

FINAL REPORT

**VOL. 2**

DEVELOPMENT GUIDELINES AND MASTER PLAN

# THE DEVELOPMENT STUDY OF GHANA SEA PORTS IN THE REPUBLIC OF GHANA

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The Overseas Coastal Area Development Institute of Japan (OCDI)  
NIPPON KOEI CO.,LTD.

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## **List of Abbreviations**

AEC	Assumed Environmental Criteria
ASEAN	Association of Southeast Asian Nations
B/L	Bill of Lading
BOD	Biochemical Oxygen Demand
BOR	Berth Occupancy Ratio
BOT	Built-Operate-Transfer
BRV	Bulk Road Vehicles
BU	Bulk Carrier
C.D	Chart Datum
CEPS	the Customs Exercise and Preventive Service
CFS	Container Freight Station
CIF	Cost, Insurance and Freight
CM	Container/Multipurpose Carrier
CO	Container Cellular Vessel
COD	Chemical Oxygen Demand
CRMS	Computerized Risk Management System
CT	Container Terminal
CY	Container Yard
DO	Dissolved Oxygen
DO	Delivery Order
DR	Dock Receipt
DWT	Dead Weight Tonnage
EDI	Electric Data Interchange
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPZ	Export Processing Zone
FEU	Forty-foot Equivalent Unit
FOB	Free On Board
GAFCO	Ghana Agro-Food Company
GBC	Ghana Bauxite Company
GC	General Cargo Carrier
GDP	Gross Domestic Product
GEPC	Ghana Export Promotion Council
GFZB	Ghana Free Zones Board
GHATIG	Ghana Trade and Investment Gateway Project
GPHA	Ghana Ports and Harbours Authority
GRC	Ghana Railway Corporation
GT(GRT)	Gross Tonnage
H1/3	Significant Wave Height
HWL	High Water Level
IALA	International Association of Lighthouse Authority
IAPH	International Association of Ports and Harbors
JICA	Japan International Cooperation Agency



KIA	Kotoka International Airport
KN	Kilo Newton (=0.102 tf)
L0	Wave Length
LOA	Length Overall
LWL	Low Water Level
MHWN	Mean High Water Neap
MHWS	Mean High Water Spring
MLWN	Mean Low Water Neap
MLWS	Mean Low Water Spring
MOF	Ministry of Finance
MOFA	Ministry of Food and Agriculture
MOL	Mitsui O.S.K Line
MORT	Ministry of Road and Transport
MPa	Mega Pascal (=N/mm <sup>2</sup> )
MR	Mate's Receipt
NCA	National Communication's Authority
NCP	New Container Platform ( at Takoradi Port)
NEAP	National Environmental Action Plan
OCDI	Overseas Coastal Area Development Institute of Japan
OECD	Organization for Economic Co-operation and Development
OECE	The Overseas Economic Cooperation Fund
PIANC	International Navigation Association
RO	Ro-Ro Vessel
Ro/Ro	Roll on / Roll off
RTG	Rubber Tyre mounted Gantry crane (= Transfer crane)
S.F.	Safety Factor
SAPS	Special Assistance for Project Sustainability
SO	Shipping Order
SS	Suspended Solids
T1/3	Significant Wave Period
TDC	Tema Development Cooperation
TEU	Twenty-foot Equivalent Unit
TFCC	Tema Food Complex
TG	Tugboat
TK	Tanker
TMA	Tema Municipal Assembly
TOR	Tema Oil Refinery
UNCTAD	United Nations Conference on Trade and Development
VALCO	Volta Aluminium Company Limited
VLTC	Volta Lake Transport Company
VRA	Volta River Authority
WAG	West Africa Gas
WTO	World Trade Organization

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## PART II DEVELOPMENT GUIDELINES



## **Chapter 9 Development Potential in Ghana**

### **9.1 Development Policy in Ghana**

#### **9.1.1 Ghana Vision 2020**

##### **(1) Introduction**

The long-term vision for Ghana is to become a middle-income country by the year 2020. The National Development Policy Framework (NDPF) - Volume 1: Long Term Development Objectives – articulates the long-term, 25-year (1996-2020) perspective for Ghana's socio-economic development and represent GHANA – VISION 2020.

The basic objectives of the development agenda in Ghana are to reduce poverty, increase employment opportunity and average incomes, and reduce inequities in order to improve the general welfare and the material well-being of all Ghanaians. The achievement of these long-term goals will lead to Ghana's long-term vision of attaining by year 2020 the status and standard of living of a middle-income country, which applies science and technology in increasing labor and natural resources productivity and efficiency in all types of production in order to be competitive in local and export markets.

The long-term development objectives have been formulated in accordance with the five basic themes of development. These development themes are:

- (a) Human Development
- (b) Economic Growth
- (c) Rural Development
- (d) Urban Development
- (e) An Enabling Environment

##### **(a) Human Development**

The basic goals of human development are to improve the health, life expectancy and capabilities of all individuals, to eliminate extremes of deprivation, reduce poverty and ensure an equitable distribution of the benefits of development.

###### **Population**

- Reduce the rate of population growth and the average size of families. The long-term target is to bring down the rate of natural increase from 3 % pa to 2 % pa by 2020.

##### **(b) Economic Growth**

The basic goal is to establish an open and liberal market economy that optimizes the rate of economic development and ensures the maximum welfare and material well-being of all Ghanaians.

###### **Enabling Environment**

Government's role with respect to economic growth is to provide an enabling environment in which the private sector will be able to achieve the desired objectives.

#### National Income

- Transform Ghana from a low-income to a middle-income country within one generation.
- Ensure that the benefits of development are distributed fairly and equitably among all Ghanaians and that hard-core poverty is eliminated.
- Raise average incomes per head by more than fourfold from the present level – i.e. from 241,000 cedis pa or US\$377 in 1993 to 1,115,000 cedis or over US\$1,700 by 2020 (at 1993 prices).
- Achieve an average annual rate of economic growth of over 8 % from 1995 to 2020.

#### Production

The overall development goal for production of goods and services is to support the economic growth objectives by achieving increased productivity in all types of production and an expansion in the range of goods and services produced, at internationally competitive prices. For production activities to be sustainable and to contribute to improving the quality life, production must be undertaken within the realm of science and technology and in ways which do not cause pollution or other forms of environmental degradation.

- Agriculture: achieve an average overall growth rate in agricultural production of 4 % per annum as a means of enhancing rural development and supporting economic growth objectives.
- Industry: increase industry's share of GDP to 37 % from its current share of 16 %, with an average annual growth rate in output of over 12 %.

#### Economic Infrastructure

The economic infrastructure consists of all forms of energy, all modes of transport, all types of communications and meteorological services. It is an important part of the enabling environment and the main development goal is the establishment of an efficient and integrated infrastructure system which is responsible to the current needs and anticipate the future requirements of the productive sectors of the economy.

- Establish an efficient and modally complementary and integrated transport network for the movement of people and goods at least cost.
- Make Ghana a shipping gateway to West Africa.

