been started and capacity increment of Nacala railway is expected, budget to procure rolling stocks has not yet been secured. Also, in order to maximize the effect of the Nacala railway after its rehabilitation for transport of general cargos from/to Malawi, rehabilitation of North-South rail line of Malawi, connecting Blantyre and Lilongwe to the Nacala railway, or improvement of connectivity between road transport and railway transport, would be requested. In addition, if the inland water transport utilizing Lake Malawi were developed well, the lake transport connecting the Northern Region to the railway line of Malawi could be a key to reducing transport costs of the Northern Region, where the railway line is not extended.

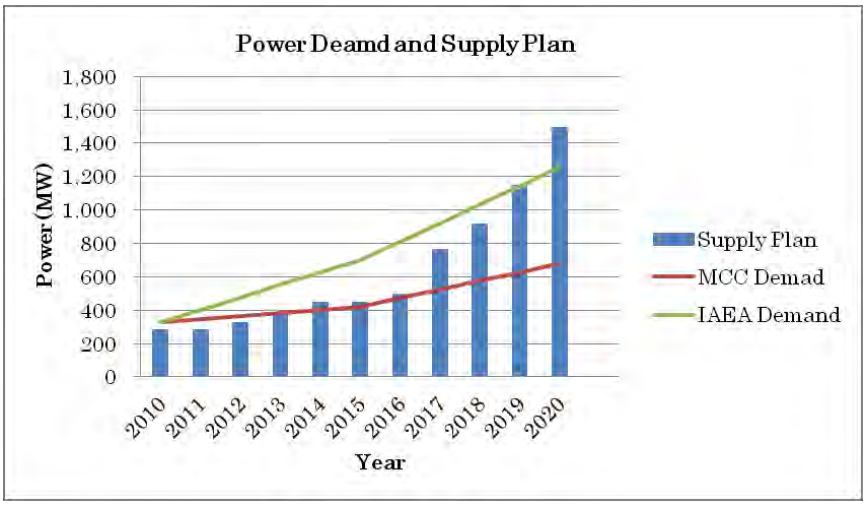
(2) Power Infrastructure

Currently peak energy demand cannot be met in Malawi, and energy shortage is one of the major bottlenecks in industrial growth and promotion of investments. This situation is likely to continue until 2017, when thermal power stations will come on-line. However, the energy supply is expected to be significantly improved by 2022.

The major recent studies including power demand forecast are “Malawi Power System Project Study (MCC, 2011)” and “Malawi Energy Demand Assessment Report (IAEA, 2011)”. While energy demand is assessed to be relatively lower in the MCC study, the IAEA study forecasts higher demand compared to the actual

energy demand change in the past. The "Report on Malawi Power Sector by JICA Expert (JICA, 2012)" assumed power supply by 2020 based on the planned power infrastructure projects in Malawi and compared power supply with power demand in the low case of the IAEA Study and that in the high case of the MCC study as shown on Figure 9.1. As a result, it was assumed that power generation infrastructure in Malawi would probably be developed sufficiently vis-a-vis demand, by 2020.

In addition, Mozambique is constructing its first thermal power station at Ncondezi, in Tete. This is also expected to come on-line in 2017 with 300MW capacity, but is planned for staged upgrading to 1800MW. A 400kV electricity distribution line to Malawi is planned and this would provide 300MW. Therefore, even if power infrastructure projects in Malawi are not implemented as planned, Malawi will have the option of purchasing power from the thermal power station in Tete to cover energy shortages in 2022.



Source: Report on Malawi Power Sector by JICA Expert (JICA, 2012)

Figure 10.1 Forecasted Power Demand and Supply Plan of Malawi

10.3. Growth Scenarios

(1) Real GDP Growth Forecast

In this section, a possible image of economic growth in Malawi is drawn in terms of real GDP growth forecast (by industry and by expenditure) under three scenarios for the next fifteen years, provided the assessment of industry potentials/constraints and possible growth drivers identified through the analysis in previous chapters.

More specifically, forecast of real GDP growth reflects all the findings from: 1) comparative advantage and potential of Malawi industry fundamentals vis-à-vis neighboring countries (Chapter 5), 2) export potential of Malawi (Chapter 6), 3) industry scoring (Chapter 6), and 4) impact of Nacala Corridor development (Chapter 9), taking into account the consistency with the past trends. In line with NES, each growth rate is estimated as an average for every 5 years (2013-2017, 2018-22 and 2023-2027). The three scenarios, along with the underlying assumptions and probabilities in the Study Team's assessment, are as follows.

- **Main Scenario (#1)**: Most probable case, in which a certain extent of (but not full) progress is expected in overcoming technical/institutional obstacles as well as in facilitating the development of potential growth driver sectors. The benefits of the Nacala Corridor development may not be fully

extracted, assuming that the demand growth will not be enough to fill the expanded transport capacity. This scenario includes cases in which the Corridor benefits not only Malawi but also the neighboring countries, resulting in smaller-than-expected improvement in competitiveness on the Malawi side. In that case, external demand does not accelerate as much as what is expected under NES, therefore we can expect only a proportionate expansion of domestic demand. There will be only a moderate appreciation of the Kwacha, which will help reduce inflationary pressure. (Probability = 50%.)

