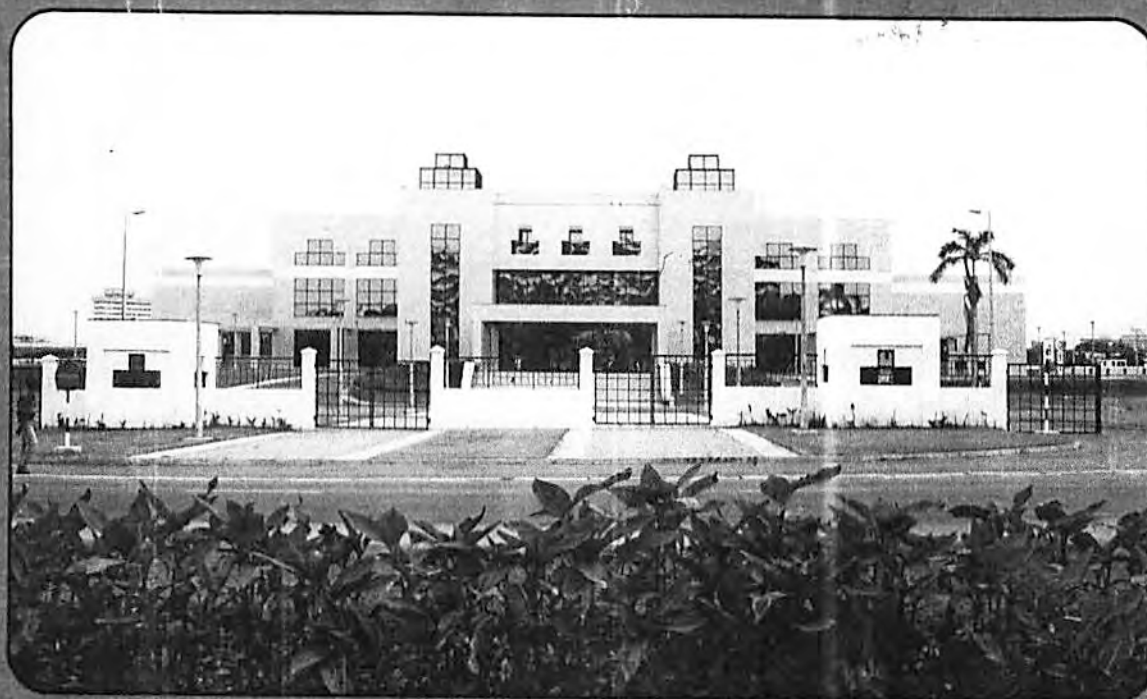


MINISTRY OF LOCAL GOVERNMENT  
DEPARTMENT OF TOWN AND COUNTRY PLANNING



# **STRATEGIC PLAN FOR THE GREATER ACCRA METROPOLITAN AREA**

## **VOLUME 3 FIVE YEAR DEVELOPMENT PLAN (FYDP)**

**DRAFT FINAL REPORT**

December, 1992.

Prepared by the Accra Planning and Development Programme in association with the  
United Nations Development Programme  
and the United Nations Centre for Human Settlements (Habitat)

**MINISTRY OF LOCAL GOVERNMENT  
DEPARTMENT OF TOWN AND COUNTRY PLANNING**

# **STRATEGIC PLAN FOR THE GREATER ACCRA METROPOLITAN AREA**

**VOLUME 3**

**FIVE YEAR DEVELOPMENT PLAN (FYDP)**

**DRAFT FINAL REPORT**

**December 1992**

**Prepared by the Accra Planning and Development Programme in association with the  
United Nations Development Programme  
and the United Nations Centre for Human Settlements (Habitat)**

## TABLE OF CONTENTS

<b>Chapter 1</b>		<b>1</b>
<b>INTRODUCTION</b>		<b>1</b>
 <b>Chapter 2</b>		 <b>3</b>
<b>ECONOMIC DEVELOPMENT</b>		<b>3</b>
 2.1	<b>AGRICULTURE SECTOR</b>	 <b>3</b>
2.1.1.	Crop Development	3
2.1.1.1	Production	3
2.1.1.2	Problems	4
2.1.1.3	Objectives	4
2.1.1.4	Strategies	5
2.1.1.5	Crop Production Targets	5
2.1.2	Fisheries Development	6
2.1.2.1	Problems	7
2.1.2.2	Policy Objectives and Strategies	8
2.1.2.3	Fish Production Targets	8
2.1.3	Livestock Development	9
2.1.3.1	Current Situation	9
2.1.3.2	Problems	10
2.1.3.3	Objectives	10
2.1.3.4	Strategies	11
2.1.3.5	Poultry Production Targets	11
2.1.4	Irrigation Development	11
2.1.4.1	Welja Irrigation Project	12
2.1.4.2	Dawhenya Irrigation Project	12
2.1.4.3	Ashalman Irrigation Project	13
2.1.4.4	Objectives	13
2.1.4.5	Strategies	13
2.1.5	Public Sector Development Projects	13
2.2	<b>MANUFACTURING SECTOR</b>	<b>16</b>
2.2.1	Formal Sector	16
2.2.1.1	Characteristics of the Formal Manufacturing Sector	16
2.2.1.2	Performance of the Formal Manufacturing Sector	16
2.2.1.3	Problems	17
2.2.1.4	Objectives of the Formal Manufacturing Sector	18
2.2.1.5	Strategies of the Formal Manufacturing sector	18
2.2.1.6	Formal Sector Manufacturing Production Targets	19
2.2.2	Informal Sector	20
2.2.2.1	Characteristics of Small-scale Informal Sector	20
2.2.2.2	Problems of Small-scale Informal Sector	21
2.2.2.3	Objectives for Small-scale Informal Sector development	21
2.2.2.4	Strategies for the Small-scale Informal Sector Development	22
2.2.3	GAMA Public Sector Manufacturing Projects	23
2.2.4	Private Sector Manufacturing Projects	24

<b>CHAPTER 3</b>	<b>26</b>
<b>URBAN DEVELOPMENT</b>	<b>26</b>
3.1 Land	26
3.1.1 Introduction	26
3.1.2 Urban Land Policy	27
3.1.3 Problems	27
3.1.4 Objectives of the Five Year Development Plan	29
3.1.5 Strategies:	29
3.1.6 Cost of Land	30
3.2 Physical Planning	31
3.2.1 Problems	31
3.2.2 Objectives	31
3.2.3 Development Strategies	32
3.2.4 Cost Estimates	33
3.3 HOUSING	34
3.3.1 Introduction	34
3.3.2 Policy	34
3.3.3 Constraints	34
3.3.5 Objectives	36
3.3.6 Strategies	36
3.4 Environment	41
3.4.1 Problems	41
3.4.1.1 Natural	41
3.4.1.2 Development and Environment Interaction	42
3.4.1.3 Industrial Pollution Control	42
3.4.2 Objectives	43
3.4.3 Strategies	43
3.4.4 Cost Summary	45
<b>Chapter 4</b>	<b>52</b>
<b>INFRASTRUCTURE SERVICES</b>	<b>52</b>
4.1 ENERGY	52
4.1.1 Fuelwood and Charcoal	52
4.1.2 Petroleum	52
4.1.2.1 Petrol	52
4.1.2.2 Liquefied Petroleum Gas	52
4.1.3 Hydropower	52
4.1.4 Current Distribution Network	52
4.1.5 Constraints	53
4.1.6 Objectives	53
4.1.7 Cost Summary	54
4.2 WATER SUPPLY	57
4.2.1 Water Consumption, Demand, and supply	57
4.2.2 Constraints	58
4.2.3 Objectives	59
4.2.4 Strategies	59
4.2.5 Cost Summary	59
4.3 SANITATION	63
4.3.1 Accra	63
4.3.2 Tema	64

4.3.3	Ga	64
4.3.4	Constraints	64
4.3.5	Objectives	64
4.3.6	Strategies	65
4.3.7	Cost Summary	65
4.4	DRAINAGE	68
4.4.1	Constraints	68
4.4.2	Objectives	69
4.4.3	Strategies	70
4.4.4	Cost Summary	70
4.5	SOLID WASTE MANAGEMENT	73
4.5.1	Constraints	74
4.5.2	Objectives	74
4.5.3	Strategies	74
4.5.4	Cost Summary	76
4.6	TRANSPORT SERVICES	78
4.6.1	Roads and Highways	78
4.6.1.1	Background	78
4.6.1.2	Constraints	78
4.6.1.3	Objectives	79
4.6.1.4	Strategies	80
4.6.1.5	Other strategies include:	80
4.6.1.6	The 5-Year Development Plan 1993-1997	80
4.6.2	RAILWAYS	89
4.6.2.1	Background	89
4.6.2.2	Constraints	89
4.6.2.3	Objectives	90
4.6.2.4	Strategies	90
4.6.2.5	The 5-YDP 1993-1997	90
4.6.3	AIR TRANSPORT	90
4.6.3.1	Background	90
4.6.3.2	Constraints	91
4.6.3.3	Objectives	91
4.6.3.4	Strategies	91
4.6.3.5	The 5-YDP 1993-1997	91
4.6.4	WATER TRANSPORT (PORTS AND HARBOURS)	100
4.6.4.1	Background	100
4.6.4.2	Constraints	100
4.6.4.3	Objectives	100
4.6.4.4	Strategies	101
4.6.4.5	The 5-Year Development Programme	101
4.6.4.6	Cost Summary	101

4.7	POST AND TELECOMMUNICATIONS	102
4.7.1	Postal services	102
4.7.2	Demand for Services	102
4.7.3	Constraints	102
4.7.4	Objectives	103
4.7.5	Strategy	103
4.7.2	TELECOMMUNICATION SERVICES	105
4.7.2.1	Demand for Telephones	106
4.7.2.2	Constraints	106
4.7.2.3	Objectives	107
4.7.2.4	Strategies	107
Chapter 5		113
SOCIAL SERVICES		113
5.1	EDUCATION	113
5.1.1	Basic Education Policy	113
5.1.2	Enrolment	113
5.3.4	Constraints	113
5.3.4.1	High Dependency Ratio	113
5.3.4.2	Meeting Manpower Requirements	113
5.3.5	Objectives	114
5.3.6	Strategy	114
5.3.6.1	Expansion of the industrial sector:	114
5.3.6.2	Promotion of new line service activities:	115
5.3.6.3	Growth of the construction industry:	115
5.3.6.4	Using labour-intensive technology in the rural areas:	115
5.3.6.5	In-house training:	115
5.3.6.6	Skills Development	115
5.3.7	Priority	116
5.3.9	Costs Summary	116
5.4	SOCIAL WELFARE	122
5.4.1	Policy and Plans	122
5.4.2	Constraints	122
5.4.3	Objectives	122
5.4.4	Strategies	123
5.4.5	Cost Summary	123
5.5	RECREATION AND SPORTS	124
5.5.1	Recreation	124
5.5.1.1	Public	124
5.5.1.2	Problems	124
5.5.1.3	Objective	125
5.5.1.4	Strategies	125
5.5.1.5	Cost Summary	125
5.5.2	Sports	126
5.5.2.1	Public	126
5.5.2.2	Private Sports	127
5.5.2.3	Problems	127
5.5.2.4	Objectives	128

<b>Chapter 6</b>	<b>149</b>
<b>URBAN MANAGEMENT</b>	<b>149</b>
6.1 Introduction	149
6.2 Problems	149
6.3 Objectives	149
6.4 Strategies	150
6.5 Cost Summary	153
<b>FINANCING THE PLAN</b>	<b>153</b>

## LIST OF TABLES

Table 2.1	Greater Accra Crop Development 1987-1989	3
Table 2.2	Production Targets for Selected GAR Crops 1990 - 1997 (Metric Tonnes)	5
Table 2.3	Production Targets for Pineapples 1990-1997 (Metric Tonnes)	6
Table 2.4	Greater Accra Fish Landings By Fleet - 1987-1990 (Metric Tonnes)	6
Table 2.5	Value of Export of Tuna and Other Fish 1986-1989 (US Dollars)	7
Table 2.6	Production Targets for Marine Fish and Tuna 1990-1997 (Metric Tonnes)	9
Table 2.7	GAMA Livestock Population 1988-1990	9
Table 2.8	Production Targets for Poultry 1990-1997	11
Table 2.9	GAMA Public Sector Investment Schedule For Agricultural Projects - 1993-1997	14
Table 2.10	Selected Approved projects by Ghana Investment Center for GAMA	15
Table 2.11	Production of Selected Manufacturing Commodities 1984-1988 (Thousand tonnes unless otherwise stated)	17
Table 2.12	Selected Manufacturing Production Targets - 1990-1997	19
Table 2.13	Public Sector Investment Schedule for Manufacturing Projects	23
Table 2.14	Selected Approved Private Sector Manufacturing Projects 1987-1989	24
Table 3.1	Land Use Requirements 1990 - 2010 in Hectares	26
Table 3.2	FYDP Land Requirements (ha)	27
Table 3.3	Cost Summary for Land	30
Table 3.4	Cost Estimates for physical planning in Millions of Cedis	33
Table 3.5	Projected Population, Housing Needs and Deficits for GAMA (1990 - 2010)	35
Table 3.6	Housing Production Targets by Income Groups in GAMA (1993 - 1997)	36
Table: 3.7	Total Cost of On-Going and New Housing Projects (1993 -1997) (Cost in Million Cedis)	40
Table 3.8	Cost Summary on Environment (million cedis)	45
Table 3.9	Detailed List of On-Going and New Housing Projects	46-48
Table 3.10.1	Environment and Ecology. (Drainage)	49
Table 3.10.2	Environment and Ecology. (Environmental Protection)	50
Table 3.10.3	Environment and Ecology. (Coastal Management)	51
Table 4.1	Project - Energy	55
Table 4.2	Project - Electricity	56
Table 4.3	Cost Summary - Electricity (million cedis)	57
Table 4.4	Project - Water Supply	60-62
Table 4.5	Cost Summary - Water Supply (million cedis)	63
Table 4.6	Project - Liquid Waste Management	66-67
Table 4.7	Liquid Waste Management (million cedis)	68
Table 4.8	Project - Drainage	71-72
Table 4.9	Cost Summary - Drains (million cedis)	73
Table 4.10	Cost Summary - Solid Waste Management (million cedis)	76
Table 4.11	Project - Solid Waste Management	77
Table 4.12.1	Project - Transport and Communications (Roads and Highways)	81-88
Table 4.12.2	Project - Transport and Communications (Railways)	92-93
Table 4.12.3	Project - Transport and Communications (Air Transport)	94-96
Table 4.12.4	Project - Transport and Communications (Water Transport - Ports and Harbours)	97-98
Table 4.12.5	Project - Transport and Communications	99
Table 4.13	Cost Summary - Transport Service (Million Cedis)	101
Table 4.14	Cost Summary - Postal Services (Million Cedis)	105
Table 4.15	Telephone Demand - GAMA	106



Table 4.16	Cost Summary - Telecommunications (Million Cedis)	108
Table 4.17	Project - Telecommunication	109-111
Table 4.18	Project - Postal Service	112
Table 5.1	GAMA School Enrolment. 1993 - 1997	113
Table 5.2	Project - Education	117-121
Table 5.3	Summary Of Educational Costs (GAMA) 1993 - 1997	122
Table 5.4	Cost Summary - Health Sector (GAMA) 1993 - 1997	125
Table 5.5	Employment Situation In 1984	126
Table 5.6	GAR Work Force by Educational Level. 1984	127
Table 5.7	Manpower Employment Projection	128
Table 5.8	Cost Summary - Manpower Training - 1993-1997	132
Table 5.9	Cost Summary - Social welfare Development (GAMA) 1993-1997	134
Table 5.10	Cost Summary - Development and Maintenance of Parks and Gardens (GAMA) 1993-1997	136
Table 5.11	Projects - Ghana Police Service (GAMA) 1993 - 1997	140-144
Table 5.12	Cost Summary - Emergency Services (GAMA)	145
Table 5.13	Cost Summary - Fire Prevention 1993 - 1997	147
Table 6.1	Cost Summary - Urban Management (1993-1997)	153
Table 6.2	Total 5-Year Budget - All Sectors 1993 - 1997	155

# Chapter 1

## INTRODUCTION

The Five Year Development Plan (FYDP) is a continuation in the process of preparation of a comprehensive development programme for Greater Accra Metropolitan Area. The programme started with a study of the social, economic, physical, and environmental conditions, leading to the publication of two volumes: The first describes and analyses the planning environment and its problems; the second volume, building upon the first, stipulates strategies for development. These studies have helped to evolve a consensus on how to pursue the basic objectives and priorities for the five years beginning in 1993. The Plan can thus be considered as the first phase of the Implementation programme which would take several such five year development plans.

The Plan has been formulated as part of a longer term perspective of national social and economic development. It is prepared during a period when the economy of Ghana is in a strong position because of the success of the Economic Recovery Programme. The GDP has been growing at a rate of 5 percent since 1985, except in 1990 when it dipped below 3 percent. It is expected to continue growing at a higher rate until the year 2000. Agriculture will grow by about 3 percent, service 4 percent, and industry by 10 percent annually. There will be about 9,500,000 employed by 1995, up from 5,747,000 in 1985, an increase of nearly 69 percent.

The Plan will build on these foundations. This means that GAMA has to sustain and accelerate the momentum of economic growth. Agriculture, industry, infrastructure and social services have to function at progressively higher levels of efficiency and productivity. Full advantage must be taken of advance in science and technology to bring about the needed structural transformation of the economy. Simultaneously, measures designed to raise the productivity and incomes of the poor sections of society must be pursued with greater vigour.

GAMA's economic performance has improved considerably in the last decade. The Plan seeks to take advantage of this favourable trend by aiming at a stable growth rate of the national economy of an average annual rate of 5%. Industrial and agricultural outputs are targeted to increase. Commercial and financial services are also expected to increase.

The Plan is employment oriented. Over the Plan period, employment is expected to increase by about 319,000 compared to an addition of 217,000 persons, well above the expected growth of the labour force. Nearly 55 percent of the total employment will come from industry and 42 percent from service industries.

Promotion of efficiency and higher productivity are other major objectives of the Plan. Increased and more efficient utilization of existing assets both in agriculture and industry will contribute to increasing the efficiency of resource use and also help in containing the rise in the capital output ratio. A coordinated approach to irrigation, drainage and land use management will be adopted to realise the potential of agriculture. The focus on increasing yields per acre will be through improved agricultural practices and inputs. In industry, emphasis is being placed on modernisation. The policy framework for industrial growth lays special emphasis on setting up of plants of economic size and on the creation of an environment where business firms have an adequate incentive to modernise, reduce cost, improve quality of their products and upgrade their technology. A well conceived and coordinated approach to the introduction of these emerging technologies in the production process will further accelerate the pace of technical progress, structural change and growth of productivity, efficiency and quality conditions.

In order that agriculture, industry, and service may grow faster, increased emphasis has been placed on investment in infrastructure so that shortages in transportation and communication and sewage and outages of power and water do not arise for the scale of activities envisaged in the Plan and beyond. Power and water supplies will increase significantly during the Plan period. A total of 785 kms of arterial and collector roads will be built during the five years, while 19,000 new telephone lines will be added during the same period.

Improvements in postal service are also expected to be implemented. The total cost of infrastructure will be about 264 billion cedis.

Another major thrust area in the Plan is human resource development. Public outlays for social services represent 17.2 percent of the total FYDP budget. Enrolment is expected to increase by 113,000 at the primary, and 12,300 at JSS. This requires additional teachers for basic education and for SSS. Furthermore, a total of 3,000 technical/vocational school graduates will be available to work in various commercial and industrial sectors of GAMA. Incomplete schools will be completed during the plan period. The Plan seeks to provide adequate drinking water facilities for the entire population in both urban and rural areas of GAMA. By the end of Plan period, the infrastructure for primary health care (PHC) will be fully operational in all of GAMA. The percentage of PHC coverage will increase significantly to 64 percent in 1997. A total of 2 health posts/centres will be built during the plan period.