#### (c) Rural Development

Over two-thirds of Ghana's population live in settlements of less than 5,000 inhabitants, which are defined as rural. Conditions of life in rural areas are significantly below those in urban areas and 80 % of people classified as poor are rural dwellers. The basic goal of improving the quality of life for all Ghanaians dictates that a special effort must be made in the field of rural development.

#### (d) Urban Development

The urban population in Ghana will have risen from an estimated 5.3 million in 1993 to 15 million or nearly half the total population by 2020. The basic objective is not to try to halt urbanization but

to ensure that it proceeds along lines which make a positive contribution to development and is equitably distributed between settlements of varying sizes.

(e) An Enabling Environment

The objective is to create an environment in which all sections of society can contribute to a sustained and accelerated rate of economic and social development over the long haul.

### **9.1.2 Ghana Trade and Investment Gateway Project (GHATIG)**

The Trade and Investment Gateway Programme is one of the programmes envisaged under Ghana Vision 2020. The Gateway Programme seeks to make Ghana the trade and investment gateway to West Africa and increase the participation of the private sector in the development of the national economy.

The project will attempt to attract a critical mass of export-oriented investors into Ghana by encouraging the private development of Free Zones enclaves in Tema, and by improving the infrastructure facilities of the ports as well as the institutional framework of Ghana Harbor and Ports Authority, the Ghana Immigration Service, Ghana Civil Aviation Authority, Customs, Excise and Preventive Service and Ghana Investment Promotion Center. The enactment of the Investment Promotion Centre Act of 1994 and the Free Zone Act of 1995 were the first initiatives implemented under the strategy. The Acts provide incentives to enterprises, especially those established in the free zones, and detail of the rules and regulations governing private sector participation in the development of the zones. Another major element of this strategy was the purchase by the Government of sites in Tema, Takoradi and Kumasi which have been reserved for private development as free zones. The government has, as an initial step, provided the off-site infrastructure facilities to the free zone in Tema.

## **9.2 Future Trends in Major Sector Development**

### **9.2.1 Agricultural Sector**

This section is derived largely from the “Accelerated Agricultural Growth and Development Strategy (AAGDS) in Support of Ghana’s Vision 2020, Feb. 2000” by the Ministry of Food and Agriculture.

#### **(1) Vision 2020**

Under Vision 2020, the agricultural sector was targeted to grow at an annual rate of 4%. The sector was also expected to ensure food security and adequate nutrition for all Ghanaians; to supply raw materials and other inputs to other sectors of the economy at efficient prices; to contribute to an improvement in balance of payments; and to provide producers with farm incomes comparable to earnings outside agriculture.

Consistent with the critical role agriculture has to play in bringing about overall economic growth and its consequent impact on poverty reduction, the Accelerated Agricultural Growth and Development Strategy (AAGDS) was formulated by the Ministry of Food and Agriculture (MOFA).

This strategy proposes a higher agricultural growth in order to achieve Vision 2020's targets. This strategy is designed to increase the sector's average annual growth rate from the 4 percent envisaged under Vision 2020 to about 6 percent over the period 2001 – 2010 in order to achieve rapid, sustainable and equitable growth. The strategy covers all agriculture including crops, livestock, fisheries, forestry and cocoa. It is consistent with two basic orientations of government: reliance on the private sector to lead investment and economic growth and, devolution of significant responsibilities from central government to District Assemblies.

## (2) Accelerated Agricultural Growth and Development Strategy (AAGDS)

The overall goal of AAGDS is to provide a framework within which agricultural development policies and programmes in support of Vision 2020 can be designed and implemented.

The policies and programmes designed to achieve the objective of the accelerated growth and development strategy are based on five major elements:

- (a) Promotion of selected products through improved access to markets
- (b) Development and improved access to technology for sustainable natural resource management
- (c) Improved access to agricultural financial services
- (d) Improved rural infrastructure
- (e) Enhanced human resource and institutional capacity.

### (a) Promotion of selected products through improved access to markets

The promotion of carefully selected agricultural commodities based on improved access to markets is to be tackled through programmes to improve the capacity to understand and adhere to export procedures and import regulations of importing countries. Since 1983, Ghana has introduced far-reaching pro-trade reforms establishing market access to foreign exchange and reviewing many tariff and non-tariff barriers. These reforms will be intensified and cross-border and other regional trade facilitated. Private access to markets will therefore be improved through regional negotiations, adjustments in regulatory processes, and selected taxes.

### (b) Development and improved access to technology for sustainable natural resource management

Appropriate technology generation, transfer and dissemination by the private and public sectors will be improved at all levels, while ensuring the sustainable use and management of the nation's natural resources. These include technology in soil and water conservation, tools and machinery and irrigation. The transfer and adaptation of foreign technology to suit local needs and integration to regional and world technology flows will be promoted.

### (c) Improved access to agricultural financial services

Access to credit will be improved to encourage the use of recommended inputs, storage, and processing required to support technological transformation of the agricultural sector on a suitable basis by the majority of farmers and agricultural operators. The development and use of innovative approaches to lending will also be intensified. These approaches including group lending, inventory credit and nucleus-outgrower schemes are aimed at reducing the cost of servicing credit and minimize the risk of default. Other necessary activities will include the development of

innovative approaches to deposit mobilization and creation of an incentive framework for lending to agriculture. Approaches such as special tax relief and lower minimum reserve ratio requirement for banks lending to agriculture will be pursued.

(d) Improved rural infrastructure

Greater investment in rural infrastructure and for empowering rural people to maintain such facilities will be pursued under the strategy. Poor transport and storage facilities raise farm level costs of inputs such as fertilizer and reduce farm level price for outputs. Similarly, poor power, and communications inhibit development of agro-processing industries, limiting farm sales. Failure of roads, ports, water, storage facilities, electricity, and other supporting infrastructure to expand capacity at 8 – 10 percent per year is a primary factor limiting attainment of rapid agricultural growth.

Agro-processing will be promoted to benefit from the Free Zone Act which seeks to promote Ghana as a Gateway to West Africa through the provision of incentive to manufacturers to process local and imported raw materials for export.

(e) Enhanced human resource and institutional capacity

Well-trained and competent manpower and strong institutions are required for implementing the strategy. The capacity of human resources and institutions within the sector will be enhanced to enable government to play its role of providing the enabling environment within which producers and processors can perform efficiently.

Details of the programmes to achieve these objectives are to be found in the Agricultural Services Sub-sector Investment Programme (AGSSIP) which cover three of five elements of the strategy, namely: Promotion of selected production through improved access to markets; development and improved access to technology for sustainable natural resources management; and Enhanced human resource and institutional capacity. The other elements of the strategy are being implemented under the Rural Financial Sector Project and the Village Infrastructure Project respectively.