- **Upside Scenario (#2)**: This scenario is the closest case to the NES among the three scenarios, in terms of the growth image of each sector and export. In this 'optimistic' scenario, most of the technical/institutional obstacles are successfully removed, and the full benefit of the Nacala Corridor will be enjoyed. Assuming completion of the corridor by 2017, the growth of export and relevant industries will accelerate in the next five years, which will be followed by the expansion of domestic demand in the last five years. The damage from the demand shift to the neighboring countries will be smaller than in #1, thanks to the successful shift toward higher-value products in the export sector. Upward pressure on the Kwacha will be stronger, but not as strong as to harm export competitiveness. The inflation rate will be higher than in #1, but still moderate at 8% (2013-17), 7% (2018-22) and 6% (2023-27). (Probability = 30%.)
- **Downside Scenario (#3)**: This is the most 'pessimistic' case, in which the progress of removing technical/institutional obstacles will be quite limited, and the competitiveness of Malawian economy will be lost gradually. There will be a downward pressure on the Kwacha due to deterioration in the trade balance, but not as serious as to fuel import inflation. To the contrary, the inflation rate will be the lowest among the three scenarios due to the least active production. (Probability = 20%.)

In line with these assumptions, the growth rate for each sector and demand item was set for each of the three periods, and the headline GDP growth numbers have been estimated as follows.

Table 10.1 Real GDP Growth Rate Under Different Scenarios (Summary)

	Main Scenario	Upside Scenario	Downside Scenario
Headline GDP Growth			
2012 - 17	3.9%	5.9%	2.8%
2018 - 22	5.6%	6.6%	2.7%
2023 - 27	5.1%	6.3%	2.7%
2012 - 27	4.8%	6.3%	2.8%
GDP Growth by Sector (2012-27)			
Primary	6.2%	7.0%	4.2%
Secondary	6.2%	7.8%	3.7%
Tertiary	3.9%	5.5%	2.2%
GDP Growth by Expenditure (2012-27)			
Private Consumption	4.3%	4.7%	2.8%
Government Consumption	1.1%	1.9%	-0.7%
Change in Stock	2.6%	2.9%	-1.3%
GFCF	1.1%	3.2%	-1.0%
Export	6.1%	8.4%	2.7%
Import	1.7%	1.5%	-0.6%

Source: JICA Study Team

Under scenarios #1 and #2, the export sector led by agriculture and manufacturing more or less start contributing as growth drivers, especially after the completion of the Nacala Corridor, which is reflected on the highest growth rate in 2018-22. They also incorporate the potential contribution of the mining sector, assuming a price recovery for uranium. Domestically-oriented sectors, such as retail/wholesale trade, construction, real estate, ICT and finance, are most likely to benefit after the export sector accelerates.

Under the scenario #3, on the other hand, the growth in the agriculture and manufacturing sectors will decelerate, losing some part of demand against the neighboring countries due to the delay in facilitating the relevant infrastructure, including the Nacala Corridor. If the damage to domestic demand is not proportionate to the decline in external demand, the external balance of Malawi may be further deteriorated, putting downward pressure on the Kwacha and adding inflationary pressure, which may eventually put the Malawian economy into a vicious downward spiral.

As mentioned above, Malawi is likely to enjoy a part of the benefit from the corridor facilitation under the most probable case. The key to realizing a greater part of such benefit is how to utilize the expanded transport capacity. To that end, the strategy of jumping into the regional supply chain with a view to stepping up the ladder of the value chain, should be critical for the survival of Malawi in the region.

(2) Growth Scenarios of Potential Industries

(i) Agriculture

The growth scenario of agriculture needs to be considered according to whether the products are for staple food (maize, cassava, potato, rice, wheat, and so on) or not. In the case of staple food products, their production is expected to increase to ensure food security, although the population growth rate will decline. As the demand for staple food crops in the neighboring countries is high for the same reason, it is expected that export of such agricultural products from Malawi will increase with its own food security achieved.

In the case of non-staple food products, an increase in supply as materials for edible oil, agro-processing, and other manufacturing is envisaged, against the backdrop of increase of demand arising from economic growth. This scenario may include an attempt “to create food processing industry in collaboration with the SME clusters to be established in the SEZ near Blantyre”, based on the growth strategy seeking the “regional solution” indicated in the chapter 4.

(ii) Manufacturing and Service

Manufacturing sub-sectors, which are expected to have synergetic effects with agriculture, such as food processing and plastic packaging, will likely contribute to the economic growth of Malawi to some extent, although probably to a lesser degree than agriculture itself. At the same time, an attempt to “export consumer goods, service and labor to expected growth pole in Tete Province” based on the strategy seeking a “regional solution” will encourage the growth of those sub-sectors. However, difficulties in financing due to high interest rates and institutional obstacles will impede the growth of the manufacturing sector in general.

The ICT industry will grow with the increase in the number of mobile phone users, and contribute to the development of agriculture and agro-processing. Financing will expand its outreach to the rural areas with

mobile banking. Nevertheless, it is difficult to expect drastic improvements in the functioning of industrial financing. The question of whether financial institutions can expand financing channels to complement commercial banks may be more critical for the growth of the financial sector.

As for the logistics (transportation and storage) industry, there is a high possibility that it will achieving efficient distribution networks utilizing the railway development by Vale. In addition, import of high valued cargo through the Nacala Corridor (road and railway) will require the development of inventory-oriented facilities which combine the functions of railway transportation and inventory management as an integrated package. This will be an opportunity for the logistics industry to grow and enlarge its services from traditional transportation to inventory management.