The environment is under severe threat from the pressures generated by population growth, poverty, and the misuse/unplanned use of GAMA's resources. While many of its environmental ills could be corrected by economic growth, the Plan cautions that utmost care must be exercised to ensure that the developmental activities which bring about such changes should be designed so as not to leave adverse environmental effects. The coastal zone of GAMA is facing a critical stage in its evolution. As the population in the metropolitan area increases, so do the pressures on the coastal zone. The fundamental challenge in the Plan is to maintain and in some cases improve, the environmental quality of this zone in the face of increasing population pressure.

The Plan has been prepared with the cooperation of all government agencies involved in the delivery of economic and social services in GAMA. The various plans, projects, priorities, and costs are the result of intensive discussions and agreement with these agencies, although APDP was responsible for their initiation and preparation. The preparation of the Plan had one major problem. This is the first FYDP prepared in Ghana at sub-national level. Disaggregated information relevant for the preparation of the Plan was not available at the level of study area. Much of the data came from a number of baseline studies undertaken or commissioned by APDP and secondary data. In some cases, APDP has used our best knowledge, and judgement.

The success of the Plan depends on the availability of financial resources, the implementing capacity of the sectoral agencies, and, the existence of a management structure to coordinate the Plans programme of activities and to initiate new ones. The Plan is expected to cost 525 billion cedis (1.4 billion US dollars) in 1991. The total resources available for investment consists of domestic savings and inflow of capital from abroad. The former consists of savings by the household, private corporate, government (central) and public enterprise sectors. Household sector savings is estimated at 88 billion cedis or (13.4%) of the total investment budget. The private corporate sector will rise during the Plan period as more investment incentives are introduced by Government. Its contribution is estimated to be about 120 billion cedis, representing 23 percent of the total investment budget. Governmental sources will carry the major share (80%) of the total expenses. The foreign component of the investment budget will mainly be used for investment in infrastructure facilities as well as in purchases of equipment, materials, and services for capital investment.

A central theme going through the preceding volumes was the need for a management structure to coordinate and initiate new development projects in GAMA. First, there is no agency responsible for coordination and execution of the various projects committed in the PIP. In addition, private sector and the informal sector investment in the social and economic activities of GAMA are also carried out independently of any central agency responsible for the overall development of GAMA. Thirdly, the success is also dependent on a central agency to attract investment from both local and international sources. Government is expected to address the problem of central management for GAMA before the Plan is launched.

The Plan is both modest and realistic, representing a balance between developmental needs and availability of financial resources. The Plan also represents a massive regional effort to build a new GAMA, ready, willing, and able to play a role as a national capital, on one hand, and an international city, on the other. It is an expression of the collective will of the people of GAMA. Despite the many challenges and uncertainties it faces, the Plan is bankable and credible.

## Chapter 2

# ECONOMIC DEVELOPMENT

## 2.1 AGRICULTURE SECTOR

GAMA is essentially an industrial region accounting for the bulk of the manufacturing activity in the country. It is also the major financial centre of Ghana and controls the wholesale and retail trade of the country. In addition to these key positions in the economy of Ghana, GAMA also makes some contributions in the agricultural development of the country especially in fishing, horticulture and poultry. In 1990, GAMA accounted for 51% of total fish landings in the country and for 24% of total poultry production in Ghana. It produced in 1989 the bulk of the pineapple exported from Ghana, 28% of the tomatoes produced in the country, 14% of garden eggs and 13% of pepper.

The significant development that has occurred in the agricultural sector has been the emergence of non-traditional agricultural products on the export market. Between 1986 and 1989 there has been a steady increase in export earnings from the sector especially from the export of tuna, pineapples and other horticultural exports from the GAMA region. Export earnings in 1988 from tuna were \$14.3 million as compared with the 1986 earnings of \$12.7 million. The earnings from pineapple exports rose from \$433,430 in 1986 to \$2.1 million in 1989. These developments in the agricultural sector of GAMA will assume greater importance in the coming years.

### 2.1.1. Crop Development

#### 2.1.1.1 Production

Crop production statistics are only available for the entire Greater Accra Region and not by districts. Only maize and rice are produced under cereals and cassava is the only starchy staple produced in the Greater Accra Region. Under pulses, nuts and oil seeds, the only crop produced is groundnuts. The principal vegetables are pepper, okro, tomatoes, beans and garden eggs. The major fruit produced in the area is pineapples which is beginning to make an impact as a non-traditional export crop. Table 2.1 shows the area and production of the principal crops in the region between 1987 and 1989.

Table 2.1 Greater Accra Crop Development 1987-1989

Crop	1987		1988		1989	
	Area (HA)	Production (MT)	Area (HA)	Production (MT)	Area (HA)	Production (MT)
Maize	15,349	9,200	13,000	15,700	18,900	25,200
Rice	650	500	1,400	900	1,000	600
Cassava	14,595	65,678	20,500	96,500	19,300	85,100
Groundnuts	554	400	600	600	600	500
Beans	1,346	257	1,400	280	1,000	300
Pepper	6,882	19,960	7,000	23,200	7,000	22,000
Okro	553	2,720	400	2,600	500	2,700
Garden eggs	187	1,050	190	1,083	200	1,000
Tomatoes	5,360	25,500	5,400	26,700	6,000	27,500

Source: PPMED (Statistics Division) Ministry of Agriculture.

From the table, only maize, cassava, pepper and tomatoes have shown any steady increases in production since 1987. The increase has been due not to any appreciable expansion in hectares under production but rather to increases in yields per hectare. Output in maize production rose from 9,200 metric tonnes in 1987 to 25,200 metric tonnes in 1989. Cassava production rose from 65,678 metric tonnes in 1987 to 96,500 metric tonnes in 1988 and fell slightly to 85,100 metric tonnes in 1989. Tomatoes production of 27,500 metric tonnes representing 28% of total production in Ghana in 1989, rose from an output of 25,500 metric tonnes in 1987.

Pineapple production figures are not available on the total area under cultivation or on total output of pineapples. The only reliable data is from the Export Promotion Council on volume and value of exports of pineapples. Exports of pineapples rose from 2,656,817 metric tonnes in 1986 to 4,906,616 metric tonnes in 1988. This figure was almost doubled in 1989 to 7,946,949 metric tonnes earning \$2.1 million as against an export earning of \$1.4 million in 1988 and of \$899,650 in 1987.

There were sixty pineapple exporters in 1989. Most of the farms are located in the GAMA region around Samsam, Amasaman and Pokoase. In addition to pineapple exports, vegetables are beginning to enter the export market with pepper leading the group of vegetable exports.

### **2.1.1.2 Problems**

In spite of these encouraging developments since the economic recovery programme, there are still constraints that hamper the development of the crop development sub-sector. These include:

- (a) Low rate of adoption of improved technological packages by small holder farmers;
- (b) Lack of credit on easy terms to the sector from the financial institutions;
- (c) Lack of inter-sectoral linkage with other sectors especially with the manufacturing sector for the processing and preservation of crops such as tomatoes, garden eggs, okro, pepper, etc
- (d) Lack of sufficient cold storage and warehousing facilities at the ports for the export of pineapples to their final destinations;
- (e) Lack of interest on the part of the private sector in general to invest in cold storage and warehousing facilities for the preservation of products from the crop sector;
- (f) Low industrial capacity of existing medium and large scale agro-processing factories of GIHOC due to lack of spare parts for obsolete plant and equipment, uncompetitive prices for raw materials, inefficient financial management, and poor marketing strategy.

### **2.1.1.3 Objectives**

During the plan period, the following objectives will guide the development of the crop sub-sector:

- (a) Make the private small scale farmers the main focus of attention in the production of crops in GAMA as in the rest of the country;
- (b) Reduce direct public sector involvement to a minimum except in areas of research and extension on improved cultivation methods;
- (c) Increase the flow of credit to the sub-sector;
- (d) Improve the country's balance of payments position through increased pineapple and vegetable exports from GAMA;
- (e) Increase employment opportunities from the sub-sector;

- (f) Strengthen inter-sectoral linkages especially with the manufacturing sector.

#### 2.1.1.4 Strategies

In order to achieve above objectives, the following strategies will be adopted:

- (a) Increase productivity of the small scale farmer by introducing him to Improved varieties, cultivation methods and crop protection methods to reduce post-harvest losses;
- (b) Provide good marketing, storage and transportation facilities for the export of pineapples and vegetables from GAMA in order to relieve the farmer of the problems of marketing as is the case with the cocoa and other traditional crop farmers;
- (c) Reduce public sector operation and management of commercial storage and warehousing facilities in GAMA by encouraging the leasing of these facilities to private sector operators;
- (d) encourage groups of women to go into medium-scale agro-processing by using inter-mediate technology provided through bank credit.

#### 2.1.1.5 Crop Production Targets

The production targets for the development of the crop-sector have been limited to key crops such as maize, cassava, pepper and tomatoes. These crops have shown, between 1987 and 1989, some steady increases in output due more to increases in yields per hectare than to any expansion in area under cultivation. The production targets have been based on the best available data on these crops in the Greater Accra Region (GAR). The reasoning behind these forecasts is that the current policy of Government of making the small-holder farmer the focus of attention so that he can produce increases in output from improved yields and through better farming practices than to any expansion in area under cultivation. As Table 2.2 indicates, tomato output from GAR, which in 1989 accounted for 28% of total production in the country, will increase from 26,566 metric tonnes in 1990 to 32,667 metric tonnes in 1997. Production of cassava will reach 111,500 metric tonnes in 1997 from a 1990 base year production level of 90,662 metric tonnes. The growth rate assumed for these selected crops is 3% per annum.

**Table 2.2 Production Targets for Selected GAR Crops 1990 - 1997 (Metric Tonnes)**

Crops	1993	1994	1995	1996	1997
Maize	27,536	28,362	29,212	30,088	30,990
Cassava	99,067	102,039	105,100	108,253	111,500
Pepper	23,733	24,444	25,177	25,932	26,709
Tomato	29,027	29,897	30,793	31,716	32,667

Production targets for pineapple have been based on the volume of exports since no data exists on actual area under cultivation and total output of pineapples. A 5% growth rate is assumed for the crop per annum. As more reliable data become available on this emerging export crop, the targets will have to be revised. Table 2.3 shows the targets for pineapple production.

**Table 2.3 Production Targets for Pineapples 1990-1997 (Metric Tonnes)**

Year	Crops
1990	5,170,000
1991	5,428,000
1992	5,699,000
1993	5,983,000
1994	6,282,000
1995	6,596,000
1996	6,925,000
1997	7,271,000

### 2.1.2 Fisheries Development

The GAMA coastline stretches for 65 kilometers and provides a wide range of fishes including tuna, sardines, mackerel, snapper, trigger fish, cassava fish, doctor fish, sea breams, grouper, shrimps and lobsters. There is some fishing in the Weija Lake of tilapia in very small quantities. Surface dwelling fishes or pelagic fishes such as sardines, anchovies and mackerel are migratory and therefore appear in abundance seasonally between July and September. There is a minor season at times in January and February with limited quantities fished throughout the year. It is generally believed that the surface dwelling fishes have been heavily depleted in GAMA waters because of over - fishing over the years. The bottom dwelling species of fish or demersal fish such as sea breams, grouper, snappers, trigger fish and doctor fish are caught throughout the year by trawling. Canoe fishermen catch them with hand lining, bottom set nets and sieve nets in areas of the sea which are not rocky like Tema and Labadi shorelines.

The fishing industry in GAMA is an important economic activity providing employment to a wide range of people including illiterate and semi-illiterate seamen and shore personnel. The canoe fishing activity which accounts for the bulk of fish landings annually, that is, 53.7% in 1990, provides employment for most of fishing communities along the coast of GAMA. In addition, it engages several women in the processing and distribution of fish both within GAMA and throughout the rest of the country. In 1990, GAMA fish landings accounted for 50.9% of total national production of fish from marine sources. This represents a substantial increase in fish production from GAMA which accounted for 42.8% in 1987, 46.5% in 1988 and 49.5% in 1989. Table 2.4 shows the breakdown of fish landings by fleet for the Greater Accra Region between 1987 and 1990.

**Table 2.4 Greater Accra Fish Landings By Fleet - 1987-1990 (Metric Tonnes)**

Fleet	1987	1988	1989	1990
Canoes	79,866	85,389	93,211	85,010
Inshore Vessels	7,603	3,733	7,533	5,100
Industrial Trawlers	20,171	16,116	23,073	26,588
Shrimp Vessels	-	-	380	726
Tuna Vessels	33,465	35,736	32,294	40,803
Total	141,105	140,974	156,491	158,227

*Source: Fisheries Department, Ministry of Agriculture, July 1991.*

The Fisheries Department of the Ministry of Agriculture has indicated that catches of demersal fishes have been on the decline in recent years. In addition, a large proportion of the catches now contain small size or young fish which should indicate depleting stock of demersal fish in our waters.

About 26% of the tuna landings in 1990 were from the Greater Accra Region. This large sized surface fish are caught far off at sea. Canoes and inshore vessels are only able to catch small quantities. The commercial fishing of tuna is by specialized industrial vessels outside GAMA exclusive economic zone in international waters. Tuna fish, which are migratory are considered safe in terms of stocks and do not therefore attract the restrictions applicable to other declining species of fish. Tuna exports in 1989 were 21,543 metric tonnes representing 66.7% of total tuna landings for the year.

**Table 2.5 Value of Export of Tuna and Other Fish 1986-1989 (US Dollars)**

Fish	1986	1987	1988	1989
Tuna	12,747,250	11,095,230	14,298,250	5,458,440
Fresh Frozen Fish	1,786,210	3,110,090	5,777,910	6,007,990
Lobster, Shrimps	-	-	-	-
Prawns	61,950	370,980	301,050	894,270
Cuttle Fish	-	-	39,100	120,710
Dried/Smoked Fish	32,870	72,010	82,310	61,460
Salted Tilapia	30	600	2,360	1,170
Shark Fins	13,270	36,880	90,920	118,940
Other Fish	550	3,260	3,060	10,860

*Source: Ghana Export Promotion Council 1991.*

There is trawling for shrimp in GAMA waters. In 1990 total shrimp caught was 726 metric tons which was more than double the catch of 380 metric tonnes for 1989. Ghana waters are considered to contain large commercial quantities of shrimp. In 1990, there were 12 shrimp vessels operating in GAMA waters. In 1990, there were operating in GAMA 3,150 canoes, 135 inshore vessels, 31 distant water vessels, 12 shrimp vessels and 36 tuna vessels.

As in the rest of the country, three forms of traditional processing of fish take place in GAMA, ie smoking, salting and drying. In addition there is a total of 39,425 metric tonnes cold storage capacity in GAMA with 74.6% serviceable capacity available.

### **2.1.2.1 Problems**

The major problems in the fishing industry are:

#### **(a) Depletion of Marine Fish Resources**

The depletion of the marine fish resources in the waters of GAMA is a result of over exploitation of the fish resources. This is because of the large number of fleet operating in the country coupled with the poaching by foreign vessels in our waters. The depletion is also a result of the illegal use of the wrong size mesh nets in fishing younger species of fish over the years.

#### **(b) High Interest Rate and High Fuel Costs**

Since the introduction of the economic recovery programme, the fishing industry has suffered a number of set backs. The high interest rates on loans and high fuel prices have pushed up the operating costs on fuel for bunkering. Until March 1991, it was estimated that fuel costs alone accounted for the bulk of the total operating costs of a single fishing expedition. Since March, there has been a 50% reduction in the cost of fuel for bunkering. In spite of this reduction, the exchange rate adjustment of the cedis through the weekly auction of the currency, has created difficulties for companies in finding the cedis equivalent to purchase foreign currency for fishing gear and spare parts. The financial institutions have not been helpful in adequately



funding the fishing companies. The result of these financial problems is that several fishing vessels are left moored at the Tema fishing harbour for long periods for lack of fuel, food and fishing gear before making an occasional fishing expedition to sea.

### **(c) Insufficient Cold Storage Facilities**

There is also the problem of insufficient cold storage facilities in the GAMA area outside the Tema fishing harbour. As a result during the peak fishing season when sardines and herrings are harvested in large quantities, prices drop sharply because of lack of cold storage facilities in the fishing communities outside the Tema harbour area. Consequently fishermen do not fully exploit the fish resources of the season.

## **2.1.2.2 Policy Objectives and Strategies**

In order to revive the fishing industry to its efficient level of operations in the sixties and seventies by increasing production and creating opportunities for employment in the fishing communities in GAMA, the principal objective will be to maintain the industry essentially in the private sector. The role of the Government will be in areas of research, extension and regulatory services. The strategy will be the withdrawal of the public sector from commercial activities of the State Fishing Corporation and the production of fingerlings. Public sector involvement will be in the field of:

- (i) improving the outer harbour and drydock facilities at Tema harbour,
- (ii) strengthening the research facilities at Tema to improve fish resource management in the coastal areas;
- (iii) promoting community-based management in inshore areas;
- (iv) designing and implementing a monitoring control and surveillance system for fleet operations in the Ghana Exclusive Economic Zone (EEZ);
- (v) identifying foreign aid for the procurement of fishing gear to be held in bonded warehouses for purchase by fishing companies as aid facilities were arranged for purchase of raw materials and spare parts for the recovery of the manufacturing sector;
- (vi) identifying foreign technical assistance for the survey of bottom-trawling areas along the coastline for demarcating coral-free areas for the fishing of demersal fishes such as red fish, grouper, doctor fish, trigger fish etc.
- (vii) rehabilitation of the port facilities for an expanded tuna export;
- (viii) identifying foreign aid sources for the procurement of medium size cold storage facilities for location in local fishing communities - along the GAMA coastline for use in storing peak season landings.

## **2.1.2.3 Fish Production Targets**

The production targets for the fisheries sub-sector are presented in Table 2.6. An annual growth rate of 4% is assumed for marine fish output. Separate production targets are set for tuna because of its perceived future role in fish exports. A 5% annual growth rate is assumed for Tuna.

**Table 2.6 Production Targets for Marine Fish and Tuna  
1990-1997 (Metric Tonnes)**

Year	Marine Fish	Tuna
1993	170,862	41,993
1994	177,692	44,092
1995	184,803	46,296
1996	192,195	48,610
1997	199,882	52,040

## 2.1.3 Livestock Development

### 2.1.3.1 Current Situation

Livestock production in GAMA consists, as in the rest of the country, of ruminants such as cattle, sheep and goats and non-ruminants like poultry, pigs and rabbits. In 1989, there were 14,278 herds of cattle in GAMA representing 1.2% of total cattle herds in Ghana, 44,399 sheep (2.1%), 49,007 goats (2.0%), 13,109 pigs (2.3%), and 67,185 poultry (23.6%) Table 2.7 shows the breakdown of the Livestock population between 1988 and 1990 for GAMA.

In addition to these sources of red meat in GAMA, there is wild game hunting of grasscutter, antelope, dunker, bush fowls and ducks which are consumed in the area or brought in from other parts of country.

**Table 2.7 GAMA Livestock Population 1988-1990**

Year	Cattle	Sheep	Goats	Pigs	Poultry
1988	12,642	55,418	54,974	20,145	1,191,642
1989	14,278	44,399	49,007	13,109	828,261
1990	12,130	36,125	40,296	11,197	2,067,185

*Source: Animal Health and Production Department.*

However the private commercial poultry sub-sector operated under modern conditions is the main animal protein contributor in GAMA as in the other urban centres of Ghana. Indeed it is only in GAMA that the largest concentration of modern poultry industry, with sophisticated management and techniques, can be found. About 65% of the 8.7 million poultry in Ghana in 1989 were kept as scavenging birds by most rural households. It is therefore to the modern commercial poultry industry in GAMA that the credit goes for the record of self-sufficiency of Ghana in the years past in the production of eggs and broiler meat. For some time now however, increasing costs of maize, fish and other feed ingredients have affected the selling price of both eggs and broiler meat.