## 9.2.2 Industrial Sector

Four years after the commencement of the Vision 2020 programme, the manufacturing sector, which is the leading sub-sector of the industrial sector, is yet to hit the targeted growth rate. For the economic growth of Ghana, the development of export-oriented industry and expansion of export market are indispensable due to the limited domestic market. The long-term objectives for industrial sector within the framework of the Vision 2020 are summarized below:

- Make Ghanaian manufactured products internationally competitive.
- Establish effective linkages between manufacturing, agriculture, education and services.
- Expand the range of manufactured goods to meet domestic demand and diversify exports.
- Ensure that all industrial operations are environmentally friendly.
- Secure increased domestic and foreign private investment in mining and expanded and diversified production of mineral products.
- Establish effective linkages between mining and quarry, manufacturing and construction.

- Establish an efficient and internationally competitive domestic construction industry.
- Maximize the use of local raw materials in the construction industry.

Based on the long-term objectives, the medium-objectives seek to improve the overall industrial performance and overcome the constraints such as heavy dependence on imported inputs. This suggests the provision of adequate and appropriate infrastructure to attract direct private investment from both domestic and foreign sources to increase the contribution of the private sector to national output.

In order to achieve the above objectives, the following organizations are playing an important role.

#### (1) Ghana Export Promotion Council (GEPC)

The Ghana Export Promotion Council is the national focal point institution for export development and promotion, working under the aegis of the Ministry of Trade and Industry, and an authority on the export of products in the non-traditional sector.

The council has a challenging plan, which is to increase the value of the non-traditional exports from US\$404 million in 1999 to US\$12 billion in 2020. Its strategies are summarized as follows.

- Promote exports of high valued commodities such as cashew nuts, fruits, vegetables and fish products.
- Manufacture food processing machines and export them to African countries.
- Manufacture handicrafts and sell them to blacks in USA, who have cultural basis similar to Ghanaians.
- Promote foreign investment, especially from Malaysia and Indonesia, which are presently seeking places for investment.

#### (2) Ghana Free Zones Board (GFZB)

The Ghana Free Zones Board has the main objective of promoting economic development through the attraction of foreign direct investment; creation of employment opportunities; increasing foreign exchange earnings; provision of business opportunities for foreign and local investors to undertake joint-ventures; enhancement of technical and managerial skills/expertise of Ghanaians; transfer of technology; and, diversification of exports.

The Ghana Free Zone Programme, which commenced in 1996, introduces the concept of free ports, and combines both the enclave and single-factory enterprise scheme which is designed to promote processing and manufacturing of goods through the establishment of Export Processing Zones (EPZs), and encourage the development of commercial and service activities at sea-port and air-port area. In addition, the Programme plans to promote Ghana as the trade and investment gateway to the West African sub-region for processing, manufacturing, assembling and storage, transshipment and distribution of goods to the countries of the sub-region.

The companies registered to operate as free zone enterprises was 66 by the end of 1999. Thirty-three companies provided actual quantitative production figures of their operations and the ex-factory value of actual production of the operational free zone enterprises amounted to US\$167,157,032 in 1999, with an increase of about 6% on the 1998 actual production level. And

also a increase in the actual ex-factory export value of the free zone enterprises was recorded in 1999, which amounted to US\$184,081,144 compared to US\$145,371,542 for 1998. The high increase in the total value of export was also due to the high level of re-export activities of the commercial free zone enterprises. In addition, the year 1999 recorded a spectacular increase in the direct employment of persons into the free zones to 5,523 (from 3,968 in 1998).

Location of enclaves and single-factory enterprises, which have been registered in free zone projects, is shown in Table 9.2.1.

Table 9.2.1 Location of enclave and single-factory enterprises  
(Number)

	Single-factory	Enclave
Greater Accra Region	48	1
Eastern Region	3	-
Volta Region	1	-
Western Region	11	-
Ashanti Region	1	-
Brong-Ahafo Region	1	-
Total	65	1

Source: Ghana Free Zones Board

According to the above, about 80% of enclaves and single-factory enterprises are located at the eastern part of Ghana, especially in the Greater Accra Region, where Tema Port is located. The Ghana Free Zones Board plans to develop export-oriented industries in Tema by increasing single-factories from 15 nos at present to 25 nos in 2001.

(a) Tema Export Processing Zone

Tema EPZ is the main element of “Ghana Trade and Investment Gateway Project (GHATIG)”, and the objective of the Project is to attract a critical mass of export-oriented investors to Ghana to accelerate export-led growth as well as facilitate trade.

The investment component of the Project facilitates the development of a privately-financed and owned EPZ with on-site infrastructure undertaken by private operators. One thousand and two hundred acres of land near Tema has been allotted by the government for development as the first EPZ in Ghana. The expected industries to be registered are as follows.

- Food processing (vegetables, fruits, fish confectioneries, spices etc)
- Chemicals production including ceramics
- Wood working industries, textile industries etc
- Light industries (garment manufacture, electronic equipment assembly, shoes, toys etc)

And the Malaysia based Business Focus Group leased land of 681 acres and plans to establish electronic factories. Some of the factories are scheduled to commence operations in March, 2001.

The Project is expected to generate the following benefits.

- Employment Generation; Based on the information provided by the Foreign Direct Investment Demand Study of March 1998, about 10,500 jobs will be created from 36 firms within 3 years and in 15 years it is estimated that more than 53,900 jobs will be created in EPZ. A secondary effect is expected in employment creation which will create additional jobs from activities from the peripheral of the EPZ. Within 3 years, 3,210 additional jobs will be created and by year 15 a total of 16,200 will be created.
- Foreign Exchange Earning; Value added of exports directly contributes to the foreign exchange earnings.
- Technology Transfer; EPZ normally involves labor-intensive production and promotes technology in the host country. This is expected to increase productivity and efficiency in domestic firms which would have otherwise not have improved without the influence of the EPZ.

#### (b) Sekondi Export Processing Zones

Demarcation and layout of the Sekondi EPZ were completed with a land of 2,240 acres and the issue of compensation undertaken by Land Valuation Board has been waited. Meanwhile, the major developer, Petrochemical Refinery and Marketing Ltd., applied for 512 acres of land. Petrochemical Refinery and Marketing Ltd., which is jointly owned by Sam Antonio Ghana, Pan-African Holdings and Regent Oil Incorporate, has planned to invest US\$2.7 billion for the oil refinery project. The company expects commencement of operations will be in 2004 and the capacity of the refinery be 250,000 barrels per day. The products will be exported to the market in West Africa.

#### (c) Fumesua Inland Free Zone

The time table and conceptual plan for the development of the land of 240 acres have been approved by GFZB and permission has been granted to Ghana Shipper's Council, which is a developer of the Free Zone, to undertake the preparation work on site. The on-site infrastructure is scheduled to be completed in 2001 and the council expects commencement of operations in 2003.

The main goal of the Inland Port is to add value to import and export commodities by promoting high throughput and transshipment of cargo at minimum cost between the coast and the northern area of the country. And also, as a Free Port with complementary Export Free Processing Zone (EFPZ), which has exemption of customs duty for imports and exports, the Inland Port is expected to have a great role to play in promoting export oriented industries which will enhance international balance of trade.