In spite of this, poultry production has shown tremendous increases in the past few years in GAMA. Total production increased to 2.1 million birds in 1983 from 447,500 in 1982. There was a slight decline over the 1983 production level to 862,880 in 1984 but the level was to rise again to 2.8 million birds in 1985. There was sharp drop to 1982 production levels in 1986 when only 472,840 birds were produced. This figure was doubled in 1987 to 893,200 birds. Production in 1988 was 1.2 million and in 1989 total poultry production was 828,300. Production in 1990 was 2 million.

### 2.1.3.2 Problems

#### (a) Cost of Feed

The most important problem is the rising cost of maize and other ingredients for compounding poultry feed. Since 1983, maize production has been increasing throughout the country. From 597,700 metric tonnes in 1987, production rose to 714,614 metric tonnes in 1989. In spite of this increase in production, the poultry farmer is unable to buy maize or fish when prices are low during the harvest season because of lack of credit facilities.

#### (b) Lack of Credit and Inefficient Operation of Local Hatcheries

Another constraint on the poultry industry is inefficient operation of local hatcheries. The lack of credit prevents the local hatchery owners to take advantage of low maize prices during the harvest season and to purchase the right veterinary drugs for producing quality day-old chicks locally for poultry farmers. While imported day-old chicks take six weeks feeding to be ready for the market, locally produced chicks take about eight or more weeks. This naturally increases cost of production resulting in smaller margins of profit to the poultry farmer.

#### (c) Trade Liberalization Policy and Local Poultry Production

In addition to high costs of feed and poor quality day-old chicks, the liberalization of trade introduced with the economic recovery programme has led to the importation of poultry and other poultry products that compete unfavourably with locally produced poultry meat and products. In 1987 when total poultry population was 8.2 million birds, 510,000 kilograms of poultry was imported into the country. In 1988 the imports were 118,000 kg as against a production of 8 million birds and in 1989 the imports rose to 339,000 kg with a local poultry population of 8.7 million.

#### (d) Poor Feeding Methods for Pigs, Sheep and Goats

Like the poultry sub-sector 93.8% of the pig population in GAMA were of the exotic type in 1990. Only 698 pigs out of the total pig population of 11,197 pigs were of the local indigenous type. In other words it was only in GAMA that modern pig production, with better breeding stock and modern methods of feeding has emerged. In the rest of rural Ghana, the bulk of the 559,000 pigs produced in 1989 were of the local breed and kept as animals to fend for themselves. For the ruminants group of livestock some modern cattle ranching operates in GAMA at Amarahia. Sheep and goats are left to feed themselves resulting in low live weights because of lack of proper nutrition.

#### (e) Presence of Livestock Diseases

In addition to the problem of lack of proper feeding programme for the bulk of the ruminant livestock population in GAMA and in the rest of the country, trypanosomiasis is a serious disease that affects the livestock population especially cattle. It is estimated that in addition to this disease, about 80% of sheep and goats mortality is caused by peste des petits ruminants (PPR) disease. Among pigs pneumonia and helminthiasis are serious diseases in addition to trypanosomiasis. In GAMA, gumoro disease affects most modern poultry farms. In spite of these problems affecting livestock production in GAMA, the region remains the most modern producer of poultry, pig and cattle.

### 2.1.3.3 Objectives

In line with overall agricultural development policy of relying on the private sector for the provision of commercial services thereby reducing the role of Government in the sector, the broad policy objectives for livestock development in GAMA will be:

- (a) To encourage the private livestock owner as the principal producer.
- (b) To encourage breed improvement generally in the livestock sub-sector;
- (c) To develop private sector services in the field of veterinary services, marketing and feed production;
- (d) To create the link between the livestock sector and crop production sector;
- (e) To evolve a feed programme for the production of small ruminants like goats, sheep and pigs.

#### 2.1.3.4 Strategies

To attain the above objectives during the Plan period, GAMA will pursue the following livestock development strategies:

- (a) Improve productivity through improved nutrition, water supplies and animal health;
- (b) Provide the right incentives for private sector participation in the provision of veterinary services, marketing and feed production through credit schemes for the purchase and storage of maize, feed mill and veterinary drugs by the farmer and hatchery owners;
- (c) Promote an aggressive improved feed programme extension to promote the growth and expansion of sheep and goat population;
- (d) Create the opportunity to producers to sell their animals at competitive prices in organized market yards instead of the present system of private dealers buying at farm gates. The community market yards will expose the producer to more buyers than one and provide him with information on prices in other market yards in other communities.

#### 2.1.3.5 Poultry Production Targets

In spite of the major role played by GAMA in poultry production in Ghana (23.6% in 1989), a modest growth rate of 8% per annum has been assumed for poultry production up to 1997. This is because the highly modernized poultry industry in GAMA in recent years has encountered serious credit problems and competition from imports. Table 2.8 shows the output targets from 1990 to 1997 based on flock population of birds.

**Table 2.8 Production Targets for Poultry 1990-1997**

Year	Flock Population
1993	1,716,182
1994	1,853,476
1995	2,001,754
1996	2,161,894
1997	2,334,845

#### 2.1.4 Irrigation Development

GAMA has two main irrigation projects within its boundary, namely Weija and Ashiaman. Dawhenya lies just outside the boundary line but, for purposes of irrigation agricultural development, it can be considered as part of GAMA. The three dams together have enough water impounded in their reservoirs for irrigating a total area of 2,124 hectares. In 1990 only 457 hectares of the land had been developed for irrigation farming. Only

Ashlaman dam depends on gravity for its water supply. Dawhenya and Welja use power for pumping irrigation water.

#### **2.1.4.1 Welja Irrigation Project**

The Welja Irrigation Pilot Project was designed to cover an area of 220 hectares for the cultivation of vegetables for the local and the export market. Initially the Welja dam was to provide, drinking water to Accra and to develop a total of 1,500 hectares for irrigation farming.

In spite of the fact that a private company was incorporated in 1982 by the Government and started operations in April 1983 when the first batch of 50 peasant farmers started field operations, the Welja Irrigation Co Ltd. has not been able to get off the ground. A number of factors are responsible for this state of affairs.

- (a) The first farmers were not fully committed to irrigation farming.
- (b) The lack of a proper market survey for the sale of vegetables.
- (c) Competition on the market forced most farmers to develop only half of the one hectare allocated to them.
- (d) Commercial farmers with larger areas had problems of high labour costs.
- (e) There was also the initial high cost of irrigation water of 150,000 cedis per hectare per year.
- (f) There were the problems of poor soils not suitable for vegetable cultivation, salinity of some blocks and water logged areas.

In line with government policy to fully utilize existing dams for irrigation agriculture, every effort is being made to make the project viable. Already the water charge has been reduced to 90,000 cedis per hectare per year to be in line with the true cost of the total area of land so far developed, namely 220 hectares. To deal with the marketing problem, commission agents have been engaged to sell the company's products.

The strategy in the coming years will be to

- (a) improve the drainage in the water logged areas and grow rice in poor soil blocks apart from encouraging the use of cow dung on poor soils to improve fertility of the soils.
- (b) reduce labour costs in the commercial farming sector, encouragement will be given for the formation of commercial farmers' associations which can decide on uniform labour charges in the area.

#### **2.1.4.2 Dawhenya Irrigation Project**

This project, started in 1959 by the State Farms Corporation, has a potential area for full development of 450 hectares. Only 187 hectares have been farmed. Rehabilitation phase of the project will cover 240 hectares. Rice production has increased considerably with the improvement of pumping station, canals, roads, buildings and utilities. Rice yields from the project are about thirty bags per acre at 73 kg/bag. A total of 1100 million cedis have been spent on the project, with the foreign exchange component of 721 million cedis, between 1985 and 1990.

The problems faced by the project were poor management by the Irrigation Development Authority; poor water management; and poor farmer service delivery.

Since the project started, the strategy has been to rehabilitate the irrigation and drainage systems, improve the mechanisation services, strengthen farmer cooperatives and input supply and marketing facilities and to train farmers and project staff. The focus of the project remains the small holder farmer.

### 2.1.4.3 Ashaiman Irrigation Project

The project which was operated in the 1970s by the Irrigation Development Authority, has about 150 hectares of land now under rice cultivation.

The objective of the project is to rehabilitate the irrigation facilities, houses and offices and to establish a research centre with foreign assistance. It is also proposed to establish a full meteorological station.

### 2.1.4.4 Objectives

- (a) To ensure the optimum use of existing irrigation facilities in GAMA.
- (b) To develop small-scale and micro-scale schemes in GAMA.
- (c) To manage efficiently the flood plains of the area.

### 2.1.4.5 Strategies

Irrigation sub-sector strategies will be:

- (i) to make use of existing investments by greatly reducing operating costs and completing the development of economically justifiable schemes;
- (ii) to encourage farmers themselves to develop and manage small-scale schemes. The idea will be for the IDA to spend more time promoting farmer groups and offering them training in operating irrigation schemes and improved farming methods;
- (iii) to encourage the use of small pumps to draw water from shallow wells dug in alluvial deposits which are replenished annually;
- (iv) to encourage the planting of rice in seasonally flooded blocks and where simple bunds and structures can be built for flood control.

### 2.1.5 Public Sector Development Projects

In line with current Government policy for the development of the economy of Ghana, much of the agricultural development in GAMA is expected to come from the private sector. The role of Government will, during the plan period, be limited to creating the right macro-economic environment through proper policies and incentives for the private sector to operate. During the plan period, the Public Investment Programme outlines only nine projects for the agriculture sector of GAMA. Total planned investment between 1993 and 1997 is estimated at 1442 million cedis of which 116.3 million cedis is in foreign exchange. Table 2.9 shows a breakdown of the public sector projects. About six, of these projects are on-going projects. In other words, the private sector with emphasis on the small-holder farmer and fisherman is expected to take the lead in the development of agriculture in GAMA as is the policy for the rest of the country.

Table 2.9 GAMA Public Sector Investment Schedule For Agricultural Projects - 1993-1997

Planned Expenditures (Million Cedis)												
PROJECTS	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	Project FC	To LC
Pineapple Development (O)	-	26	-	41	-	-	-	-	-	-	-	67
National Seed Laboratory(O)	-	45	-	12	-	-	-	-	-	-	-	57
Weiija Irrigation(O)	-	93	-	-	-	-	-	-	-	-	-	93
Ashiaman Irrigation(N)	3	19.0	-	-	-	-	-	-	-	-	3.0	19
Horticultural Extension(O)	-	11	-	-	-	-	-	-	-	-	-	11
Fish Stock Monitoring and Assessment (O)	30	-	-	-	-	-	-	-	-	-	30	-
Exploratory fishing for Crustaceous(N)	15	11	15	11	-	-	-	-	-T-	30	22	55
Marine Fisheries Research Lab (N)	-	10	300	-	-	-	-	-	-	-	300	10 3
Grainage Storage and Handling(O)	-	-	800	-	-	-	-	-	-	-	800	- 8
<b>Total</b>	<b>48</b>	<b>215</b>	<b>1,115</b>	<b>64</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,163</b>	<b>279 1,4</b>

Source: MFEP, Public Investment Programme 1991-93 Vol.2.1 April 1991.

MOA: Ghana Medium Term Development Plan 1991-2000 Vol.II Feb. 1990.

Note: (N) - New FC - Foreign Currency

(O) - Ongoing LC - Local Currency

The public sector involvement in the development of agriculture in GAMA will be restricted to creating economic incentives such as competitive producer prices, a market based exchange rate and a pragmatic trade regime. In addition, Government will through public sector investment improve infrastructure such as

roads and communications, encourage the financial institutions to provide adequate credit to farmers and provide through the civil service public services such as research, extension, animal health. Government will also promote the development of grassroots organizations vital to the growth of the agricultural sector.

This new thrust of policy has been part of the economic recovery programme since 1983. In order to glean the direction of development resulting from these policy measures, a selected number of approved projects by the Ghana Investment Centre for GAMA are outlined in Table 2.10.

**Table 2.10 Selected Approved projects by Ghana Investment Center for GAMA**

Project	Location	Product
Cold Storage	Tema	Ice Block and Cold Storage
Food Manufacture	Tema	Frozen Soup
Cold Storage	Tema	Ice Block and Cold Storage
Food Manufacture	Tema	Processed seafood
Food Manufacture	Madina	Biscuits
Beverage Industry	Accra	Carbonated Beverage
" "	Accra	Non-Alcoholic "
Food Manufacture	Accra	Meat Extract, Soya Milk
Food Manufacture	Accra	Ice Cream and Ice Lollies
Food Manufacture	Accra	Bread and Pasteries
Edible Oil	Tema	Factionated Vegetable Oil
Beverage	Tema	Canned Beer and Soft Drinks
Cold Storage	Accra-Mamprobi	Ice Blocks and Storage facility
Ranch	Amarahia	Meat and Dairy Products
Beverage	Accra	Citrus Juice
"	Medie-Ga District	Mineral Water
Food Manufacture	Accra	Ice Cream from malze
" "	Tema	Filleted fish
" "	Tema	Salted, Dry Fish, Shark Fins Fish meal
Food Manufacture	Tema	Shea-butter

Source: Ghana Investments Centre, 1991.



## 2.2 MANUFACTURING SECTOR

GAMA is the most industrialized part of Ghana and controls over 50% of the manufacturing activity in the country. These manufacturing activities, representing over 60% of value added in the country, are generated from GAMA.

### 2.2.1 Formal Sector

#### 2.2.1.1 Characteristics of the Formal Manufacturing Sector

The manufacturing sector in GAMA is characterized by the following: production is in both large and small scale enterprises with few sectoral linkages, the sector is highly import dependent both in terms of raw materials and spare parts. Manufacturing investment is in both medium and large scale formal sector establishments employing thirty or more workers and small scale informal enterprises with less than thirty workers and more often employing less than ten workers. Between 78 and 85 percent of manufacturing employment is estimated to be in the small scale informal sector.

Most of manufacturing production in GAMA consists of importing, processing or assembling, and sales to consumers or retailers. There are very few firms in GAMA producing intermediate goods except establishments with rolling mills producing iron, steel and aluminium sheets and structural shapes. There are very few sales within the manufacturing sector in GAMA.

The manufacturing sector experienced, like all other sectors of the economy, the severe decline of the late seventies and early eighties. Since the initiation of the economic recovery programme of 1983, the manufacturing sector has been responding positively, though slowly, to a package of policy measures introduced for the efficient growth of the sector. The measures included the provision of foreign exchange to selected priority industrial establishments for the importation of raw materials and spare parts. There was also a relaxation of price controls which resulted in an improvement in the business environment in general in the country. With more than half of the country's manufacturing activity located in GAMA, the area naturally benefited from these policy measures.

#### 2.2.1.2 Performance of the Formal Manufacturing Sector

##### (a) Growth

The result of the various recovery measures has been an average annual growth of 7.5% between 1986 and 1990 in the industrial sector as a whole. The share of the industrial sector in total GDP has been between 13 to 14% over the period of 1986 to 1990.

As indicated in Table 2.11 on production in selected industries, actual output has been on the increase since 1984. Wheat flour production rose from 39,590 tonnes in 1984 to 92,215 in 1988. Beer output reached 61.4 million litres in 1988 from a 1984 production level of 45.2 million litres while margarine production rose from 527 tonnes in 1984 to 3,205 tonnes in 1988.

**Table 2.11 Production of Selected Manufacturing Commodities 1984-1988**  
(Thousand tonnes unless otherwise stated)

Industry	1984	1985	1986	1987	1988
Wheat flour	39.5	45.3	62.8	71.4	92.2
Beer (million litres)	45.2	42.9	54.6	58.9	61.4
Cigarettes (million sticks)	2.0	1.9	1.8	1.7	1.8
Cloth (million metres)	10.3	12.6	15.2	19.2	22.7
Margarine	0.5	0.9	1.0	2.3	3.2
Petrol	172.0	216.0	200.0	154.7	142.4
Cement	235.0	356.0	219.0	294.4	412.1
Iron Rods	1.9	3.4	2.8	3.1	1.3
Milk (million litres)	11.0	14.6	7.7	23.4	27.5

Source: *Statistical Service Quarterly Digest of Statistics*  
March 1990.

### (b) Employment

The manufacturing sector is the third largest employer in the country. In 1984, the sector accounted for 10.9% of the total 5.4 million workers in the country. In GAMA employment in the manufacturing sector in 1984 was 104,000 representing 19.2% of total employment in the area and accounted for 18% of total manufacturing sector employment in the country.

### (c) Capacity Utilization

Available data on capacity utilization in the sector indicates that, for medium and large-scale establishments, installed capacity utilization rose from 18% in 1984 to 40% in 1988. The most efficient of the industries were the wood processing firms where utilization rose from 28% in 1984 to 70% in 1988. This group is followed by the tobacco and beverage industry which recorded a 58% rate of installed capacity utilization in 1988 from a low rate of 19.5% in 1984. The food processing sub-sector also showed an increased rate of utilization from 22.9% in 1984 to 60% in 1988.

Between 1986 and 1989, the Ghana Investments Centre approved a total of 513 private sector projects for the entire country except in the mining sector. The total proposed investment for all these projects was \$1,116.3 million. More than half of all the projects approved were located in the Greater Accra Region. In 1989, of the 117 projects approved in the country by the Centre, 67 were for the Greater Accra Region alone. The 513 projects approved by the Centre between 1986 and 1989 had 371 projects in the manufacturing sector alone. Total proposed investment for the manufacturing sector projects was \$747 million which represented 66.9% of proposed investment on all approved projects between 1986 and 1989.

## 2.2.1.3 Problems

In spite of the policy measures initiated under the ERP, a number of constraints still hamper the recovery of the manufacturing sector. Major among these problems are:

### (a) Capacity Utilization

Capacity utilization has been fluctuating in most manufacturing establishments. This is a direct result of inaccessibility to foreign exchange.

**(b) Inadequate Credit**

There is also the problem of inadequate credit from the financial institutions because of high interest rates.

**(c) High Taxes**

The level and administration of taxes tends to limit the ability of industrial enterprises to generate sufficient cash to meet working capital requirements. As a result most enterprises are in distress and cannot afford to pay back loans obtained from the banks.

**(d) Trade Liberalization Policies**

There is also the problem of competition from imported commodities which local factories are capable of producing and are indeed producing already.

**(e) Obsolete Equipment**

Most of the machines and equipment of the manufacturing enterprises are old and obsolete and therefore make their operations uncompetitive. These equipments need complete replacement.

**(f) Raw Materials**

Apart from the obsolete nature of the machines and equipment, the sector also depends on imported raw materials for its operations. As a result of the high cost of foreign exchange, most establishments are unable to obtain sufficient raw materials for their operations.

**2.2.1.4 Objectives of the Formal Manufacturing Sector**

- (a) Promote, in line with government industrial policy, growth in the manufacturing sector of the GAMA economy.
- (b) Generate employment in GAMA from the manufacturing sector.
- (c) Continue to make available through the Industrial Adjustment Credit foreign exchange for the rehabilitation and importation of raw materials by efficient industries.
- (d) Encourage exports from the manufacturing sector by providing incentives and enforcing quality control measures in the sector.
- (e) Encourage the use of local raw materials by creating a linkage with other sectors especially the agricultural sector.
- (f) Streamline the administration of taxes to enable efficient industries to generate sufficient working capital.
- (g) Review trade liberalization policies that pose serious competition to local efficient industries.

**2.2.1.5 Strategies of the Formal Manufacturing sector**

In line with overall national policies and strategies for the manufacturing sector, the following policy measures and strategies will be adopted during the plan period in GAMA:

- (i) streamline and focus attention only on those enterprises that are viable and sustainable over time;
- (ii) discourage government participation in industry;
- (iii) develop the small and medium-scale sub-sector as the prime mover of industrial growth;
- (iv) develop a strong private sector as the back bone of the country's industrial capacities and entrepreneurial capabilities;
- (v) develop local raw material base for existing industries;
- (vi) promote agro-based industries to process agricultural raw materials;
- (vii) develop the export of non-traditional products from the manufacturing sector.
- (viii) develop and utilize female manpower for integration in industry.

### 2.2.1.6 Formal Sector Manufacturing Production Targets

In view of the various policy measures and strategies outlined for the development of the manufacturing sector of GAMA, production targets or projections have been made for a selected group of products manufactured in GAMA. These projections are restricted to enterprises in the medium and large-scale manufacturing industries for which data is available. Increased production in the selected enterprises is to stimulate activity in the informal manufacturing sector in GAMA in terms of employment and incomes. For example cement production in 1997 is projected to reach 701 thousand tonnes from a 1993 production level of 537 thousand.

The production of iron rods will also rise from 1.8 million tonnes in 1993 to 2.3 million tonnes in 1997. The expansion planned for the building industry in GAMA during the plan period should make the projected production targets in cement and iron rods stimulate employment of artisans such as masons, carpenters, plumbers, painters, electricians, etc from the informal sector. Wheat flour production is expected to increase from 124,805 tonnes in 1993 to 163,592 tonnes in 1997. This production target should also stimulate increased employment in the bakery industry of the small-scale informal manufacturing sector.

Overall, manufacturing sector in GAMA is expected to grow at an annual rate of 7% during the plan period. The production targets for a selected items are outlined in Table 2.12.

**Table 2.12 Selected Manufacturing Production Targets - 1990-1997**

Product	Unit	1993	1994	1995	1996	1997
WheatFlour	Tonnes	124,805	133,541	142,888	152,890	163,592
Beer	Million Litres	80,481	86,114	92,114	98,590	105,491
Cigarettes	Million Sticks	2,398	2,565	2,744	2,936	3,144
Cloth	Million Metres	29,754	31,836	34,064	36,448	38,999
Margarine	Tonnes	4,199	4,492	4,806	5,142	5,501

<b>Guardian Soap</b>	<b>Tonnes</b>	<b>41,986</b>	<b>44,925</b>	<b>48,069</b>	<b>5,433</b>	<b>55,033</b>
<b>Laundry Soap</b>	<b>Tonnes</b>	<b>3,98</b>	<b>4,259</b>	<b>4,557</b>	<b>4,875</b>	<b>5,216</b>
<b>Cement</b>	<b>Thousand Tonnes</b>	<b>537</b>	<b>574</b>	<b>614</b>	<b>656</b>	<b>701</b>
<b>Iron Rods</b>	<b>Tonnes</b>	<b>1,751,353</b>	<b>1,873,947</b>	<b>2,005,123</b>	<b>2,145,481</b>	<b>2,295,664</b>
<b>Petrol</b>	<b>Thousand Tonnes</b>	<b>186,656</b>	<b>199,721</b>	<b>213,701</b>	<b>228,660</b>	<b>244,666</b>

## 2.2.2 Informal Sector

### 2.2.2.1 Characteristics of Small-scale Informal Sector

The popular view of Informal sector activities is that they are primarily those of petty traders, street hawkers, shoeshine boys and other groups "under employed" on the streets of the big towns and cities. Evidence gathered from various studies suggests that the bulk of employment in the informal sector far from being only marginally productive, is economically efficient and profit making, though small in scale and limited by simple technologies, little capital and lack of links with the other 'formal' sector.

Within the informal sector are employed a variety of carpenters, masons, tailors and other tradesmen as well as taxi-drivers and 'trotro' drivers, offering virtually the full range of basic skills needed to provide goods and services for a large though often poor sections of the population. The informal sector in GAMA can be categorised in three broad groups; manufacturing business, services, hawkers and retail traders.

It is estimated that 92% of organised urban industrial establishments are small-scale employing between 78 to 85% of total manufacturing labour in GAMA. Below is a grouping of the informal sector in GAMA:

(1) Agro-based industries such as bakery, corn milling, fish smoking, chop bars, slaughtering, soap making, distilling and blending etc. This group is dominated by units such as bakeries, chop bars, cornmill and vegetable oil producers. Together they constitute about 65 to 70% of all units in the agro-based industries in GAMA. Even among this group of industries, bread making dominates and generates quite some employment and income for women in GAMA.

(2) Garment and leather industries such as tailoring and dressmaking, shoe making and repair, etc; The most important unit in this group is tailoring which depends entirely on imported inputs. Together dressmaking, shoe-making and tailoring constitute about 80 to 90% of the units in this group of industries. Since the trade liberalization policy, there is a steep competition from imported used clothings.

(3) Saw milling and wood products industries such as carpentry producing items like furniture, beds, coffins, windows, doors frames, door, etc. The bulk of activity in this group of industries comes from the carpentry sub-sector which depends entirely on domestic source of wood supply except imported items such as polish, staining liquid, locks and fittings.

(4) Metal craft industries such as black-smithing, gold-smithing, other metal work units producing items like door locks, metal furniture, wheel barrows, metal boxes (trunk making), barrels for water storage, etc; This sub-sector has the potential for rapid expansion and offers opportunity for employment especially for the younger educated population in GAMA. The development of a foundry in GAMA could enhance the expansion of the sub-sector.

(5) Repair and related service industries such as motor repair works, footwear repair, watch repairs, television and radio repairs, vulcanizing, electrical repair, bicycle and motor cycle repair. This is an important segment of the economy of GAMA because it plays an important role in the transport sector by helping to maintain the fleet of vehicles in the area and several other plants and equipments operating in GAMA. The sub-sector is dominated by mechanical motor workshops, auto-electrical workshops, auto-body works, welding and spraying which provide wage employment and apprenticeship.

(6) Diversified Service Industries such as plumbing, masonry, painting, electrical wiring, hairdressing, photography, laundry, recording, etc. This sub-sector forms a vital part of the urban economy of GAMA and is a principal source of employment, apprenticeship and income. In the construction and building industry carpenters, masons, plumbers, painters and electricians operate on a sort of freelance basis as a source of employment and income. They are principal developers of private houses.

### 2.2.2.2 Problems of Small-scale Informal Sector

The small-scale informal is plagued by several problems. The important ones are lack of:

- (a) recognition of their contribution to the local economy by the various assemblies.
- (b) security of tenure for land and building in which they operate leading to periodic harassment and demolition of such structures and buildings by city authorities. This is the most important need felt by informal sector operators.
- (c) Infrastructure facilities like electricity, water supply, roads and sanitation services.
- (d) finance to start operations in the form of workshop, tools, and equipment. The only source of finance is previous savings during apprenticeship.
- (e) working capital to purchase in bulk raw materials, spare parts etc. direct from producers.
- (f) cooperative associations to purchase raw materials in bulk with discount for distribution among members.
- (g) book-keeping on their business operational finances which are often combined with social expenses.
- (h) prompt payment by customers to the small-scale operators for work done.
- (i) common facilities such as a central foundry in GAMA for use by metal industry operators and other related operators.
- (j) industrial estates and standard workshops in GAMA to accommodate informal sector operators.
- (k) training programme to upgrade the skills of informal sector operators.

### 2.2.2.3 Objectives for Small-scale Informal Sector development

In view of the employment generating role of the small-scale informal manufacturing sector in GAMA, the following policy objectives will guide the development of the sector during the plan period:

- (a) Recognise the contribution of the informal sector to the urban economy.
- (b) Provide support and enabling environment for the growth and development of the sector.

- (c) Regulate, monitor, and assist in the planning and implementation of policies relating to the activities of the sector.
- (d) Evolve physical planning policies and regulations that give legitimacy to the operations of the sector and thus give them security of tenure.
- (e) Encourage the formation of cooperative associations within the sector and strengthen the growth of existing ones.
- (f) Organize credit and purchases of raw materials and spare-parts through the respective cooperative associations.
- (g) Establish, in consultation with the respective cooperative associations, industrial estates and standard workshops and equipments to accommodate the various branches of small-scale manufacturers.
- (h) Organize in cooperation with the National Board of Small-Scale Industries training programmes in skill upgrading and simple book-keeping and business management.
- (i) Encourage the emergence of a strong and efficient group of entrepreneurs from the informal manufacturing sector.

#### **2.2.2.4 Strategies for the Small-scale Informal Sector Development**

The following strategies are proposed for the growth and development of the informal sector.

##### **(a) Recognition of the informal sector.**

The role of metropolitan management in promoting employment and improving incomes is possibly the least understood - not to mention the least recognised of all the functions of metropolitan planning and management.

An educational seminar should be organised by the three Assemblies in GAMA, National Board for Small Scale Industries (NBSSI), the various Associations of Small scale informal operators, credit unions, Cooperative Associations, Town and Country Planning Department, etc. The objective of the seminar will be to have open discussion on the role of the informal sector in the urban economy and how it can be supported to grow. It will basically be an educational seminar for all the participants particularly the local government (assemblies) officials who are constantly harassing the informal sector operators.

##### **(b) Create a Department for the Informal Sector.**

The Assemblies should set up Department to be responsible for the informal sector. The task of the Department will be to evolve policies, support strategies and create an enabling environment for the growth and development of the sector. It will also regulate, monitor and collect data on the operations of the sector. All these should be done in close collaboration with the NBSSI and other institutions that are involved in the work of the informal sector.

The area of intervention by the Department will include advice on provision of land and security of tenure, access to credit and technical assistance, skills improvement training programmes.

##### **(c) Flexible planning standards and regulations.**

The Town and Country Planning Department should begin to make provisions for zoning for land for the operators in the informal sector. Planning laws should be made flexible to allow for home based economic

activities. In the CBD, areas should be created for grouping various categories of operators instead of allowing them to take over the pavements.

### 2.2.3 GAMA Public Sector Manufacturing Projects

The Public Investment Programme has eight projects outlined for GAMA in the manufacturing sector for the period 1991 to 1993. Three of these projects, although new, are expansions to existing factories such as the Kool Bottling Factory, Fluorescent Tubes Factory and the Nicom Chemical and Paint factory. These projects were started in 1991 fiscal year. The remaining five projects are on-going, some having been started as far back as 1986, like the Development of Small-scale Industries and the rehabilitation projects of the Tema Food Complex. The bulk of these projects are scheduled to be completed in 1993. Only the Tema Food Complex and the Promotion of Non-Traditional Exports Project are expected to be completed by 1995. Total planned expenditure on the eight manufacturing projects for GAMA is estimated at 34,357 million cedis during the period 1991 and 1995. About 74% of the total planned expenditure is in foreign exchange. Between 1993 and 1995, a total of 18,758 million cedis will be spent on public sector development projects. Table 2.13 shows the public sector manufacturing projects for GAMA.

Table 2.13 Public Sector Investment Schedule for Manufacturing Projects

PROJECTS	Planned Expenditure (Million Cedis)											
	1993		1994		1995		1996		1997		Project Total	
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC Total
Kool Bottling Factory(N)	389	80	480	87	-	-	-	-	-	-	869	167 1,036
Nicom Chemical and Paint Factory(N)	56	14	-	-	-	-	-	-	-	-	56	14 70
Tema Food Complex (O)	1042	904	738	946	738	946	-	-	-	-	2,518	2,796 5,314
GIHOC Foundary (O)	189	157	-	-	-	-	-	-	-	-	189	157 346
Promotion of Non-Traditional Exports (O)	4,000	384	3,500	54	3,500	54	-	-	-	-	11,000	492 11,492
Development of Small-Scale Industries (O)	62	216	-	222	-	-	-	-	-	-	62	438 500
<b>Total</b>	<b>5,738</b>	<b>1,755</b>	<b>4,718</b>	<b>1,309</b>	<b>4,238</b>	<b>1,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>14,694</b>	<b>4,064 18,758</b>



## 2.2.4 Private Sector Manufacturing Projects

Developments in the private sector manufacturing industries, both formal and informal, can only be in response to the macro-economic regime that the economic recovery programme, initiated in 1983, has been attempting to establish. In order to discern what the likely effects of these policy measures and incentives will be on the private manufacturing sector in GAMA during the plan period, an outline is made of selected approved private sector projects from the Ghana Investments Centre, the Ministry of Industries Science and Technology and the financial institutions. Table 2.14 shows the various projects.

**Table 2.14 Selected Approved Private Sector Manufacturing Projects 1987-1989**

Area of Activity	Location	Product
Wood and Wood Products	Tema	Wood Toys and Utensils
	Accra	CKD Furniture Components
	Accra-Dansoman	Cane Products
	Bubuashie-Accra	Wooden Handicrafts
	Tema	Furniture
	Dansoman-Accra	Wooden Clogs
	Accra	Furniture
	Adenta-Accra	Antique Furniture
	Jamestown-Accra	Wooden Fishing
	Accra	Panel Door and Window Frames
	Accra	Furniture & Wooden Clogs
	Achimota-Accra	Panel Door & Furniture Cases
	Adenta-Accra	CKD Furniture, Profile Bonds
	Accra	Furniture Components
	Adenta-Accra	CKD Furniture Parts
Chemical and Chemical Products	Nungua-Accra	Wood Carvings
	Welja-Accra	CKD Profile Boards
	Tema	Argon, Oxygen, Nitrogen
	Achimota-Accra	Oxygen gas
	Madina-Accra	Soap
	Odorkor-Accra	Soap
	Accra	Emulsion Paint
	Madina Accra	Cosmetics and Soap
	Accra	Shampoo, soap, hair products
	Accra	Products of Oxygen
	Afiencya-Tema	" "
	Tema	Feed Concentrates
	Accra	Paper & Paper Products
	Accra	Carton Boxes
	Accra	Paper Cartons
Electrical Products	Accra	Variety of Paper Products
	Motorway-Accra	Corrugated Paper Products
	Accra	Corrugated Paper Boxes
	Accra	Household Electrical Appliances
	Accra	" "

**Electrical Products**

Darkuman-Accra  
 Frafraha-Accra  
 Accra

**Electrical Fittings**

" Equipment

**Leather Products**

Tema

T.V. Antena

**Metalware Products**

Accra

Golf Gloves and Bags, Ropes

**Aluminium Products**

Accra

Tarpoline and Ropes

**Motor Parts**

Tema

Enamel Household and Utensils

**Metal Products**

Accra

Aluminium Sliding Doors & Windows

**Aluminium Products**

Accra

Automobile Radiators

**Plastic Bottles**

Accra

Cutlasses

Motorway-Accra

Aluminium Cooking Pans Utensils

Achimota-Accra

Plastic Bottles

Dome-Accra

Polythene Sheets

Odorkor-Accra

Bags

Motorway-Accra

---

*Source: Ghana Investments Centre 1991.*

## CHAPTER 3

# URBAN DEVELOPMENT

### 3.1 Land

#### 3.1.1 Introduction

The overall land use requirements for GAMA is based on population growth rate of 4.4% per annum, estimated to reach nearly 2.7 million by 2000 and just over 4.0 million by 2010. There will be about 45,9000 more people living in GAMA between 1993 and 1997. This will require nearly 10,340 ha. of land, including roads based on gross density of 90 persons per hectare by 2010. This in turn, is based on the following land allocation system: low income plot-size 600m<sup>2</sup> with 250p/h; medium income 860m<sup>2</sup> with 175p/ha and high income 1500m<sup>2</sup> with 100p/ha.

Table 3.1 shows the land use requirements for various socio economic activities between 1990 and 2010. Over 51 percent of the total urban land in 2010 will be under residential use, compared with 54% in 2000 and 63% in 1990. This decrease in percentage distribution between 1990 and 2010 is mainly due to the increasing density in land use especially in housing. The second largest urban land use will be for open space (recreation), increasing from 2,000 to 12,500 ha. in 20 years, growing at a rate of 5% a year. The total urban land will increase by nearly 39,600 ha between 1990 and 2010. The total rural land will decrease from 110,880 ha or 72.9% in 1990 to only 70,370ha. (or 46.3%) in 2010.

**Table 3.1 Land Use Requirements 1990 - 2010 in Hectares**

Types of Land Use	1990	2000	2010
Commercial	1,650	2,050	2,250
Civic & Cultural	130	150	180
Institutional/Special Uses	4,280	5,550	6,980
Residential	26,350	33,380	41,940
Industrial	2,690	5,190	7,690
Defence	1,640	1,640	1,640
Major Roads	1,460	1,950	7,200
Transportation (Terminals)	920	920	1,200
Open Space/Recreation	2,000	11,250	12,500
Urban Total	41,120	62,080	81,630
Rural Total	110,880	89,920	70,370
GAMA Total	152,000	152,000	152,000

From Table 3.2 the largest land increase will be for recreational purposes, 4,625 hectares or nearly 44% of the total additional requirement during the Plan period compared with 3,515 ha for residential land. During the plan period a total of 10,480 hectares of additional land will be required for the various uses, including: major roads and industries.

Table 3.2 FYDP Land Requirements (ha)

	1993	1997	Additional Land Requirement
Commercial	1,770	1,970	200
Civic & Cultural	136	146	10
Institutional/Special Uses	4,661	5,296	635
Residential	28,459	31,974	3,515
Industrial	3,440	4,690	1,200
Defence	1,640	1,640	-
Major Roads	1,607	1,852	245
Transportation (Terminals)	920	920	-
Open Space/Recreational	4,775	9,400	4,625
<b>Total Urban Land</b>	<b>47,408</b>	<b>57,888</b>	<b>10,480</b>
<b>Total Rural Land</b>	<b>104,592</b>	<b>94,112</b>	
<b>Total GAMA</b>	<b>152,000</b>	<b>152,000</b>	

### 3.1.2 Urban Land Policy

Due to the variety of land holding systems in GAMA, there is no Government policy relating to land supply and delivery. In order to bring some order into the system, various governments have resorted to the use of legislative measures. The Conveyancing Decree NRCD.175, for example, provided that every grant by a stool/family should be in writing otherwise such a grant was deemed null and void. Furthermore, the Administration of Lands Act, 1962 (Act 123) contains provisions which provide that the concurrence of government is a necessary condition for the validation of certain types of disposal of land by stools. Although, the above legislation are examples of attempts by Government to curtail confusion in disposal of lands by stools/families and remove some of the obstacles in the land delivery system in GAMA, they have not been adequate enough to address the major causes of the deficiencies in the land delivery system in GAMA.

### 3.1.3 Problems

There are two types of problems restricting the availability of land in GAMA: (1) physical and (2) legal/institutional constraints.

#### (1) Physical Constraints

These relate to various physical elements restricting the availability and/or development of land. These are:

##### (a) Physical Constraints

The drainage ways and associated wetlands are probably the most dominant features shaping the present and future urban form. The study area is intersected by numerous rivers and streams usually flowing north-south with their outlets either into the lagoons or directly into the sea. These features serve as boundaries between different development areas, though reclamation has altered the natural form to some degree, and can be anticipated to continue to do so in the future. Associated with these drainage systems are some flood prone areas which have to be kept free from urban development. The presently non-urbanised area between Accra and Tema has numerous water courses and wetlands which impose some restrictions on intensive urban development.

Development is also constrained on the north-west by hills and ridges starting right from the coast west of the Densu river delta and extending to the north-east up to Dodowa and beyond. The presence of these hills imposes a basic line in planning which must be maintained and followed in future.

Similarly, the area has several dams and water reservoirs which have to be maintained for amenity and water supply. Preservation of open land around such water bodies and their catchment areas is also necessary.

#### **(b) Infrastructure Services**

The existing transport system in the Metropolitan Area is a dominant structural feature due not only to the land areas occupied by the various elements, but due to the relationship of these facilities to abutting development. The road network in Accra has limited capacity which discourages an intense urban development. Similarly, the limited capacity of other engineering services like water supply, sewerage and drainage, and telecommunications are a major constraint to urban expansion.

The railway system is central to the development of the internal core by virtue of its location rather than its service. Its principal service is related to the port which is located in Tema. It has therefore a great potential as a mass transit system within the GAMA, especially since there is an existing right-of-way. The railway however affect the road system and involves protecting pedestrians and residential areas.

The Kotoka International Airport is the other major transport infrastructure influencing land structure. The airport at its present location not only affects its environs by generating excessive noise levels, but its size poses a major constraint to the continuity of services upon which it places a major demand.