The main objective of establishing an Inland Port is to decrease transit time in the ports and to decongest ports especially during seasonal peak periods. The establishment on an Inland Port in the vicinity of Kumasi will promote international trade with its neighbors to the north such as Burkina Faso and Mari. Ghana will have the closest port to those countries with an inland port situated at Kumasi.

The Inland Port is expected to reduce costs incurred by the national economy in several ways;



- Port congestion will be reduced as well as frustrating and costly delays at Tema and Takoradi.
- Lower container demurrage costs.
- Less inconvenience and travel costs for northern sector traders and producers, who undertake several trips to the two sea ports to clear their goods.
- Lower port terminal container rent charges and faster turnaround time for containers on hire to shippers.
- Less seasonal imbalance in return payload for hauliers engaged in shipping cargoes between the port areas and hinterland.

The EPZ is important as a breakthrough project through which Ghana's investment environment and absorbing capacity can be introduced to the world. It shall be a leader project for the industrial sector which should play a key role in the pursuit of the economic growth targeted by Vision 2020.

### **9.2.3 Services Sector**

#### **(1) Transport**

Overall goal of the transport sector is to establish an integrated transport system for movement of goods and people at least cost, and to make Ghana easily accessible from outside.

##### **(a) Railway Transportation**

The main goal is to develop railway to provide a much safer and cheaper option for bulk haulage of goods for export and local distribution and support the development of mass transit systems in main cities.

Major objectives and strategies to realize this goal are as follows.

- More than 60% of the bulk haulage of liquid and solid cargo between the ports and central Ghana using railway, by rehabilitating railway network to improve speed and axle-load capacity, modernizing rolling stock, privatizing the Ghana Railway Corporation (GRC) through concession, building capacity for containerized traffic and petroleum products, and building capacity to serve Fumesua Inland Port
- More than 600 million passenger-kilometers to be made in a year, by modernizing coaching stock, introducing new and innovative passenger services, improving reliability records, reducing derailment, and rehabilitating and modernizing stations
- Mass transit facilities to be provided for Accra and Kumasi, by reconstructing link between Accra and Tema into a double track, constructing Nsawam-Accra, Ejisu-Kumasi and Kaase-Kumasi link as a double track, introducing special services between Obuasi and Kumasi, and introducing special commuter services in Accra and Kumasi
- High traffic safety standards and records to be maintained
- Efficiency in railway operations to be improved

##### **(b) Road Transport**

The development goal for road transport sub-sector is to provide a reliable road infrastructure

network so as to ensure the availability of safe, reliable, efficient and effective transport services to meet the demand for socio-economic development.

Major objectives and strategies to realize this goal are as follows.

- Condition of Trans-Ecowas routes linking Ghana to all her neighbors to be improved to asphalt surface, by seeking private equity funding (BOT) and collecting tolls on the road for investment
- Decent and reliable bus services from Accra and/or Kumasi available to the national capitals of neighboring countries, by providing support to the State Transport Company (STC) and other potential players
- All regional capitals to be linked with asphalt road, by BOT and collecting tolls for investment
- Percentage of paved roads that are in good condition to be increased from 25% to 60% for trunk roads and from 55% to 80% for urban roads, by seeking donor support and ensuring effective use of Road Fund
- Pedestrian-vehicular traffic conflict effectively to be reduced
- Road construction in urban areas to be coordinated with other utility services
- All district capitals to be linked to agricultural service centers and important marketing centers in the district using all-weather access roads, by coordinating agricultural development and feeder road development programmes, making funds available from the Road Fund, and encouraging district assemblies to invest in road maintenance
- Traffic congestion in cities and major urban centers to be reduced by 50%
- All major transport modes to be linked with good roads, by improving road conditions to link other transport modes and improving terminal facilities for change in modes
- Road traffic accidents to be reduced
- Road construction cost to be reduced
- National road condition mix to be improved to 70% good, 20% fair and 10% poor, by ensuring effective use of Road Fund, encouraging the participation of Metropolitan/Municipal/District assemblies in road maintenance management, seeking donor support and BOT

#### (c) Sea transport

The goal is to develop adequate port infrastructure and management capacity in order to respond effectively to the demands of Ghana's captive trade and to attract transit and transshipment traffic in the West African sub-region.

Major objectives and strategies to realize this goal are as follows.

- Capacities of Tema and Takoradi ports to be expanded, by developing and modernizing to accommodate bigger vessels, encouraging private sector participation in infrastructure development, seeking donor funding for port expansion, and ensuring proper maintenance of infrastructure and equipment
- Quickest turn-around time achieved for Tema and Takoradi ports, by improving efficiency of port operations, modernizing and increasing stock of cargo handling equipment, and increasing private sector participation in port operation
- Services and traffic through Tema and Takoradi ports to be increased, by operating and

managing the ports of Tema and Takoradi as Free Ports to support the Gateway Programme, opening shipping register to foreign ships, simplifying customs procedures to reduce delays in the clearance of cargo from the ports, and operating a flexible tariff systems in together with the strengthening of cost and management accounting systems

- Maritime safety and prevention of pollution to be ensured
- Port productivity to be enhanced, by increasing staff motivation, improving zoning of operations in the ports, establishing Strategic Business units to improve efficiency and effectiveness of port operations, and increasing availability and utilization of port plant and equipment
- Innovative port management practices to be adopted, by building management capacity, introducing modern management techniques, establishing a strong management information system, and pursuing restructuring of GPHA to assume the role of a landlord

#### (d) Volta Lake Transport

The main development goal is to integrate Volta Lake transport into the national transportation system to meet the demand for reliable, efficient and economical transportation of bulk cargo between the Port of Tema and the Northern Regions of Ghana and attract transit cargo to Burkina Faso and other landlocked West African countries.

Major objectives and strategies to realize this goal are as follows.

- Inter-modal link with Volta Lake transport to be enhanced, by improving conditions of roads leading to stopping stations, enhancing link with the Port of Tema, engaging petroleum pipeline from Tema to Akosombo, and undertaking feasibility study of linking Tema and Akosombo using rail.
- Navigational safety on the Volta Lake to be improved
- Port facilities and other facilities to be improved
- About 90% of bulk cargo movement within the Volta Lake Basin to be transported, by the Volta Lake transport modes
- Effective crossing of Volta Lake, by road transport mode to be provided through ferry services

#### (e) Air Transport

The main development goal is to provide world class air transport facilities to meet the socio-economic demands for safe and reliable domestic and international transport services in a competitive environment.

Major objectives and strategies to realize this goal are as follows.