#### **(c) Military and Security Zones**

A large military enclave between Accra and Tema in continuation with the Airport and several other security areas with business and residential areas not only form effective barriers to the integration of urban development, but also occupies some of the most valuable land suitable for urban development.

#### **(d) Large Industrial Uses**

In Accra, industrial uses tend to occur in three major concentrations: the Ring Road West Industrial Area, the northern outskirts industrial sector along the Accra-Nsawam road outlet; and the south Motorway Industrial Zone. Some industries also occur near Dzorwulu and Odaw, discharging their effluent into the Odaw-Korle lagoon system.

In Tema, a wide area to the east and south of the main residential areas is allocated as the main industrial zone. In terms of the distribution of industries in the Metropolitan Area, the Northern and Southern motorway Industrial Zones in Accra, and the main industrial zone of Tema to the east seem well sited in relation to residential areas and the wind direction. It is essential that residential development be prevented in the areas liable to industrial pollution. This is already happening in west Industrial Area in the Korle catchment which is surrounded by residential developments which are in the air pollution zone of the industrial area.

#### **(e) Open space and Green Areas**

Open spaces and green areas are widely scattered portions of land, of various sizes, which are still free from any building activity. Some like the one near Achimota are classified as forest reserves, others are a mixture of natural vegetation and crop farming. Some large spaces are used even for refuse dumping; one such area of interest is the space along the Korle Lagoon at Korle-Bu.

Within the Metropolitan Area, all such open areas comprising hills, ridges and reserves, together with river corridors, lagoons and foreshores should be preserved. They can be exploited to provide an open space system having not only a pleasing and unifying effect on the metropolitan landscape, but would also provide a diverse recreational, cultural and ecological resource. The reservation and management of flood plains and

the major drainage channels would also provide a stormwater drainage system within the urban areas. These systems however represent significant constraints on the configuration of metropolitan development and on land supply.

#### (f) Lack of Cadastral Map

Base maps or air sheets produced by Survey Department are outdated; there are also no adequate facilities for processing the aerial photographs when available, and for producing controlled photo maps. The result is that it is difficult to get an up to date data on the status of urban development in terms of infrastructure services, housing stock etc.

### (2) Institutional Constraints

(a) **Litigation:** The numerous land cases in the courts and the long delays associated with such cases is one of the shortcomings of the land delivery system.

(b) **Regularisation of Encroachment:** Another constraint to development is the problem of sub-division plans bearing no relationship to town planning schemes. Landowners engage people to prepare some kind of layouts of their land and proceed to allocate the plots before a layout of the whole area is prepared by the Town and Country Planning Department and approval by the appropriate Planning Authority. The result is that when an authorized and approved layout is implemented there are serious conflicts which lead to haphazard, uncontrolled and unauthorised development.

(c) **Delay in Perfecting Title to Land:** Another fundamental issue is the root to title of land. The most common basis of proof to original title of Land in Accra, is long possession or occupation of the said Land. With the heavy reliance on oral evidence and traditional practices, and lack of proper recordings of facts and evidence, proof of title will always mean protracted litigation in court thus hampering the availability and security of tenure of land. Also, the institutional and administrative arrangement for regularising and perfecting titles are so varied, diverse and overlapping that it takes too long to regularise or perfect title to land. The delay is caused mainly by the multiplicity of agencies and the processes and procedures involved in perfecting title to land in Accra.

(d) **Undeveloped Land:** Large areas of undeveloped land within the urban area are held by individuals and institutions resulting in apparent shortage and high cost of land. These consist of land granted by stools and families and those lands granted by government. The State Housing Corporation for example has failed to fulfill the original purpose for which it was established and for which it needed large areas of land. In spite of this, the corporation still holds at least 1,660 ha. (4,100 acres) of land with 70% of this in Accra alone. Individuals have held on to their lands for speculative purposes being now aware of the almost astronomical rate of increase in land values.

### 3.1.4 Objectives of the Five Year Development Plan

- (1) To maintain adequate supply of land for orderly urban development;
- (2) To develop an efficient land management and land administration systems.
- (3) To reduce land litigation and freeze land speculation with escalating land costs.
- (4) To diminish land sterilization.

### 3.1.5 Strategies:

In order to make adequate land available for the socio-economic development programmes envisaged in the FYDP; the plan will:

(1) Invoke the Accra/Tema City Stool Lands (Vesting Order) (E.I. 108) of 1st September 1964, made under Section 7 of Act 123 of the Administration of Lands Act, 1962, by which all the stool lands within the area of authority of the Accra-Tema City Council was vested in the President in Trust.

The area referred to in E.I. 108 mentioned above is approximately the land south of the Accra-Tema motorway: see Plan at p.66 of Volume 1 - Context Report viz Land Subject to Dispute and/or Encroachment - 1991

Under the FYDP, the strategy will cover the entire area both north and south of the Accra-Tema Motorway and will include:

(a) Land under litigation and encroachment. There was in 1990 a total of 6,970 plots encroached, 6,662 plots under litigation, and 3,698 under both litigation and encroachment. Governmental actions under the Administration of Lands Act 1962 Act 123 can release a total of 17,330 plots of land which will be made available. These consists of 2317 in Accra, 3930 in Tema, and 11083 in Ga.

(b) Unencumbered lands. This process can release up to 27,506 plots of land, of which 2,492 are in Accra, 6,373 in Tema, and 18,641 in Ga districts.

(2) **Urban Consolidation:** This strategy focuses on land allocated to individuals who have not developed them. A total of 3,110 plots of land can be made available by urban consolidation.

(3) **Redevelopment of Less Dense Areas:** There are some areas of Accra where the residential density is extremely low (about 24p/ha) which need to be redeveloped at higher densities.

(4) **Zoning Land for Specific Purposes:** Any amount of land required for further development can be zoned and if necessary vested in government under Section 7 of the Administration of Lands Act, Act 123.

### 3.1.6 Cost of Land

*Cost components of the various landuse types for the plan period is as set here under:*

**Table 3.3 Cost Summary for Land**

(IN MILLION CEDIS)						
Types of landuse	1993	1994	1995	1996	1997	Total
Commercial	-	-	-	-	-	-
Civic & Cultural	139.1	143	147	151	155	73
Institutional/Special Uses	494	5,190	5,439	5,688	5,937	27,19
Residential	-	-	-	-	-	-
Industrial	-	-	-	-	-	-
Defence	-	-	-	-	-	-
Major Roads	-	-	-	-	-	-
Transportation	-	-	-	-	-	-
(Terminals)	-	-	-	-	-	-
Open Spaces/Recreation	3,875	28,500	33,125	37,750	42,375	165,62
<b>Total</b>	<b>28,955</b>	<b>33,833</b>	<b>38,711</b>	<b>43,589</b>	<b>48,467</b>	<b>193,55</b>

The public cost for land consists of only civic and cultural, institutional, and open spaces. This will cost about 193.5 billion cedis, of which 165.6 billion cedis or nearly 86% will go towards purchase of land for recreational

purposes. The residential, industrial and commercial land costs will be borne by the private sector. Land for roads and transportation terminals are included elsewhere.

## 3.2 Physical Planning

### 3.2.1 Problems

The problems associated with physical planning in GAMA are:

#### 1. Uncontrolled development

Lack of accurate planning schemes in many residential areas. Lack of a framework for controlling and guiding development which has resulted in sprawling peripheral development and development in flood prone areas.

#### 2. Inefficient provision of infrastructure

Many new residential areas have developed without infrastructure like good roads, water and electricity supply. Most of the old and depressed areas either lack these infrastructure or where they exist are over stretched. There is traffic congestion due to over concentration of activities in the Central Business District.

#### 3. Legal and Institutional Framework

The legal and institutional framework for plan preparation and implementation are rather weak. There is inadequate professional and specialist skills and logistic resources for planning, development and management of the growth of Accra.

### 3.2.2 Objectives

The broad aim of the structure plan is to provide a "framework for the planning and management of development in the Greater Accra Metropolitan Area". The objectives in support of the above goal for the five year development plan are stated as follows.

#### 1. Prepare a Structure plan for the Metropolitan area.

Prepare a structure plan which will set out the long term settlement pattern desired for the Metropolitan area, and initiate the preparation of local plans which are consistent with the long term structure plan. Revise planning standards for preparation of planning schemes which will then be used to review and prepare town planning schemes for all residential, business, industry and special development areas within the urban consolidation area.

#### 2. Ensure adequate provision of infrastructure to all developed areas.

Restrict development on land that is not well drained or subject to flooding. Approve development only in areas where infrastructure services are intended to be extended in the next five years. It is necessary to ensure all land earmarked for future community purposes and roads are demarcated and where necessary fenced. Initiate upgrading programmes which emphasise public participation and involvement in selected depressed and congested residential areas.



### **3. To decongest the CBD.**

Prepare a redevelopment and investment plan for the CBD and initiate steps to acquire and protect sites earmarked for sub regional business centres.

### **4. Skills improvement programme.**

Initiate a training programme for staff of Town and Country Planning Department in all fields of planning and management.

## **3.2.3 Development Strategies**

In the development of the structure plan it has been considered that maximum integration between new and existing development is essential. The general intent of the structure plan can only be achieved if the major landuse proposals are strictly followed. The specific details of the plan will evolve as detailed town planning schemes and plans of subdivision are prepared for newly developing areas. These broad landuses, the hills and ridges, the man made lakes, rivers and their flood plains, coastal lagoons, scenic and recreational resources and the metropolitan open space system should be protected in the next 5 years.

### **1. Preparation of Town Planning Schemes**

Existing residential areas will be managed by existing town planning schemes many of which will have to be upgraded. Many of the approved town planning schemes for parts of the metropolitan area bear no relationship to what has taken place on the ground. A programme will be initiated to use the current aerial photographs and maps to upgrade all existing town planning schemes. Separate planning standards and guidelines would be formulated for redevelopment, upgrading and infill development. The preparation of these plans will very much be coordinated with the programmes of all the other development and infrastructure provision agencies.

### **2. Improve development Control Mechanism.**

It is intended that much of the responsibility for development control will be given over to the area councils and the community leaders to ensure land for community facilities is protected and roads are not encroached upon.

A programme will be run by the Town and Country Planning Department to inform and advise communities and their leaders on how best to manage development in their areas. The community will be encouraged to be more involved in the preparation and implementation of programmes and projects in their areas.

### **3. Consolidate Motorway Industrial Area.**

Industrial location within the next five years should be directed to the industrial areas lying south and parallel to the Accra-Tema Motorway. The area is presently very much underutilised. It will also enable infrastructure facilities to be extended to the area in a more rational way. The use of this area needs to be carefully controlled.

### **4. Direction of growth and New Developments.**

The present situation of dispersed development on several fronts should be arrested and development concentrated in a few areas. New development would be directed to the following areas:

(a) Teshie-Nungua vacant area South of the motorway. Already the Sakumono housing project has formed the nucleus of this developing area.

(b) Extension of McCarthy Hill-Ofankor area to the limits of the structure plan. Steps should be taken to review and prepare comprehensive planning schemes for those areas far in advance.

#### 5. Decongest the CBD and acquire sites for Subregional centres

The CBD redevelopment and investment plan currently under preparation will form the basis for action in the CBD in the next five years and after.

The next level of service of shopping, commercial and financial centres would be geared to the provision of local population oriented services to meet the needs of urban populations of about 250-350,000. These centres are proposed at Madina, Ofankor, Amasaman, Teshie-Nungua and Ashiaman. Steps would be taken to acquire these five sites and plans for development prepared. The timber market is proposed to be relocated at Amasaman. This should be effected within the plan period.

#### 3.2.4 Cost Estimates

Cost estimates for physical planning for the next five years total 694 million cedis. Cost for provision of infrastructure upgrading and acquisition of sites are considered under the appropriate heading.

Table 3.4 Cost Estimates for physical planning in Millions of Cedis

	1993	1994	1995	1996	1997	Total
<b>Review Town Planning Schemes (100)</b>	100	100	120	120	130	570
<b>Acquisition sub-regional centres (5)</b>	15	44	10	-	-	69
<b>Training Programme</b>	12	12	15	15	18	72
<b>Public Education</b>	3	3	4	4	5	19
<b>Development Control</b>	5	5	7	7	9	33
<b>Total</b>	135	164	156	146	162	763

### 3.3 HOUSING

#### 3.3.1 Introduction

The delivery of housing at rates that would be adequate to meet the rapid growing population of GAMA - about 4.4% per annum - continues to be a major concern of government and the public at large. Efforts made in the past include:

- (a) Supply of building materials by central government agencies such as the Ministry of Works and Housing and the Regional administration.
- (b) Housing construction by state and parastatal organizations such as the Tema Development and State Housing Corporations, the Public Works Department and lately, the Social Security and National Insurance Trust (SSNIT). There have also been considerable housing development by corporate bodies like the UAC, CMB, the Ghana Airways Corporation and the Bank of Ghana for their workers. The bulk of the housing supply however, continues to be by individuals who produce about 66% of the total stock. Private sector organizations (GREDA) produce about 5.2% while Government contribution is about 15% and corporate bodies about 14%.
- (c) Housing Finance - by the Bank for Housing and Construction (BHC) and the First Ghana Building Society (FGBS) and lately the Home Finance Company (HFC).

In spite of above efforts, the housing problem continues to worsen with the years. It has been estimated that present housing stock in GAMA is 94,732 and this is growing at a rate of 1,000 houses or 1.06% per annum. At the present population growth rate of 4.4% per annum, it is estimated that the delivery rate should reach 3.2% per annum or treble to forestall the present 10% per annum (estimated) growth rate of the backlog.

#### 3.3.2 Policy

Current national housing policy shifts emphasis from direct state involvement in housing construction to that of a facilitator of housing. This policy shift is designed to ensure that limited national resources for housing are spread over a broader section of the population. This may be achieved through the removal of bottlenecks in the delivery system and the creation of conditions for affordable and cost-effective housing development. Consequently, Government will no longer pay subventions to State housing construction corporations for housing development. Also some of the housing stock currently in state and parastatal ownership may be divested.

Government's role will be to outline strategies for increasing access to land and ensuring security of tenure, providing infrastructure, technical advice to the housing constructing public, reforming planning and building standards, institutional development and/or strengthening, manpower development and the encouragement of the production and use of local building materials.

#### 3.3.3 Constraints

##### (a) Population Increase and Implications for housing development.

The projected population increase for GAMA for the period 1993- 1997 is 459,000. This will require the supply of additional 30,000 dwelling units. In addition, the housing backlog of nearly 20,000 units will have to be recovered as it would otherwise increase to 37,440 units by 1997. (see Table 3.5) Thus a total of 50,000 housing units and 4,010 hectares of land or a delivery rate of 10,000 housing units and 802 hectares of land per annum must be attained during the plan period to keep housing conditions at acceptable levels. Owing to a number of problems, the attainment of these levels will be difficult. The plan will meet the needs of the increased population and also recover a third or 33% of the backlog during the five-year period. This will mean the provision of 36,200 housing units and 3,076 hectares of land. (See Table 3.6)

**Table 3.5 Projected Population, Housing Needs and Deficits for GAMA (1990 - 2010)**

Year	Pop'n in 000's	Estimated Need	Projected Stock	Deficit	Total Needs from 1990 base year
1990	1,708	113,867	94,732	19,135	19,135
1995	2,126	141,733	104,591	37,142	47,001
2000	2,650	176,667	155,478	61,189	81,935
2005	3,289	219,267	127,497	91,770	124,535
2010	4,065	271,000	140,766	130,234	176,268

*Source: Based on Demographic Study and Housing Needs Assessment Report, APDP (1990)*

**(b) High Cost of Building Materials** - All the major building materials, namely: cement, iron rods, aluminium/asbestos roofing sheets are either imported whole or in part in the form of essential inputs. Consequently, their supply is limited by the country's weak foreign exchange situation thus creating shortages at times. Prices of these items are prohibitive and there are no substitutes.

**(c) Inappropriate Building Design and Construction:** Generally, building designs do not facilitate the construction of houses that are compact. They also do not allow for incremental housing development whereby developers may carry out extensions to their buildings as and when their incomes improve. Furthermore, building construction methods do not permit flexibility in the use of floor space in a house. Each room or enclosed area is purpose built and partition walls of permanent construction. It is not possible to adjust, for instance, the position of the partition wall separating a kitchen from the dining hall and use the space thus created for other purposes. Buildings are also usually over designed and unnecessarily expensive.

**(d) Poor Infrastructural Services Delivery:** It is estimated that the cost of infrastructural service delivery at the periphery is about 2.5 times the cost of inner city areas. Delivery agencies have consequently found it increasingly difficult to extend services to the periphery. If at all, services delivery have not been co-ordinated by the agencies and are rather fragmented with most peripheral development taking place without infrastructural support.

**(e) Weak Institutional Mechanisms:** The institutional mechanisms for housing delivery in GAMA have been constrained by lack of co-ordination, management, and financial problems. It is apparent that there have not been any co-ordinated plan and strategies for sustained housing delivery in GAMA.

**(f) Shortage of Housing Finance:** There is poor delivery of finance for housing because of high interest rates, unavailability of long-term development funds and low saving rates by a majority of GAMA's population. Financial institutions such as BHC are further constrained by lending ceilings imposed by the Central Bank.

**(g) Inefficient Land Delivery:** The supply of land for housing development is constrained by an inefficient land delivery system, insecure titles, encroachments, disputed claims and litigations, lengthy documentation processes and institutional inefficiencies. At the moment, there is no mechanism which ensures the systematic supply of land by quantity and location unto the housing market in response to demand.

### 3.3.5 Objectives

*During the plan period, the following objectives will be pursued:*

- (a) Make efficient use of residential land for housing.
- (b) Increase the supply and choice of housing.
- (c) Improve building and material technology.
- (d) Increase access to housing finance.
- (e) Improve housing conditions in depressed areas.
- (f) Enhance construction capacity and capability.
- (g) Promote housing maintenance culture.

**Table 3.6 Housing Production Targets by Income Groups in GAMA (1993 - 1997)**

Year	Low Income		Middle Income		High Income	
	# of Units	Land Req'd (ha)	# of Units	Land Req'd (ha)	# of Units	Land Req'd (ha)
1993	3,911	259	2,157	204	674	111
1994	4,027	266	2,221	209	694	114
1995	4,181	277	2,307	218	720	119
1996	4,375	289	2,413	228	754	124
1,997	4,491	297	2,477	233	774	128
<b>Total</b>	<b>20,985</b>	<b>1,388</b>	<b>11,575</b>	<b>1,092</b>	<b>3,616</b>	<b>596</b>

### 3.3.6 Strategies

In order to deal with the rising housing needs and reduce by a third the housing backlog during the plan period the following strategies will be adopted to lay the foundations for solving the identified problems:

(a) To make efficient use of residential land in GAMA through:

(i) **Redevelopment:** The plan envisages a more intensive use of residential land with net residential density of 10 dwellings per hectare (minimum) for GAMA. During the plan period low density inner city areas such as Kanda, Ridge and Cantonments which have run-down government bungalows occupying them, will be replanned and redeveloped with a view to increasing density.

(ii) **Infilling:** Within the inner city and newly developing areas of GAMA, there are some areas with good housing but underutilised land (such as Ridge, Cantonments, etc). The infilling strategy ensures that plots are created out of over provided and/or underutilised lands for new housing development. An estimated 800 plots or 200 hectares of land may be available for infill and redevelopment.

(iii) **New Development:** This strategy will facilitate the release of land from newly planned but undeveloped areas for housing development. Land releases will be in areas under public or private ownership where land acquisition processes have been completed or titles of land owners are secure with no litigations and encroachments and where there are already approved planning schemes with supporting funds for implementation. Typical among these are the SIC acquisition at Christian Village, REDCO and SHC lands at Adenta, Ashongman (Housing) Estates near Kwabenya and GREDA land at Welja; also Mallam and Gbawe planned areas. There are about 30,000 plots in GAMA which fall under this category.

(iv) **Phased Release of Land:** This strategy ensures that land is released on-to the housing land market from the land bank and private land owners annually for housing development by the various income groups according to demand and need. The location and size of such lands (or number of plots involved) under each income group will always be specified. Approved detailed planning schemes will form the basis of such releases. This strategy will be facilitated by sites and services schemes - (b) (i).

#### **(b) Improve the supply and choice of housing**

This will be achieved by:

(i) **Site and Services Projects:** The availability of serviced land for housing development remains one of the means by which housing delivery by type and location may be greatly enhanced. Secondly, it offers a unique opportunity for the public sector to spread scarce resources over a wider section of the community and to facilitate the application of the principle of cross subsidies. Furthermore provided corporate bodies such as SHC, SSNIT, TDC, GREDA and landlords target the right markets, sites and services can facilitate realization of quicker returns on investment. The long-term GAMA Strategic Plan identifies sites and services as part of the short-term strategy to provide housing land for the middle and upper income groups.

The Strategy will facilitate the extension of infrastructure to selected infill and/or newly planned areas where there are no developments. These include areas like Adenta (SHC) Communities 3, 11, 13, 14 (Tema, TDC), Mallam/Gbawe (Ga) and Okpol Gonno. Serviced land will be released at economic rates to ensure cost recovery and replication of similar schemes in other areas in GAMA.

(ii) **Sites only and Minimum Shelter Projects:** Based on the principle of affordability, this strategy is the most appropriate for allowing entrance of the low income into the home ownership market. Sites identified for low income housing will be provided with graded roads only and the plots set out with the proviso that other infrastructure services will be provided as the area gets developed. This is to ensure that plots get developed by allottees and not sold to middle income earners. Planning approvals will be required for foundation and roof plans only. These plans should be capable of extension in the future. Allottees will then be permitted to use the materials they can afford for walling, roofing etc. to be improved later when their economic circumstances improve. The roof plan approval ensures that the materials used are not offensive to the aesthetics of the area.

(iii) **Increasing the Stock of Rental Accommodation:** This strategy will facilitate the addition of one or two bedrooms to existing buildings for renting and/or occupation by extended family members. It has been estimated that there are about 25,000 houses in the inner fringe areas where such extensions can be carried out. Landlords will be encouraged through public education to make the additions to their houses during the plan period.

The successful implementation of this strategy depends however on reformation of planning standards and building regulations and the availability of mortgage from the HFC. The strategy is quite feasible and remains the least risky way of adding to the stock in the short-run. Houses to which extensions can be made may be used as collateral security for credit. The HFC and the public attention will be called to this area to ensure adequate support.

(iv) **Completion of Uncompleted Houses:** It has been estimated that there are about 8,000 (6684 in 1986) uncompleted houses in GAMA. Government has recognized their early completion as one way of providing short-term solution to the housing problem. In this wise, this strategy will be pursued during the five-year period. The attention of HFC and private housing developers (GREDA) will be drawn to this to ensure that funding and construction support will be given for the completion of those housing projects which are considered feasible.

(c) **Improved Standard of Housing:** This will be achieved through:

(i) **Technical Assistance:** This strategy addresses the problems of substandard building construction and high building costs through the upgrading of the skills of middle level foremen, works supervisors, electricians and other building craftsmen. The skills of personnel in the inspection divisions of local government in GAMA may be similarly upgraded. The strategy may be achieved through the organisation of in-service training and night classes in the areas of project management and building construction for these grades of personnel in the building industry. It is expected that this may result in the effective use of both human and material resources, improved supervision and building construction methods and facilitate quality assurance.

(ii) **Improved Building Design:** The main thrust of this strategy is to encourage the use of flexible, simplified and compact housing design to reduce floor space and the cost of construction. This will facilitate affordability and raise the standard of housing. It may be achieved through technical assistance as outlined above.

(iii) **Use of Improved Local Materials:** There is a wide variety of improved local building materials ranging from foundation, walling to roofing materials - landcrete blocks, burnt/compressed (clay) bricks, micro-concrete roofing tiles, etc., on the GAMA market. The strategy aims at encouraging the increased use of these materials, especially, by the low income instead of substandard materials like zinc roofing sheets (for both walling and roofing), untreated wood etc. now in use. These may be achieved through public education programmes and exhibition of sample houses directed particularly at the low and middle income groups.

(d) **To make housing affordable.** This may be achieved through:

(i) **Production of Local Building Materials:** The strategy is to permit the use of building materials like treated wood, compressed bricks, landcrete blocks, wooden shingles, micro concrete roofing tiles, etc. for housing development. The objective is to encourage the large scale production of local building materials and less dependence on foreign inputs for housing development. This may be achieved through public education programmes such as radio and television discussions, feature articles in the dailies, seminars and exhibitions. Producers of these materials will be encouraged to go into joint ventures and float shares for public support or be extended credit to encourage their large scale production to reduce unit costs.

(ii) **More Effective Use of Land:** This will be achieved through higher density development based on new planning regulations, strict adherence to residential land use zoning on detailed plans, and also by ensuring that all land registrations are based strictly on the approved detailed land use plans. The strategy will also reduce infrastructure cost per frontage and land cost per plot.

(iii) **Housing Co-operatives:** Based on the concept of the "Nnobo" system in Ghana, would-be home owners may pool financial and material resources and labour together. Through communal labour and self aided production of building materials housing may be provided at affordable costs. This strategy will particularly suit the low income. It may be achieved through the guarantee of access to land for the low income and public education.

(iv) **Effective Supply and Use of Building Materials:** Considerable savings may be made through a better organised delivery and use of building materials. Building materials supply depots may be located near development sites in newly developing areas to reduce transport costs. There could be prefabrica-

tion of scaffoldings to ensure they can be used by several developers etc. The strategy will facilitate pooling of resources and multiple use of construction materials and equipment.

(v) **Co-ordination of Infrastructure Delivery:** This will be achieved by ensuring that the delivery agencies, following the strategic plan for GAMA, co-ordinate their plans and programmes for extending infrastructure to the areas earmarked for development. Areas that develop contrary to the plan will not be provided with services. This will facilitate judicious use of resources and also check sporadic development and uncontrolled spread of GAMA. The pool of resources together by delivery agencies, will ensure that land development for housing is more efficient and less costly than is the case at the moment.

(e) **Improving Housing Conditions:** This may be achieved through Upgrading and Promotion of a housing maintenance culture.

(i) **Upgrading:** This is to be a tool for improving conditions in the depressed areas with minimum disruption of community life. Currently under Urban II there is a study of seventeen(17) of the most depressed communities in GAMA. The study will select five communities for priority interventions. The Communities thus selected will be the main focus of the FYDP. The upgrading plan in addition to providing engineering and service infrastructure, will lead to improvements in the economic circumstances of the people and their housing conditions. Also some provisions will be made for improvements to housing infrastructure - installation of KVIPs, septic tanks etc - particularly in Accra city.

(ii) **Formalising Illegal Residential Development:** This includes areas such as the Sports Complex, Mpoase, Kwashieman (north of Motorway) and Lashibi where development is spontaneous, unplanned and unauthorised. Strategy similar to upgrading is recommended and will imply the extension of engineering and social infrastructure with minimum disturbance of community life.

(iii) **Promoting Housing Maintenance Culture:** This will be achieved through public education and exposure of home owners and builders to the nature and various causes of common maintenance problems encountered in GAMA. This will be facilitated through seminars, radio and television programmes, the dailies and publication of housing maintenance manuals. The APDP has prepared the first of such manuals and it is expected to be translated into the local languages and advertised during the plan period. Another important introduction will be the principle of "maintenance, provision". By this a home owner builds up funds for maintenance through the periodic laying aside of a fixed sum for a future use.

(f) **Enhancing construction capacity and capability:** Construction capabilities may be enhanced through strategies outlined under (c) (i) - Technical Assistance. The capacity may be enhanced through government support to construction firms in the acquisition of plant and equipment and/or joint ventures with foreign firms.

(g) **Increasing Access to Housing Finance:** While the details of funding arrangements for housing development by the HFC are being worked out, a strategy of the development of Local Building Societies and Cooperate Housing Funds may be pursued. It is apparent low income earners will find it quite difficult to get access to housing finance from the established financing institutions and this strategy offers them opportunity to mobilise funds for housing development.

## Cost Summary

Government's facilitating role in housing implies that it takes full responsibility for resource mobilisation and development for housing. To this end it has an on-going nation-wide project, for the promotion of development and use of local building materials. GAMA will benefit from this project, the components of which are: Training of brick layers and building tradesmen; establishment of pilot brick hire and fire concrete plants; and strengthening of construction firms. Project implementation period is 1989-94. Total budget for 1993 is 197 million cedis with foreign component of 121 million cedis. Similar project is going on in the area of institutional strengthening. More specifically, the following is a summary of projects and project costs in GAMA for the 1993-1997 period.



**Table: 3.7 Total Cost of On-Going and New Housing Projects (1993 -1997) (Cost in Million Cedis)**

	1993		1994		1995		1996		1997		Total	
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC
<b>On-going Projects</b>												
UNDP Flats	-	25										25
Urban II Accra Dist. Rehabilitation Project		11										11
Completion of uncompleted Houses	-	4										4
Approtech (Adenta)	-	56										56
Acquisition of SSNIT Flats (150)	-	418										418
Extension of Infrastruc ture (TDC SHC)	-	118										118
Housing Consolidation		44		19		19		19		19		120
Upgrading of Res.areas	113	72	113	72	113	72	114	73	114	73	567	362
<b>Total</b>	<b>113</b>	<b>748</b>	<b>113</b>	<b>91</b>	<b>113</b>	<b>91</b>	<b>114</b>	<b>92</b>	<b>114</b>	<b>92</b>	<b>567</b>	<b>1,114</b>
<b>ADD: New Projects</b>												
Redco		1,005		1,423		1,383		1,711		1,400		6,922
SIC		9,402		14,124		16,485		-		-		40,011
SHC		2,049		2,456		2,947		3,536		4,244		15,232
TDC		1,361		1,747		2,156		2,819		3,542		11,665
GREDA		6,680		7,717		9,615		10,185		10,959		45,156
<b>Total</b>	<b>113</b>	<b>21,245</b>	<b>113</b>	<b>27,558</b>	<b>113</b>	<b>32,717</b>	<b>114</b>	<b>18,343</b>	<b>114</b>	<b>20,237</b>	<b>567</b>	<b>120,100</b>

Total public/corporate contribution to housing is about 120,100 million cedis. On-going projects amount to 1,700 million cedis (570 million cedis is in foreign exchange). The balance of 118,400 million cedis cover new projects costs. Private individuals contribution will be 87,885 million cedis with 66,500 million cedis by the low income, 20,245 million cedis, the middle income and the remaining 1,140 million cedis by the high income.

### 3.4 Environment

The Accra metropolitan area lies within the coastal plains of Ghana. In general the topography varies from flat to gently rolling with some isolated hills along the northeast border of the area and the Akwapim hills near Weija lake towards the south-western boundary. The land has a general elevation of about 75m above mean sea level.

The area is drained by several rivers some of which are impounded along their stretches. These include the Densu which serves as a water supply source for parts of the city of Accra, the Dzorwulu, dammed just upstream of Ashiaman for irrigation purposes and the Mamahuma which flows into the Sakumo II lagoon and is also used for irrigation. There are also many other smaller streams and impoundments. Prominent among these are Odaw, Osu Klotey, Nima, Kpeshie all in Accra. All these streams receive storm water in GAMA and, most of them have development along some of their stretches before they drain into lagoons which open into the sea.

#### 3.4.1 Problems

GAMA faces two types of environmental problems; (1) natural, and (2) those that result from developmental activities.

##### 3.4.1.1 Natural

GAMA faces a number of natural hazards, including:

##### (a) Earthquakes.

Available information on the geology of the Metropolitan Area shows the existence of well-defined fault lines. Many occur as transverse faults in Accra and in the Densu valley near Weija (west of Accra). Between the old breakwater and the P&T External Office in Accra, the cliffs are ridden with trough-step faults dipping at 40° - 70° to the north-west and southeast. The existence of these faults and the city's close proximity to the major seismically active Akwapim and off-shore fault zones, have pre-disposed it to periodic earthquakes.

##### (b) Shoreline Erosion.

The coastline is subject to strong wave action, partly due to its rather narrow continental shelf. As a result of long shore drift, material movement occurs along the coast, caused principally by the Guinea current. Thus, where rocks of the exposed coastline are easily erodible and, where sand winning is unchecked, wave activity in the surf zone has caused severe erosion. The result is that belts of coconut trees along the shore and some recreational facilities have either been wiped out or are under serious threat.

Among the areas most affected by shoreline erosion are: (a) Kokrobite - Bortianor beach (sand winning in the past has been a major facilitator of erosion), Labadi beach, Coco beach, Acapulco beach, Regional Maritime Academy, Chorkor, Tema Manhean, and Sakumo beach.

(c) Flooding: Although the Accra area is only a few meters above sea level, most of the flooding originates from fresh water sources. There are six principal drainage basins in GAMA. Many of the flood plain sections of the rivers draining them are very flat and thus subject to periodic flooding. About 7% of

the total land area of Accra is at risk from flooding. The floods are usually of short duration and are associated with the widespread rains characteristic of the May-July wet season. There are eleven principal flood prone areas that have been identified within GAMA. For many of these areas, some of the causes of flooding are insufficient secondary ditches or feeder canals of adequate capacity and lack of maintenance and control of vegetation in existing drainage ditches and structures, undersized culverts and bridge openings and physical obstruction of drains by solid wastes.

### 3.4.1.2 Development and Environment Interaction

(a) **Water Supply:** Only 40 percent of the households have indoor plumbing. However in poor neighbourhoods, water is often conveyed from untreated sources in open buckets to households where it may be stored in drums. The transport of water through leaking pipes in areas with poor sanitation also adds to the risk of contamination. As the habit of boiling water is not common among people who derive their water from untreated sources, there is a high probability that water quality in low-income neighbourhoods is generally worse than in those areas with access to pipe water.

(b) **Sewerage and Sanitation:** The most common forms of human waste disposal in GAMA are pit latrines, pan/bucket latrines, and open defecation. Only 16 percent of the population in Accra has flush toilets. In the city of Accra, the Metropolitan Authority operates a system for the disposal of sanitary wastes from 188 public toilets (pit latrines) and 20,388 bucket and pan latrines in private houses. Open defecation is common in the slum and peri-urban areas. People use open space, beaches and watercourses in areas where there is no convenient access to public facilities. Some residents in middle income areas are served by about 700 private septic tanks. In Accra, there is a central sewage system that was constructed in 1973. The sewage is discharged into the sea untreated.

(c) **Grey Water:** Grey water (sullage) is the liquid waste water discharged from households, consisting of effluents from kitchens, bathrooms, and laundries. It accounts for the largest share of household water demand. In high and medium-income residential areas, concrete channels and pipe drain grey water into roadside ditches that convey the sullage to watercourses leading to the sea. In poor neighbourhoods, grey water normally flows through holes in household walls onto the ground outside and is then channelled to a roadside ditch or forms a separate channel. Poor sullage disposal can become a source for spread of diseases such as hookworm and mosquitoes.

(d) **Solid Waste Management:** In the high density and economically depressed areas, the wastes are deposited at communal refuse dumps by individual households and are then carted either for landfilling in low-lying areas, or are buried in depressions within the city or in disused quarries on the outskirts of the city. House-to-house collection is not possible in the high density areas because of poor accessibility, hence the use of communal dumps, which can create health hazards if not regularly evacuated. In the low density areas where accessibility is good, house-to-house collection is practiced extensively using motorized vehicles.

### 3.4.1.3 Industrial Pollution Control

(a) In the Accra Metropolitan Area, industrial zones have been created for the siting of major industries. However, small artisan workshops are haphazardly scattered throughout the Metropolis. These include garages that cause noise nuisance from the constant movement of vehicles in and out of their premises, and they also discharge spent oil into the network of drains that ultimately end up in the lagoons. The oils cause a depletion of oxygen and also adversely affect flora and fauna in the water bodies.

Most of the heavy industries, however, are concentrated in the industrial zones of Tema. In Tema, the Chemu lagoon receives quite an appreciable amount of industrial wastes as a result of which it is heavily polluted. The major pollutant is oil from the Tema refinery. The major industries in Accra are car assembly plants, and distilleries and breweries. These are located mostly in the catchment of the River Odaw/Korle lagoon complex. Effluents emanating from these industries include petrochemicals and bottle/floor washings that are discharged into the interconnecting storm water drainage systems that eventually empty into the lagoon. As these effluents are not subjected to any form of treatment before discharge, they have caused extensive pollution of the lagoon, and severely disrupted its ecology.

(b) **Mining:** Extensive mineral deposits for the construction industry occur in GAMA. Clay, sand and gravel are available in several areas. These mining activities have caused extensive environmental degradation. The blattling and crushing of stones for the production of aggregates are known to affect structures in some areas. These activities, coupled with noise and dust from the quarrying operations, are sources of inconvenience for residents in the area. Only in recent years has an attempt been made to reclaim the land after the deposits are exhausted and the landscape has been degraded.

(c) **Aircraft Noise and Hazard:** Kotoka International Airport is located only 7 km from the center of Accra. Noise from aircraft, especially on take-off, is a source of nuisance to residents in the locality. It also poses a hazard to persons and property within the flight path of aircraft. There is little room for further expansion in any direction.

### 3.4.2 Objectives

The following objectives provide the framework for the formulation and implementation of the environment strategy. The objectives are to:

- (1) provide a safe, reliable water supply for GAMA,
- (2) provide basic sanitation services in all urban areas,
- (3) ensure safe treatment and disposal of liquid waste,
- (4) improve public sanitation,
- (5) provide an efficient waste collection service,
- (6) ensure safe disposal of domestic and industrial wastes,
- (7) develop an efficient urban drainage system for the metropolitan area
- (8) alleviate flooding,
- (9) improve the management of drains in flood prone areas.

### 3.4.3 Strategies

(1) **Ensure the provision of a reliable and safe water supply for GAMA through:**

- (a) the protection of all water locations from chemical seepage and weeds;
- (b) the replacement of old, corroded pipelines; and
- (c) the treatment of all water;

**2. Provide all urban areas in GAMA with some form of safe sewage and sullage waste disposal. The strategy has three components:**

- (a) Provision of various levels of service by:
  - (i) extending the capacity of sewerage system in Accra to include the CBD, the industrial area, and the areas around North Accra Post Office and repairing the sewerage system in Tema;

(ii) providing communal septic tank with large capacity for the more densely populated middle and lower income areas;

(iii) ensuring that individuals households in certain areas provide septic tanks; and

(iv) continuing the use of pit latrines in newly developing areas.

(b) Treatment of liquid wastes, including the Accra Sewage system, the outfall into the beach, and sludge waste disposal.

(c) Improve public sanitation. This strategy can be accomplished by:

(i) Introducing street or public toilets;

(ii) providing public ablution houses; and

(iii) developing effective public education programmes.

(d) Providing on site storage of chemical and dangerous industrial liquid waste in secure containers.

**(3) Develop an efficient solid waste management system consisting of:**

(a) Efficient collection system for industrial and urban domestic waste, including residential collection, commercial services, and street cleaning and public rubbish bins.

(b) Efficient and safe disposal of solid waste by:

(i) providing land filling sites;

(ii) introducing safe, cost effective hospital waste treatment plants, including incineration;

(iii) securing an appropriate site where pvc, hydro carbon, chlorides, acids, and other toxic wastes produced by industry can be treated;

(iv) rehabilitation of land fill sites.

(c) Introducing a waste recycling system, including composting.

**(4) To clean all the main drainage channels, and improve the efficiency of the drainage structures.**

(a) undertake a complete cleaning and desilting of main drainage system;

(b) institute local or community cleaning and maintenance of drains;

(c) prepare a master drainage network plan with various functional levels and structural requirements.