- Kotoka International Airport (KIA) to be developed into a Hub/Gateway Airport in the West African Sub-region, by completing KIA Phase 2 rehabilitation, making fuel price comparable with other airports in the region, developing domestic air transport to provide feeder services for international flights, rehabilitating domestic airports, and encouraging private sector participation in airport management
- International Direct Flights to be provided to all continents
- Domestic flights to be available to all domestic airports, by encouraging private sector

participation in the development of domestic air services and promoting private sector participation in the development of domestic airport infrastructure

- High safety standards to be maintained
- KIA to be maintained as No.1 Cargo Airport in West Africa, by expanding facilities at cargo terminal, ensuring adequate integration with rail and road transport modes, and marketing KIA's facilities at the international market

## (2) Telecommunications

The main development goal is to provide demand-responsive services that are well integrated into the world system so as to promote good governance, improve standard of living in Ghana and to enhance productivity and competitiveness of Businesses in Ghana.

Major objectives and strategies to realize this goal are as follows.

- Access to telecommunication facilities to be increased, with tele-density increased from the present level of 0.9 lines per 100 persons to a minimum of 6 lines per 100 persons
- All public institutions and facilities, such as health facilities, educational institutions, local government establishment, Police Stations, Fire Services Stations, custom and border posts, libraries, major highways, energy and defense installations, maritime coastal radio stations, research establishments and agricultural stations, to be linked to telecommunications facilities irrespective of their geographical location in the country
- Quality of service to be improved with call completion rates increased from 82.2% to 95% for local calls, from 81% to 93% for national calls and from 93.4% to 97% for international calls
- Backlog of demand to be cleared entirely
- Advanced telecommunications technologies to be established to meet the demands of modern information and communications technologies

## (3) Tourism

The tourism sub-sector is very important for its contribution to the GDP and for the development of regional economy. The intensification of promotional activities by the Ghana Tourist Board over the past decade has made Ghana a more attractive tourist destination.

The National Tourism Development Plan for Ghana 1996-2000, which is the component plan of the Integrated Tourism Development Programme (ITDP), indicates the number of tourists increased from 286,000 to 1,062,000 in the fifteen years of 1995-2010 as shown in Table 9.2.2.

Table 9.2.2 International Tourist Market Target 1995-2010  
(In Persons)

	1995	2000	2005	2010
Business	139,000	177,000	237,000	302,000
Visiting friends/relatives	109,000	139,000	177,000	226,000
Holiday	38,000	83,000	224,000	534,000
Total	286,000	399,000	638,000	1,062,000

Source: National Tourism Development Plan for Ghana 1996-2000,  
Ministry of Tourism

The above Plan was initiated in 1996 to alert the private sector as well as government agencies dealing with the provision of infrastructure necessary for the tourism sub-sector and to identify opportunities and programme development that are necessary for the sub-sector.

According to the National Tourism Development Plan, a projection of economic impacts was expected as shown in Table 9.2.3.

Table 9.2.3 Economic Impact Indicators of Tourism in Ghana

	1994	1995	2000	2005	2010
1. GDP at 1993 Constant Prices					
(US\$ million)	6,368	6,737	9,827	14,442	21,221
2. Growth Rate (%)	3.9	5	8	8	8
3. Arrival ('000)	271	286	399	638	1,062
% Change	5.5	5.5	39.5	59.9	66.5
4. Net Foreign Exchange Receipts					
(US\$ million)	160	171	309	606	1,250
5. Net Contribution to GDP (%)	2.5	2.5	3.1	4.2	5.9
6. Employment Generation ('000)	56	59	90	161	307
7. Income Generation					
(US\$ million)	50	53	80	144	274

Source: National Tourism Development Plan for Ghana 1996-2000,  
Ministry of Tourism

### 9.3 Potential Cargo Volume Growth in Ghana based on the Southeast Asian Experience

As part of its long-term vision, Ghana is aiming to become a middle-income country by the year 2020. Here we consider potential cargo volume Growth in Ghana using a correlation analysis between economic indices and cargo volume with reference to countries that have experienced economic growth. Recently the southeast Asian region has developed rapidly. In particular, Malaysia, Indonesia, Philippines and Thailand, original members of ASEAN(Association of South East Asian Nations), have made remarkable progress.

The economies of these countries used to depend on the export of primary products. However the industrialization policy that these countries introduced in the 1960's eventually led to the influx of foreign capital in the 1980's. In this way economic growth has been realized.

ASEAN countries can serve as useful examples to in estimating the future cargo volume in Ghana.

#### 9.3.1 Relation between GDP and Container Cargo Volume

Table 9.3.1-9.3.5 show GDP, GDP/Capital and container cargo volume of Malaysia, Indonesia, Philippines, Thailand and Ghana. Figure 9.3.1-9.3.5 show the relation between GDP and container cargo volume in these countries. Although GDP in 1998 and 1999 was stagnant due to the Asian currency crisis, on the whole GDP and container cargo volumes have been increasing steadily. We can recognize from the correlation coefficients shown in Table 9.3.6 that container cargo volume has a deep connection with GDP. It logically follows that future container cargo volume in Ghana will increase along with GDP.

Table 9.3.1 GDP, GDP/Capital and container cargo volume of Malaysia

(Unit:GDP–millionUS\$, GDP/Capital–US\$, Container Cargo–TEU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GDP	56,499	61,892	67,392	74,060	80,882	88,832	97,718	104,874	97,147	102,784
GDP/Capital	3,104	3,317	3,523	3,777	4,023	4,310	4,625	4,840	4,380	4,526
Container Cargo	901.3	1093.6	1261.2	1443.6	1787.6	2112.9	2561.2	3019.7	3108.6	4085.2

Table 9.3.2 GDP, GDP/Capital and container cargo volume of Indonesia

(Unit:GDP–millionUS\$, GDP/Capital–US\$, Container Cargo–TEU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GDP	138,661	151,040	161,948	173,694	186,791	202,132	217,949	228,192	198,511	199,121
GDP/Capital	778	833	878	925	979	1,042	1,106	1,139	975	962
Container Cargo	923.7	1227.4	1488.5	1829.6	2249.5	2749.7	2935.5	3184.4	3151.4	4279.5

Table 9.3.3 GDP, GDP/Capital and container cargo volume of Philippines

(Unit:GDP–millionUS\$, GDP/Capital–US\$, Container Cargo–TEU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GDP	66,587	66,201	66,425	67,831	70,807	74,120	78,453	82,521	81,892	84,492
GDP/Capital	1,097	1,065	1,044	1,041	1,061	1,084	1,122	1,155	1,124	1,138
Container Cargo	1497.8	1591.6	1739	1904.6	2251.7	2525.6	2793.7	3028.9	2837.8	3273.4

Table 9.3.4 GDP, GDP/Capital and container cargo volume of Thailand

(Unit:GDP-millionUS\$, GDP/Capital-US\$, Container Cargo-TEU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GDP	111,338	120,867	130,637	141,589	154,265	167,996	177,954	174,960	157,167	163,701
GDP/Capital	2,003	2,141	2,284	2,450	2,647	2,866	3,017	2,947	2,629	2,717
Container Cargo	1078.3	1242.7	1437	1671.4	1930.5	2155.8	2276.3	2410	2865.5	3182.9