**5. Alleviate the severity of local flooding, by:**

(i) introducing flood retention basins, e.g. construction of a low, earth dam;

(ii) reducing surface run-offs;

- (iii) providing flood gates; and
- (iv) dredging of the Sakumo II and Korie lagoons in order to reduce coastal flooding and provide flow in the existing channel system.

6. Prohibition of further development on flood prone areas.
7. Revegetation of the coastal area in order to reduce erosion through vegetative stabilization.
8. Reduce the risks of earthquake by:
  - (i) controlling economic and residential activities west of the fault lines; and
  - (ii) preparing adequate building codes and enforcing them strictly.
9. Resisting Kotoka International Airport in an area away from residential and business locations.

### 3.4.4 Cost Summary

The total sectoral cost is estimated at 17,314 million cedis, of which 6,621 million cedis or 38 percent will be in foreign exchange. The largest share i.e. 6,085 million cedis, representing 85 percent of the total cost goes towards rehabilitation and management of GAMA's coastline.

Table 3.8 Cost Summary on Environment (million cedis)

	1993		1994		1995		1996		1997		Total	
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC
<b>Drainage works</b>	114	1,038									114	1,038
<b>Environmental Studies</b>	17	60									17	60
<b>Coastal management</b>	1,298	1,919	1,298	1,919	1,298	1,919	1,298	1,919	1,298	1,919	1,298	9,595
<b>Total</b>	1,429	3,017	1,298	1,919	1,298	1,919	1,298	1,918	1,298	1,919	6,621	10,693

TABLE 3.9

PROJECT  
DETAILED LIST OF ON-GOING AND NEW HOUSING PROJECTS

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
1	UNDP Flats	To provide housing accomodation thereby easing acute housing problems.	Ongoing project constructional works		24.6	MWH	Accra	1990	1997
2	Urban II Project Accra Dist. Rehabilitation project.	To improve upon urban housing situation thereby improving environment.	"		11.1	TSC/MWH	"	1990	1997
3	Completion of uncom-houses.	To increase housing stock	Ongoing project		4.1	MWH/AESC	"	1990	1997
4	Approtech Housing Scheme (low income housing Adenta).	To improve urban housing stock through the use of inexpensive local building materials.	On going project		56	MWH	"	1990	1997
5	Aquisition of SSNIT Flats (150 No) at Sakumono.	To releive the acute accomodation problems of Civil Servants and Other workers.	Ongoing project		418	MWH	Tema	1990	1997
6	Extension of Infrastructure to Communities 3, 11, 12 and Sakumono	To improve quality of life of dwellers and enhance property values in the new housing estates.	On going service input for		68	TDC/MWH	Tema	1988	1993

TABLE 3.9

**PROJECT**  
**DETAILED LIST OF ON-GOING AND NEW HOUSING PROJECTS**

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (€)	LC (€)				
7	Extension of Infrastructure (Adenta, Teshie-Nungua and Dansoman)	To improve quality of life of dwellers in the new estates and enhance property values.	On-going service input for housing		50	SHC/MWH	Accra/Tema	1988	1993
8	Housing Consolidation	To improve upon Urban housing situation.	On-going project		120	SHC/TDC	Accra	1990	1997
9	Upgrading of residential Areas	To provide Community and engineering infrastructure and thereby improve housing conditions	On-going project	567	362	TSC/MWH	Accra	1990	1997
10	Construction of 467 housing units	To increase housing supply on the housing market and enhance housing conditions.	Public sector housing development		6922	REDCO	Adenta	1990	1997
11	Development of 2695 housing units	To provide employment tied housing for workers and also for the public.	Institutional housing development		40,011	SIC	"	1993	1997
12	Construction of 615 housing units (communities 3, 11, 13, 14)	To increase housing supply to meet demand and improve housing conditions.	Institutional (parastatal) housing		11,665	TDC	Tema	1993	1997



TABLE 3.9

PROJECT  
DETAILED LIST OF ON-GOING AND NEW HOUSING PROJECTS

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
13	Construction of 1,715 housing units at Adenta, Teshie-Nungua, Dansoman, Achimota.	To increase housing supply to meet demand and improve housing conditions.	Institutional (parastatal) housing		15,230	SHC	Accra, Ga	1993	1997
14	Construction of 4,000 units at Weija, Ashiaman, Cantonments, etc.	"	Corporate housing development		45,156	GREDA	Accra, Tema, Ga	1993	1997

**Table 3.10.1 Project - Environment and Ecology, (Drainage)**

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC(¢)	LC(¢)			START	COMP.
1	Tema coastal protection	To stop coastline erosion	Construction of armour & rock/gabion	57	159		Tema	1992	1993
2	Labadi CPU Phase III	-	-	37	200		Accra	1992	1993
3	Marine Drive	-	-	20	180		-	-	-
4	Odaw Stream	To increase flowrate of the drains	Construction of drains		165		-	-	-
5	Kpeshie	-	-		40		-	-	-
6	Onyasia	-	-		35		-	-	-
7	Awudome	-	-		30		-	-	-
8	Labadi	-	-		25		-	-	-

Table 3.10.2 Project: Environment and Ecology (Environmental Protection)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC(€)	LC(€)			START	COMP.
1	Control of wastes	Study of environmental problems	Study, control and regulation (various individual projects)	7	9			1992	1993
2	Environmental Impact Assessment	-	Review, visit document, assess and prepare reports (various individual projects)		7			1992	1993
3	Environmental education	-	Promotion training production, evaluation (various individual projects)		33			1992	1993
4	Provision and access to environmental information	-	Installation upgrading, satellite imaging, promotion etc.	10	3			1992	1993
5	Conservation of resources and resource systems	-	Research, training seminars workshops		8			1992	1993

Table 3.10.3

Project - Environment and Ecology (Coastal Management)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC(€)	LC(€)			START	COMP.

**Table 3.10.3 Project - Environment and Ecology (Coastal Management)**

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC	LC				
1	Korle lagoon	Improvement of physical and environmental conditions	Rehabilitation of Korle lagoon	2,068	3,102	AESC	Accra	1993	1997
2	GAMA Coastal Area	"	Revegetation of area	154	231	"	Accra/Tema	1993	1997
3	Accra Sewage outfall	"	Rehabilitation	1,053	1,231	"	Accra	1993	1997
4	James Town	"	Redevelopment	778	1,166	"	"	1993	1997
5	Sakumo	"	Amplification	389	451	"	"	1993	1997
6	Densu Delta	"	Improvement	978	1,466	"	"	1993	1997
7	Aerial photo	"		75	112	"	GAMA	1993	1997
8	Programmes	"	Study of Policy	391	587	"	Accra/Tema	1993	1996

## Chapter 4

# INFRASTRUCTURE SERVICES

### 4.1 ENERGY

The energy resources base of GAMA consists of biomass (wood fuel), hydrocarbons (petroleum), thermal power, solar power and hydro power.

#### 4.1.1 Fuelwood and Charcoal

Together, fuelwood and charcoal provide 80% of all the energy used in Ghana. Due to the availability of other sources of energy, the fuelwood and charcoal consumption in GAMA can be significantly lower than the national figure.

#### 4.1.2 Petroleum

##### 4.1.2.1 Petrol

Ghana imports all of its petroleum requirements for use by transport, agricultural, manufacturing and construction activities. Kerosine is used widely for lighting especially in the rural areas of GAMA. It is estimated that GAMA in 1990 accounted for 35% of all the petroleum products consumed in the country.

##### 4.1.2.2 Liquefied Petroleum Gas

The Tema refinery currently produces about 13,000 metric tons of liquefied petroleum gas (LPG) annually. Only 5,000 metric tons of the total production i.e. 38.5%, is used for cooking, lighting and processing in domestic and industrial places. Under the proposal to expand the capacity of the Tema refinery and to build a secondary conversion unit, LPG production will reach 65,000 metric tons annually. The expansion programme offers an opportunity to promote the use of LPG as an alternative fuel to charcoal and firewood.

#### 4.1.3 Hydropower

Almost all of the country's electricity is produced from two hydrodams at Akosombo and Kpong which together have a combined installed capacity of 1160 MW, accounting for 7% of Ghana's average annual energy production.

#### 4.1.4 Current Distribution Network

The city of Accra obtains its electricity supply from the national electricity grid through a bulk supply point at Achimota substation where the voltage is stepped down by the Volta River Authority (VRA) and supplied to the Electricity Corporation of Ghana (ECG), which is responsible for marketing and distribution throughout the city. The nearby city of Tema which operates an independent network has another bulk supply substation with a capacity of 99MVA.

The low voltage networks are in relatively poor condition; often over loaded and extending for excessively long distances. The result for some consumers is poor quality and unreliable electricity supply. The distribution system has unacceptably high outage rates and a high system loss of 20%. The loss comprises technical losses incurred as a result of distribution of electricity, power theft, inaccurate metering and billing.

The long period (1975-1986) during which development of the distribution network did not keep pace with consumer demands led to the creation of a large suppressed demand. It is difficult to assess the magnitude of suppressed demand and this makes load forecasting extremely difficult. As a result, modified estimates, which take into account developments occurring after completion of the official ECG forecast, have to be done. For example, the modified forecast for 1991 in Accra was 145 MVA against the official forecast of 138MVA. In 1997, the difference between the two will be 13MVA. In Tema, in 1993 the modified forecast will be 86MVA, nearly 16MVA more than the official forecast. This is due to requests made for two steel industries with total expected demand of 38MVA. The difference in 1997 is expected to reach 34MVA.

The ECG intends to carry out a major overhaul of its networks under the Fifth Power Project (P5) during the period 1991 to 1994. ECG is also planning improvements which are scheduled to be implemented outside of the Fifth Power Project.

#### 4.1.5 Constraints

The consumption, demand, and distribution create complex problems, including:

- (1) **Low tariff.** The electricity tariff is less than 50% of long run marginal cost of producing electricity. This does not enable the ECG to recover capital costs for which loans have been secured.
- (2) **Inability to load forecast.** One significant problem in the provision of electricity is periodic load forecast which would involve the estimation of increases in demand and location of such increases on a time scale and by geographical location.
- (3) **Load density:** ECG attempts to maximise returns on its investments by providing improvements in areas where such improvements result in highest revenue. These areas are invariably the built up areas. Thus newly developing areas with low load density are of lowest priority. It is only after the utility perceives the existence of a large suppressed demand that supply is made available.
- (4) **Consumer's Contribution towards network development.** The capital contribution the utility demands from applicants tends to be higher for the first few applicants in an area because the incremental costs of providing supply to such applicants is higher. Subsequent applicants make use of facilities paid for by earlier applicants and this leads to a lot of contention since there is no policy or mechanism to compensate the earlier applicants for their higher investment. This tends to discourage pioneer consumers in newly developing areas from applying for electricity supply.
- (5) **High power outage rate.** This arises because of technical losses, theft, and inaccurate metering and billing.
- (6) **Lack of coordination among development agencies.** There is no cooperation or coordination of planned activities among development agencies. This results in disruption of services or poor quality service.
- (7) **Lack of coordinated development of new areas.** ECG is often not informed of new developments until developers require electricity. The result is uncompleted strains on existing resources leading to reduced quality of supply.

#### 4.1.6 Objectives

- (1) To improve the quality and reliability of services.
- (2) To eliminate suppressed demand.
- (3) To reduce power outage.

- (4) To improve monitoring and controlling of the sub-transmission network.
- (5) To improve revenue collection.

### Strategies

- (1) In order to achieve acceptable response times in fault location and clearance the ECG should decentralise its system of operations with the rapid expansion of GAMA. This will also help with improvement in metering and revenue collection.
- (2) The improvement in voltages and reduction in outages demand the provision of additional low voltage distribution capacity which will also help to satisfy suppressed demand.
- (3) The monitoring and controlling of the distribution system need an up to date supervisory control and data acquisition equipment (SCADA) in the system. This will help to locate faults more accurately for prompt restoration of power in case of outage.
- (4) For system reliability more resistant 33/11 kv capacity should be coated and inter-correction capacity between primary substations also increased in the system with feeder lengths shortened to stabilise voltages.

### (5) Priority Areas

The following actions are deemed necessary in the short term if electricity services in Accra and Tema are to be brought up to and maintained at an acceptable level.

- (i) Expansion of the distribution (11kV, 0.4kV) network to newly developing areas.
- (ii) Provision of a second bulk supply point for the city of Accra.
- (iii) Implementation of a geographic information system.
- (iv) Billing and revenue collection by ECG.
- (v) Loss reduction.

### 4.1.7 Cost Summary

The total cost of electrical power projects is expected to cost nearly 40,000 million cedis of which 74% will be in foreign exchange. Over 40% of the total cost will go into the expansion and rehabilitation of the distribution system, while work on the transmission basis will add 27% of the total cost. The major problem of the plan is its high cost in foreign exchange which will be funded with loans from.

Table 4.1 Project - Energy

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC(c)	LC(c)			START	COMP.
1	Improvement in Energy Supply	Improve the shortage of construction materials	Construction of bitumen Plant	504	33	MFP	Tema	1991	1994
2	"	Bulk transportation of petroleum products	Pipeline from Tema to Akosombo	996	688	MFP	Tema	1991	1994
3	"	To meet nation's engine oil requirements	Lube oil blending plant	80	237	MFP	Tema	1990	1994
4	"	To meet demand for petroleum products	Refinery revamping	500	571	MFP	Tema	1989	1994
5	"	To extend the life span beyond the year 2000	Rehabilitation PH.II	643	884	MFP	Tema	1989	1994
6	"	To extend the life span beyond the year 2000	Refinery Rehabilitation PH.....III		12	MFP	Tema		



Table 4.2

## Projects - Electricity

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
1	Electricity	Improve system voltage to consumers by providing more sub-stations	Upgrade transformer capacity and reduce supply from each transformer sub-station to reduce over loading and also reduce lengths of feeders to reduce loss, in transmission.	2,897	959	ECG	Accra North-West	1991	1994
2	"	"	"	3,377	1119	"	Accra North East		
3	"	"	"	3,913	1297		Accra South		
4	"	"	Upgrade 50,000 Service connections	800	263	"	Tema	1991	1994
5	"	"	"	1,421	470		Accra		
6	Street Lighting	To provide security	Construction of more street light	1,894	700		Accra	1991	1994
7	Transmission	Increase power supply to substations	Build more bulk supply points and improve cable	1,269	423	"	Accra		
8	"	"	"	151	50	"	Tema		
9	"	"	Bulk supply point	2,983	743	ECG/VRA	Near Graphic Road		
10	Transmission	"	Bulk supply point 1332 MVA	3384	846	ECG/VRA	Motor way		
11	"	"	Establish 2 of 10 MVA 33/11kv substation.			ECG	Accra		
12	Technical Assistance	Supervise studies and improvement to the system	Conduct more studies into problems of supply of power and supervise the solution to the problems.	1880	72	ECG	Accra/Tema		
13	Communications	To improve the procection and control of the system.	Replacing the supervisory control and data requisition system of the HV network (SCADA).	976	280	"	"		
14	"	"	Improvement of ECG's internal communications.	486	120	"	"		

Table 4.3 Cost Summary - Electricity (million cedis)

Project	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
On going- Projects (PIP)	2,763	2,425	-	-	-	-	-	-	-	-	2,763	2,425
Distri- bution	3,760	908	3008	800	3008	800	1,880	800	752	800	12,408	4,108
Commu- nication	706	100	320	75	230	75	206	75	-	75	1,462	400
Street Lighting	398	110	366	170	366	140	398	150	366	130	1,894	700
Trans- mission	1,504	450	1,880	450	1,880	450	1,880	450	1,203	450	8,347	2,250
Consulting/ Training Studies	470	45	564	60	564	45	470	50	282	60	2,350	260
<b>Total</b>	<b>9,601</b>	<b>4,038</b>	<b>6,138</b>	<b>1,555</b>	<b>6,048</b>	<b>1,510</b>	<b>4,834</b>	<b>1,525</b>	<b>2,603</b>	<b>1,515</b>	<b>29,224</b>	<b>10,143</b>

## 4.2 WATER SUPPLY

Water provision in GAMA is the responsibility of the Ghana Water and Sewerage Corporation (GWSC). The corporation has created a separate administrative area, the Accra Tema Metropolitan Area (ATMA), which is divided into 17 districts, 4 of which lie outside GAMA.

Water is supplied to the metropolitan area from two waterworks located at Kpong (54km north of Tema) and at Weija (15km West of Accra).

Treated water reaches Accra by pumping from the Kpong waterworks, to Tema terminal reservoir and by pumping from this reservoir to Accra terminal reservoir. Both these transmission lines are in poor condition. The Weija waterworks, on the other hand, transmits treated water to Accra through five transmission pipelines, two of which terminate in the Mile 4 Reservoir. Accra's high and medium pressure zones are served by the Kpong works and the low pressure zone from both Kpong and Weija.

Many areas in ATMA suffer from poor water supply and low pressure (with interruptions in supply) largely because of insufficient water treatment and inadequate main, secondary and tertiary pipelines.

### 4.2.1 Water Consumption, Demand, and supply

All commercial, industrial, institutional and governmental consumption of water is metered. Domestic consumption is also metered at the house or yard connection (29%), via public stand pipes (25% mostly low income households). The metering of public stand-pipes is not widespread. Some premises have no meters and are billed on average estimated consumption for similar premises in the area. It is not possible to estimate the number of persons within each group, but it is believed that over 40% of the population in the metropolitan area does not have ready access to an adequate water supply.

Despite ATMA's metering policy, water consumption and leakage surveys have revealed considerable water losses. Studies indicate that metered consumption accounted for only 46% - 58% of water produced. With an allowance of about 10% for consumption through public stand-pipes, non-metered house connections supply by tankers to certain neighbourhoods, fire-fighting, illegal connections, etc, total water consumed would not exceed 68% of total production, therefore 32% is unaccounted for. The amount of unbilled water consumption is estimated at about 26% of daily water production - most of this due to illegal connections, inaccurate meters and incorrect estimation of the unmetered consumption. This amounts to about 70,000 m<sup>3</sup> per day. The average daily water billed consumption in 1990 was 107,000 m<sup>3</sup> per day. The low billed consumption is due to:

1. Water loss through leakages, estimated at 35% of production (95,000m<sup>3</sup>/day).
2. Incorrect estimates of the unmetered consumption, illegal connections, and probably due to inaccuracy of the meters of some consumers. It is assumed that about 90% of the unbilled consumption of some 90,000m<sup>3</sup>/day is attributable to domestic consumption and 10% to the other categories.

The total supply of water from the two head works at Kpong and Weija is 334,000m<sup>3</sup>/day or 73 mgd, of which 137,000m<sup>3</sup>/day (30 mgd) comes from Weija and the rest 197,000m<sup>3</sup>/day (43 mgd) from Kpong. The total demand for Accra and Tema is estimated to be 360,000m<sup>3</sup>/day (78.8 mgd) and the demand will increase to about 395,000m<sup>3</sup>/day (86.4 mgd) by 1993. This shows that in addition to the large amount of leakage there is a substantial suppression of demand in the system. By the year 1997 the demand may be 470,000m<sup>3</sup>/day which will be 144,000m<sup>3</sup> more than the capacity of the two existing head works. Pressures in upland areas are quite low, thereby affecting regular supply to those areas just as areas with inadequate sized pipes are. All these affect generation of funds for the corporation, reducing its capabilities to rectify the degeneration.

## 4.2.2 Constraints

(1) **Water Pollution:** Accra gets part of its water (Weija) from Densu River which has become increasingly polluted from domestic sanitary waste and fertilizers used in crop production. In low lying residential areas, low pressure and the poor installation of pipes often result in polluted ground water entering the system. Water quality is also affected by breakage and cracks in pipes as well as poor quality fittings and fixtures which allow polluted water to enter the pipelines.

(2) **Suppressed Demand:** This is due to:

(a) **Low Pressure:** Some estates (eg. Teshie/Nungua) have very good reticulation but very low pressure, due to the interception of the mains serving other areas along the Tema/Nungua stretch of the trunk connection.