Table 9.3.5 GDP, GDP/Capital and container cargo volume of Ghana

(Unit:GDP-millionUS\$, GDP/Capital-US\$, Container Cargo-TEU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
GDP		5,512	5,726	6,011	6,209	6,457	6,754	7,038	7,369	7,693
GDP/Capital		360	363	371	373	378	386	392	401	410
Container Cargo		79.8	93.3	103.9	105.3	123.3	148.7	169.4	199.0	235.7

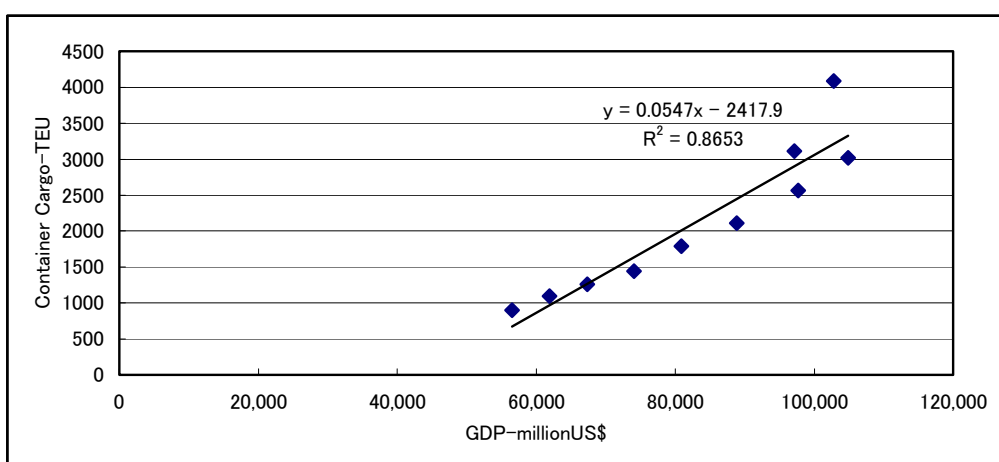


Figure 9.3.1 Relation between GDP and container cargo volume in Malaysia

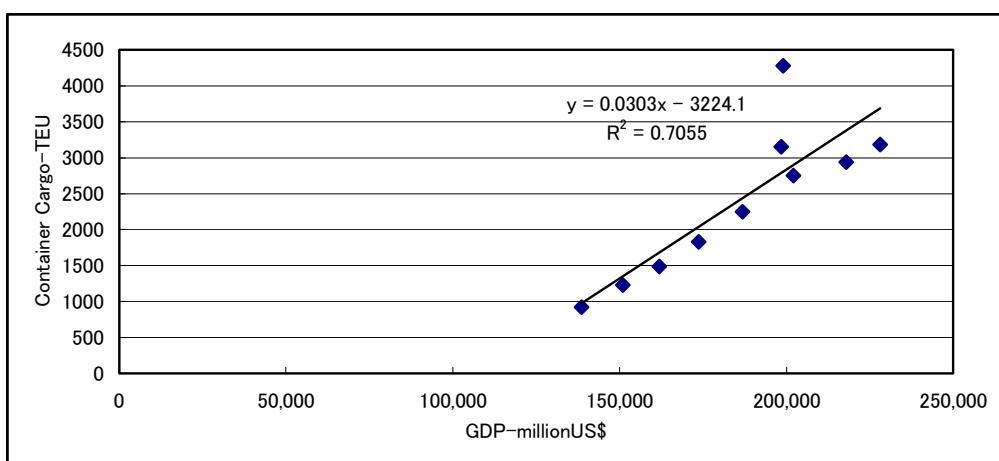


Figure 9.3.2 Relation between GDP and container cargo volume in Indonesia

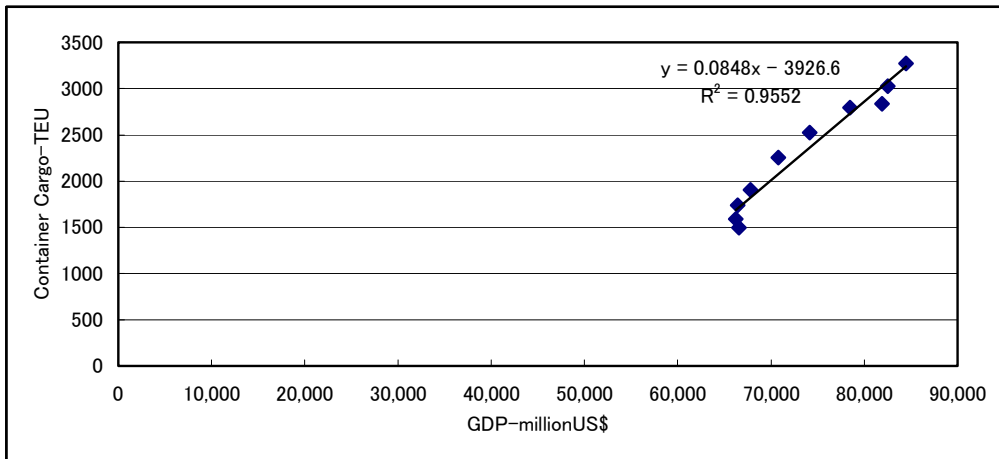


Figure 9.3.3 Relation between GDP and container cargo volume in Philippines

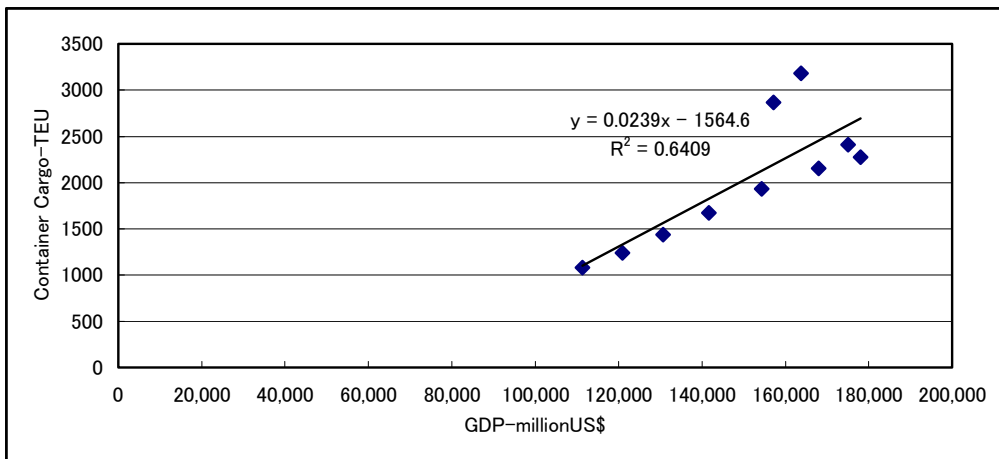


Figure 9.3.4 Relation between GDP and container cargo volume in Thailand

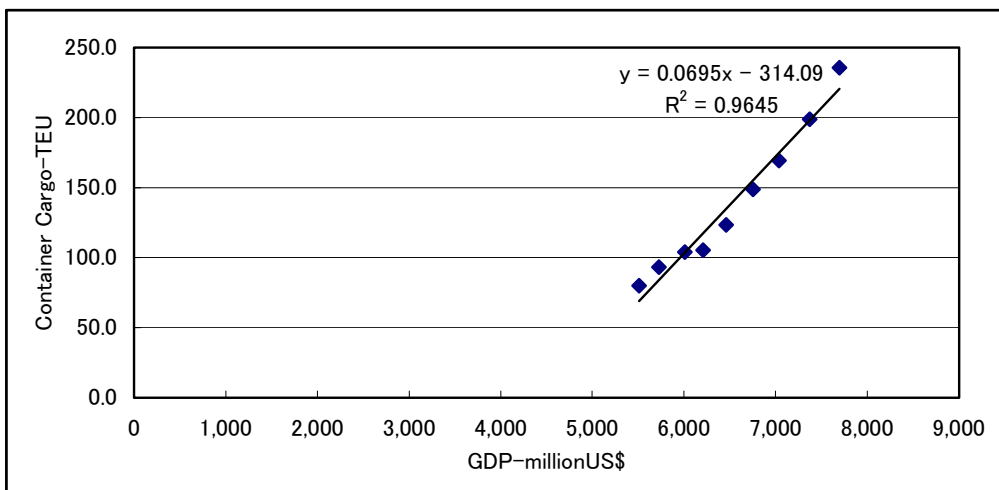


Figure 9.3.5 Relation between GDP and container cargo volume in Ghana



Table 9.3.6 Correlation Coefficients between GDP and container cargo volume

Country	Correlation Coefficients
Malaysia	0.930
Indonesia	0.840
Philippines	0.977
Thailand	0.801
Ghana	0.982

### 9.3.2 Change of Industrial Structure

In the background of the ASEAN countries rapid economic growth a significant change in the industrial structure can be seen. Generally speaking, when industry and services gain ascendancy over the export of primary products, ports will experience a great increase in cargo handling volumes. This is because they will begin to import materials and export goods of local industry.

Figure 9.3.6-9.3.10 shows value added and share of agriculture, industry and services respectively of ASEAN countries. It can be seen that growth of industrial and service sectors is remarkable while the share of the agricultural sector decreased. In Malaysia, for example, the value of the industrial sector increased 8.6 times from 1970-99 and that of the service sector increased 8.9 times during the same period, on the other hand, the value of agricultural sector increased 2.3 times. Moreover the share of the service sector surged from 34.9% to 45.7%, and that of the industrial sector from 31.2% to 42.4%. Meanwhile, the share of the agricultural sector fell sharply from 33.9% to 11.9%.

In Ghana, however, agricultural sector forms about 40% of total industry in Ghana. That is, the economy of Ghana depends on the export of primary products.

Economies which depend on the export of primary products find it difficult to increase cargo flows and are less likely to sustain stable growth since they tend to be susceptible to influences from the world market.

Accordingly, the cargo handling volume in Ghana can be expected to increase when industry and services become the predominant sectors of the economy.

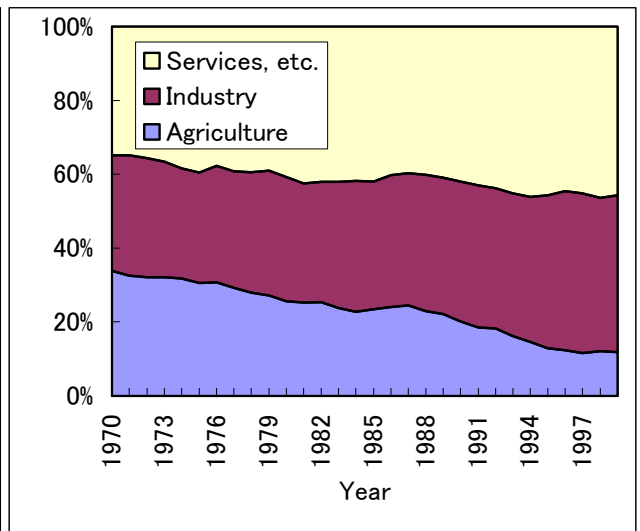
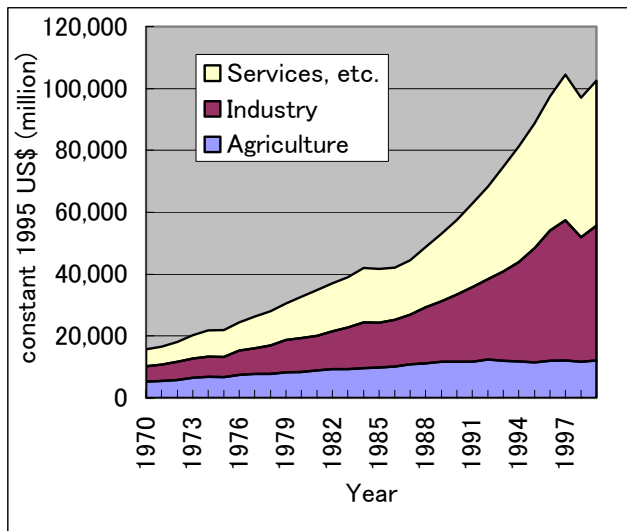


Figure 9.3.6 Value added and share of industrial sectors in Malaysia

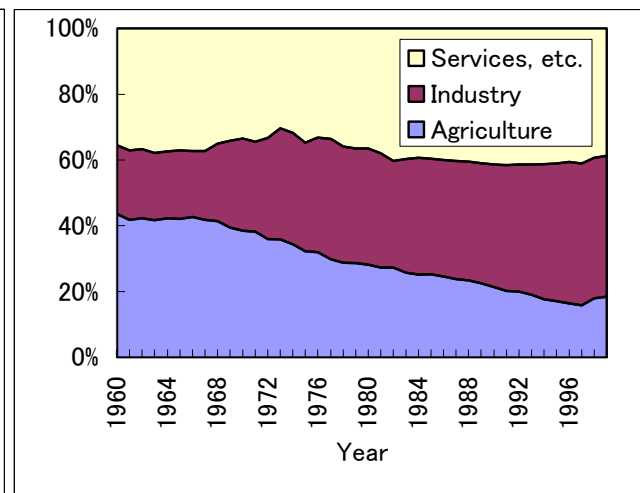
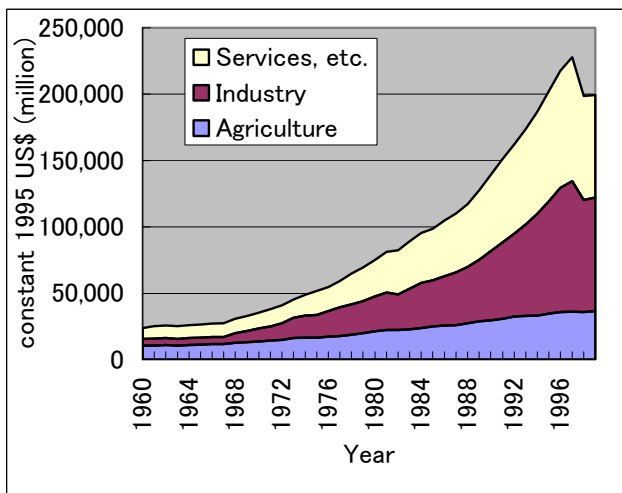


Figure 9.3.7 Value added and share of industrial sectors in Indonesia

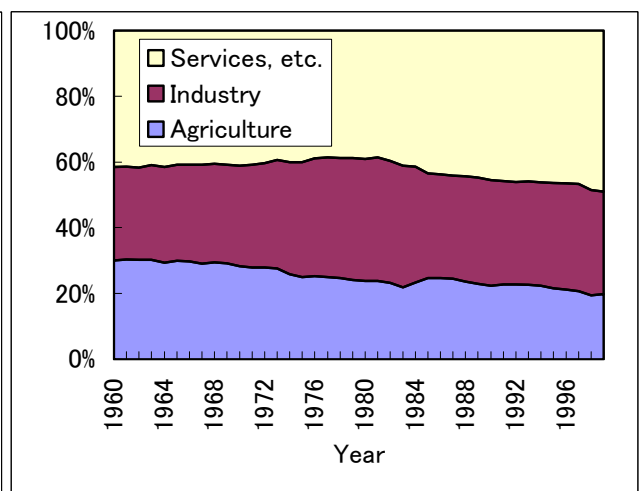
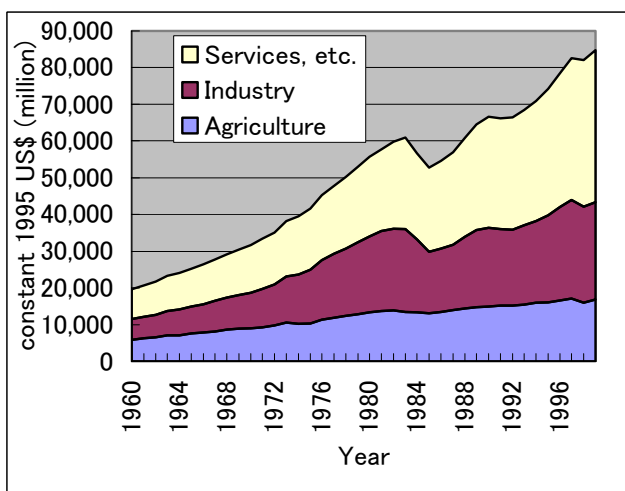


Figure 9.3.8 Value added and share of industrial sectors in Philippines

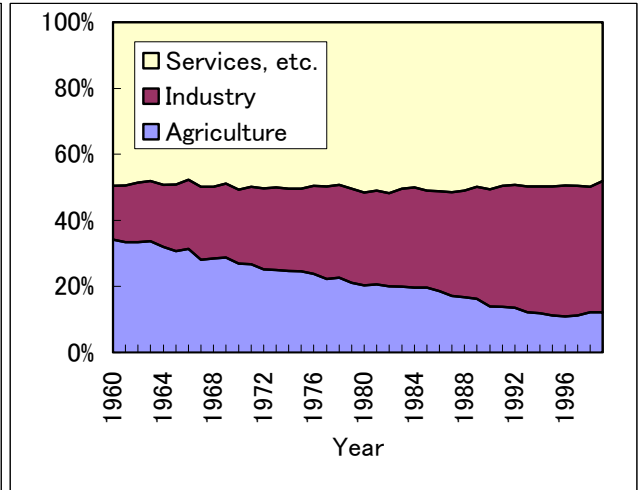
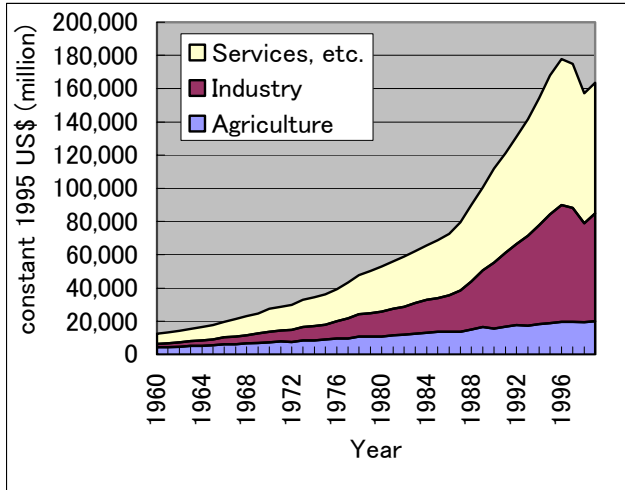


Figure 9.3.9 Value added and share of industrial sectors in Thailand

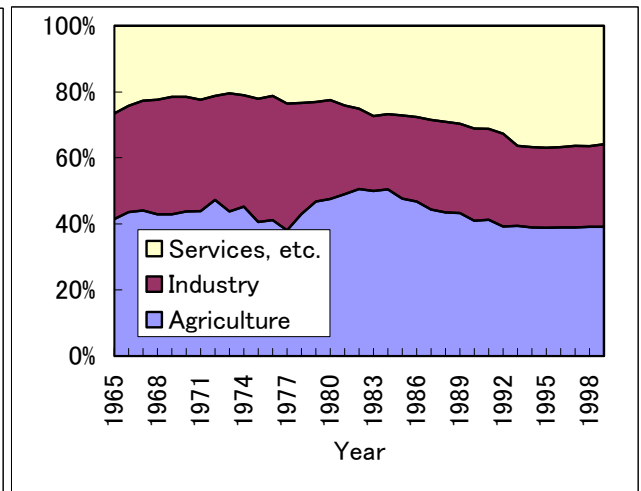
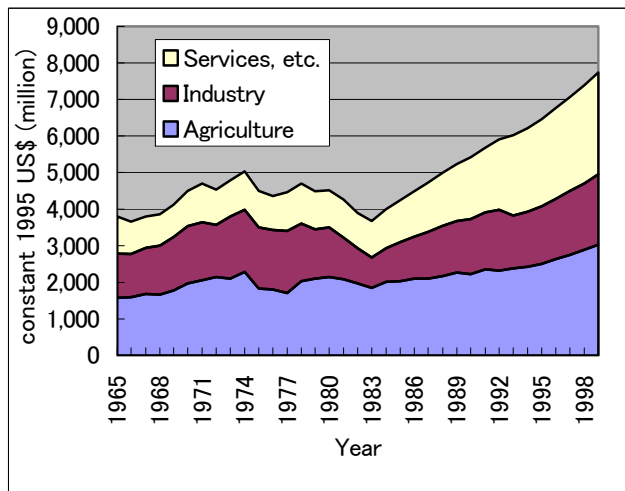


Figure 9.3.10 Value added and share of industrial sectors in Ghana