(b) **Inadequate Mains Capacity:** Other areas such as East Adenta estates have been provided with good reticulated pipe system but no water because of the inadequate capacity mains supplying the area, as well as low levels in the source reservoir at Legon.

(c) **No Pipe Reticulation:** In the newly developing government areas, such as East Legon, where the road network has not been properly constructed, pipe reticulation has not been provided and this goes for many other areas with no reticulation. Labadi has good reticulation along the main roads but, since very few access roads exist in the area, providing service to homes has not been easy.

(d) **Inadequate Water Production:** The demand for water is greater than supply. In 1997, the demand will be 144,000m<sup>3</sup> more than the two works can supply.

(3) **Water Loss:** The loss arises through leakages in the transmission lines, including the main distribution lines and the local pipe network and taps. Losses are mostly high in areas where connections are high.

(4) **Revenue Loss:** Revenue loss to GWSC through uncollected bills and water loss are high. The loss is estimated to be 2.7 billion cedis annually.

### 4.2.3 Objectives

- (a) Reduce water losses through leakages.
- (b) Eliminate illegal connection.
- (c) Reduce the number of unmetered houses and faulty meters.
- (d) Increase production of treated water by expanding the treatment works.
- (e) Expand the water supply coverage.
- (f) Improve revenue base.

### 4.2.4 Strategies

(1) **Reduce Water Loss:** This can be achieved by

Rehabilitation of the existing system, including pumping equipment, reservoirs, treatment plants and replacing the main, secondary and tertiary pipelines. Fittings need to be standardized and at the local pipe network level. Washers, poor fittings and joints, and poor quality plastic pipes have to be replaced.

(2) **Stopping illegal connection.** GWSC must step up its illegal connection detection programme and institute more effective ones as the situation demands.

(3) **Provide meters in houses where they have not been installed** to eliminate estimated consumption and replace faulty metres. This must be done early in the Plan period, preferably in 1993.

(4) **Improve Water Pressure in mains** by providing storage reservoir at appropriate points or booster stations where necessary.

(5) **Increasing Water Supply Coverage.** This can be done by:

(a) Investigating, surveying and acquiring land for the construction of a canal to transport raw water from Kpong to Doryumu with new treatment and pumping stations to Accra and Tema.

(b) Providing pipe reticulation to some of the new sections and to newly developed or developing areas of GAMA.

### 4.2.5 Cost Summary

The total cost of the development of water supply in the 5 year period is estimated at 24,009 million cedis of which the local component will be about 2,286 million cedis, which is 10% of the total cost. Increasing water supply capacity will cost about 11,661 million cedis or 48% of the total costs, whilst improving availability and reliability of water will be 51% of the total cost. The remaining 1% goes to improve the revenue collection. The first year of the plan will cost 5,548 million cedis in foreign exchange for equipment and materials and 583 million cedis in labour and local materials. The second year will also cost the same amount of money in both local and foreign currency for the same purpose as the first year.

In the fourth year foreign currency of about 3,686 million cedis and a local currency of 380 million cedis to continue with improvement of distribution and production capacity will be needed whilst the final year will require a total of 4,134 million cedis in both foreign and local currency to complete the pipe reticulation. It is expected that funding of these projects will come from Ghana Government, Italian Government and African Development Bank. However no external funding has been secured yet.

TABLE 4.4

## PROJECTS - WATER SUPPLY

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	YEAR COMP.
				FC (¢)	LC (¢)				
INW1	WA supply Trunk Mains	Increasing supply capacity	Construction of a 900mm trunk mains from Weija to Accra terminal reservoir	6186	520	GWSC	GA/ Accra	1992	1994
INW2	Reduction of leakage	"	Reline Tema to Accra 800mm rising parallel Tema/Accra	633	16	GWSC	Tema	1993	1994
INW3	"	"	Reline Kpong to Tema 1070mm transmission line	3863	215	GWSC	Kpong/ Tema	1995	1997
INW4	"	"	Rehabilitation of pumps in pumping stations 19pcs	2005	98	GWSC	Kpong/ Accra	1992	1994
INW5	"	"	Leakage survey	75	15	"	Accra	"	"
INW6	"	"	Expasion of Weija treatment plant by 15mgd	1504	200	"	"	"	"
INW7	Distribution Network	Improving availability and reliability	Completion of 300mm 2km and 350mm 2.3km mains in Dansoman	173	48	"	"	1992/ ongoing	1994
INW8	"	"	Laying of mains line in North West Accra 300mm 10km	564	60	"	"	"	"
INW9	"	"	Laying of rising mains (500mm/3.5km to HPZ)	376	30	"	"	"	"
INW10	"	"	Construction of a reservior at McCarthy Hill with 900mm 2.1km transmission lines 5mg	1318	160	"	"	1992	1994

TABLE 4.4 PROJECTS - WATER SUPPLY

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (₦)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
INW11	Distribution Network	Improving availability and reliability	Construction of a reservoir at McCarthy Hill with 900mm 2.1km transmission lines 5mg	1318	160	Accra	1996	1998
INW12	.	.	Laying secondary and tertiary lines in north west Accra 100mm (12km) (9km) and 200mm (3.5km)	602	105	.	1995	1997
INW13	.	.	Ditto in Mamprobi and Dansoman 100mm (6.5km), 150mm (4.2km)	244	40	.	.	.
INW14	.	.	Ditto Osu Salem Rd. to Kuku/Ringway estates 200mm (2km), 150mm (2km), 100mm (4km)	207	35	Accra	1995	1997
INW15	.	.	Laying pipe mains 800mm (2.8km), 700mm (1.6km), 500mm (1.6km), 400mm (12km), 250mm (12km), and 200mm (2km) Teshie/Nungua area	1630	185	.	1992	1994
INW16	.	.	Laying secondary and tertiary lines 100mm (10km) 150mm (13km) Teshie area	526	90	Accra	1995	1997
INW17	.	.	Laying mains 300mm (10km) in HPZ areas	1278	217	.	1992	1994
INW18	.	.	Laying secondary and tertiary lines 100mm (45km) 150mm (22km) 200mm (17km) HPZ areas	1955	260	.	1995	1997

TABLE 4.4 PROJECTS - WATER SUPPLY

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (₦) LC (₦)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
INW19	"	"	Ditto 100mm (46km), 150mm (35km), 200mm (7km)	1955 260	GWSC	Accra	1995	1997
INW20	"	"	Ditto 300mm Achimota Rd. (2.2km) Nima HW (2.5km) Kalabadi Rd (2.1km)	171 68	"	Accra	1992	1994
INW21	"	"	Ditto 900mm (1.6km) 600mm (1.2km)	396 143	"	"	1995	1997
INW22	"	"	Ditto 500mm Weija Rd (1.735km) Graphic Rd (2.460km) 300mm Motorway Awonshie Rd (3km)	234 108	"	"	1992	1994
INW23	"	Improving Revenue base	Installation of 10,000 units of water metre	188 21	"	"	1992	1994

**Table 4.5 Cost Summary - Water Supply (million cedis)**

PRJ	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	TOTAL LC
<b>Increasing Supply Capacity</b>	3,573	286	3,572	286	1,288	72	1,288	72	1,287	71	11,008	653
<b>Improving Availability and Reliability</b>	1913	290	1,915	290	1,915	308	2,398	361	2,406	370	10,591	1,619
<b>Improving Revenue Base</b>	62	7	62	7	-	-	-	-	-	124	14	
<b>Total</b>	<b>5,548</b>	<b>583</b>	<b>5,549</b>	<b>583</b>	<b>3,247</b>	<b>380</b>	<b>3,686</b>	<b>433</b>	<b>3,693</b>	<b>441</b>	<b>21,723</b>	<b>2,286</b>

### 4.3 SANITATION

The Ghana Water and Sewerage Corporation (GWSC) is responsible for providing facilities for the disposal of sewage and other liquid waste in GAMA. In Tema, the Tema Development Corporation is responsible for the sewerage system. The AMA and Ga district assemblies are also responsible for public health, construction and maintenance of some public facilities and the disposal of night soil sanitary wastes. Most of the Greater Accra Metropolitan Area (GAMA) does not have adequate sanitation facilities. The majority of the residential areas are without proper toilet and ablution facilities. The following services are available:

#### 4.3.1 Accra

Accra has a water borne sewerage system covering its central part from the east side of the Korle Lagoon, to west and east Ridge.

##### Individual Sewerage Schemes

There exists about 4 individual sewerage schemes in Accra and there are 14 other individual sewage treatment plants scattered over the metropolitan area.

##### Domestic Sanitary Facilities

There are estimated to be 32,350 pan latrines in private homes to be emptied three times in a week by conservancy labourers.

##### Septic Tanks

The Accra Metropolitan Assembly services over 18,000 septic tanks in domestic, non domestic premises. There are also public toilets (141) and public wash houses (30) all over Accra for the convenience of residents.



## **Sullage Waste Disposal**

Sullage or gray water, is liquid waste discharged from domestic premises from body washing, washing of eating and cooking utensils, and laundering of clothes. The sullage is discharged into surface water drainage channels and ditches.

### **4.3.2 Tema**

Tema has a modern water-borne sewerage system in all the communities but there is currently no facility for treating sewage which is currently dumped in a raw state into the sea. Household sullage discharges into the sewers; as a result, Tema does not have the problems of sullage in open drains like Accra.

Ashaiman township is one of the most densely populated urban areas of Greater Accra Region and sanitation conditions for the disposal of human, sullage and other wastes are bad..

### **4.3.3 Ga**

Ga district has about 140 towns, villages and smaller settlements. Sanitary facilities in these areas are very poor, using either pit latrines or the bush. In Amasaman, the district capital, there is only one public toilet of the cesspool type.

### **4.3.4 Constraints**

**(1) Lack of Maintenance:** In both Accra and Tema, the sewerage system is operating inefficiently, with broken down pumps, sub marine outfalls, and inadequate connections, etc. This situation can result in very high environmental, public health, and operational costs which cannot be sustained.

The state of repair of the 14 independent sewerage treatment systems poses a serious danger to public health. The major reasons for them being in a state of disrepair are due to management, maintenance and cost of operation. There is an immediate need for the GWSC to take over responsibility for the repair, maintenance and ongoing operation of these facilities.

**(2) Unsatisfactory Sullage Disposal System:** The current methods of sullage waste disposal in the metropolitan area are totally unsatisfactory leading to the spread of water borne and insect carried diseases. As the domestic consumption of water increases so will sullage. Disposal of this will become an increasingly difficult problem. As the city is not dependent on ground water supply for drinking purposes, greater efforts must be made to reduce sullage waste disposal through closed systems and soakaways.

**(3) Industrial Liquid Waste:** The majority of industrial wastes produced at the four main industrial areas are produced by textiles, food processing, and oil refining and handling. The Odaw river and Chemu stream at Tema are heavily polluted water courses, receiving toxic wastes from surface run off and direct discharge into the drainage channels, causing serious problems to public health and damage to biological food chains.

**(4) Lack of Sanitary Facilities in Rural Settlements:** The lack of adequate toilet and ablution facilities in rural towns and villages within GAMA poses serious problems to public health. There is an urgent need to develop sanitary sites for these settlements.

### **4.3.5 Objectives**

**(1)** To reduce the level of pollution of the sewage discharges.

**(2)** To eliminate health hazards at the beaches arising from disposal of raw sewage into the sea.

- (3) To create a common management, maintenance, and sanitary systems in the existing plants.
- (4) To reduce maintenance, supervisory, and technical management costs of the existing plants.

#### 4.3.6 Strategies

- (1) **Rehabilitate Accra and Tema sewerage Systems.** A long term plan is needed to rehabilitate and extend the Accra sewerage system. In the short-run, the pumps in Accra and Tema which have not been in operation for a long time, will be rehabilitated together with the sub-marine outfalls.
- (2) **Provide a centralised sewerage management system.** The separate institutional sewerage plants have mostly broken down. These will be taken over by GWSC to ensure proper rehabilitation, maintenance, and appropriate environmental standards.
- (3) **Eliminate pan, pit, and KVIP latrines from urban areas.** These will be eliminated and replaced by communal septic tanks for the more densely populated areas and septic tanks for the low density residential areas.
- (4) **Use KVIPs in rural communities.** KVIP systems have been shown to be more successful in the rural towns and villages where their use will be extended to all settlements in GAMA.
- (5) **Provide a treatment centre for industrial wastes.** After on site storage of chemical and industrial liquid wastes in secure containers, they should be treated at a central location under the management and supervision of GWSC and EPC.
- (6) **Provide sullage disposal systems.** The majority of liquid waste produced in the metropolitan area is sullage. This can be disposed in two ways:
  - (a) Providing soakaway pits with overflow connections to nearby drainage channels.
  - (b) Connecting into the sewerage system. This is for areas serviced by a water borne sewerage system.
- (7) **Providing public sanitation.** There is an urgent need to improve the public sanitation facilities such as street latrines and ablution houses and to create a greater awareness and sense of responsibility through public hygiene programmes.
- (8) **Increase revenue.** Nations revenue enhancing systems will be controlled, including charges for expansion of the sewerage system, operating costs, and special incentive programmes for collection from septic tanks.

#### 4.3.7 Cost Summary

The total cost of the Plan is 9,257 million Cedis, of which 6,051 or 65% is in foreign exchange. The cost of the Plan during the first year is 2,952 Cedis or nearly 32%. The institutional system connections will involve nearly 50% of the total cost of the Plan. No external funding has however been secured.

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
INS 11	Upgrade public toilets facilities	Improvement of public sanitary	Conversion of pan and cesspool toilets into flush toilets.	-	250	AMA	Accra	1993	1997
INS 12	-	-	Construction of 18 KVIP public toilets	-	100	GDA	Amasaman and other towns	1993	1997
INS 13	-	-	Rehabilitation of all sanitary blocks in Ashaiman and construction of 2 self flush toilets & also 1 . KVIP. toilet.	150	1	TSC	Tema	1993	1997

**Table 4.6 Project - Liquid Waste Mangement**

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC	LC	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
INS 1	Provision of treatment facilities for sewerage system	Reduce pollution leading to health hazards	Supply logistics and maintenance equipment to sewerage dept. 4 Pick Ups, 3 Lifts.	653	500	GWSC	Accra Central	1993	1997
INS 2	.	.	4 Pumps 1 Crane tunk, 3 Flushing Jet. Provide a sewerage laboratory for monitoring pollution level. Laboratory van and a stand by generator.	.	180	.	.	1993	1997
INS 3	.	.	Construct oxidation ponds for treatment of sewerage before disposing into the sea at both Sakumo West( Accra) & Sakumo West (Tema) & Pumps	76	800	GWSC	Accra	1993	1997
INS 4	.	.	Complete sewerage	38	2	TMA	Ashaiman	1993	1994
INS 5	Sewage Improvement	Improvement of Sewage Disposal	Accra Sewage improvement	110	40	GWSC	Accra	Ongoing	
	.	Improvement of Sewage disposal	Replace Korle Gonno treatment facility		25	WMD	.	1993	1993
	.	Improvement of Sanitary condition	Construction of slaughter house		120	.	.	1993	1993
INS 6	Institutional System Connection	Provide safe disposal of Sewerage	Connecting existing individual plants into existing Central Sewage system	76	180	GWSC	Ministries		
INS 7	.	.	.	224	65	.	Osu/Labone		
INS 8	.	.	.	384	.	.	CBD/Agboloshie		
INS 9	.	.	.	224	300	.	Legon Presec Pantan		
INS 10	Studies	Improvement of system efficiency	Preparation of Sewerage Master plan.	376	28	.	Accra	Ongoing	1994

Table 4.7 Liquid Waste Management (million cedis)

PROJECT	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
Various Projects in Accra	110	185	-	-	-	-	-	-	-	-	110	185
Treatment Facilities in Accra (GWSC)	729	200	-	400	-	400	-	300	-	180	729	1,480
Treatment Ashaiman (GWSC)	38	1	-	1	-	-	-	-	-	-	38	2
Institutional System Connection	908	545	-	65	3,516	250	224	150	-	150	4,648	1,160
Upgrading of Public Toilets	30	71	30	70	30	70	30	70	30	70	150	351
Studies	126	9	126	9	-	-	-	-	-	-	376	28
<b>Total</b>	<b>1,941</b>	<b>1,011</b>	<b>156</b>	<b>545</b>	<b>3,546</b>	<b>720</b>	<b>254</b>	<b>520</b>	<b>30</b>	<b>400</b>	<b>6,051</b>	<b>3,206</b>

## 4.4 DRAINAGE

The Architectural Engineering Services Corporation (AESC) is responsible for drainage in the metropolitan area. Ghana Highways Authority has responsibility for drainage associated with major roads. TDC has responsibility for drainage in Tema. Drainage and flooding is a problem which affects the city every wet season. Considerable investment has been made to improve the drainage system for the metropolitan area, but the impact of rapid urbanization is over-extending the resources of the organizations responsible for providing and maintaining the drainage system.

In the Accra Metropolitan Assembly area drainage and sewerage have been problems for which various organisations have been consulted and are still being consulted. Several solutions have been proposed but the lack of funds to implement the proposals has also been a problem.

The few areas where adequate drains have been provided lack maintenance, and get the drains silted or choked with refuse and other foreign matter. Similar drainage problems also exist in Tema. The Ga District has very little artificial drains because of lack of road networks, and, therefore use the natural drainage system by developing their townships on ridges leaving the valleys for farming. This approach saves them from floods during rainstorms.

### 4.4.1 Constraints

(1) **Poor drainage.** Some drainage problems are created by natural features such as the underlying geology, soil conditions and localized topographic features. The majority of problems are created by the growing

urbanization of the metropolitan area and the impact that this has on increased surface water runoff and flooding in low lying areas. The main reasons for flooding are:

- (a) **Inadequate design considerations.** Many localized flooding problems in the urban area can be attributed to poor design of stormwater facilities. Undersizing of culverts and drainage channels, poor consideration of maintenance requirements and underestimation of siltation loads are common faults. Conversely, concrete lined drainage channels on both sides of residential streets are often more expensive to construct than the road itself. Simpler design standards could enable much larger areas to be serviced by stormwater drainage. There is a need to review many of the current design standards to ensure all drainage systems have adequate capacity, and not expensive.
- (b) **Choked drains.** The lack of adequate drainage and under designed channel capacity in many areas have given rise to serious flood problems. These problems are compounded where drains are used to deposit solid and sanitary wastes. There is no programme for regular or seasonal clearance of choked drains, and, as a result, the first heavy rains washes down polluted water into low lying areas. A well organised programme for seasonally clearing drains is required to ensure they remain free flowing.
- (c) **Impeded drainage.** Several low lying areas along the Odaw and Sakumo II catchments have natural low lying areas of impeded drainage. These are a health hazard and suitable habitat for vermin, snakes and disease carrying insects. Small scale drainage works are required to reduce the water-table in these small impeded drainage areas.
- (d) **Dredging and Outfalling.** Many of the lagoons along the coastline remain closed until opened by heavy rains. Others like Korle, Sakumo II lagoon, and Chemu II have very narrow outlet channels, and do not provide sufficient capacity for stormwater discharge or adequate flushing of the lagoon systems, creating pollution and a large build up of sediment. In order to improve the quality of water and provide sufficient channel clearance to enable flood water to be adequately discharged, the channel entrances must be widened substantially.
- (2) **No catchment conservation plans.** As the metropolitan area expands and more land comes under intensive cropping in catchments undergoing urbanization, surface water runoff will increase. This will lead to increased siltation and more severe floods down stream - especially in areas surrounding the lagoons.
- (3) **Lack of development control.** Although flood prone areas have been mapped out, there are no strict development control measures in these areas.
- (4) **Lack of management for minor drains.** There is an urgent need to sort out who should be responsible for the management of drainage in the metropolitan area. AESC currently has responsibility for planning, design, construction and maintenance of primary and some secondary drains. The Highway Authority has responsibility for certain road sidedrains. No one is responsible for minor drains, often the source for local flooding.
- (5) **Inadequate maintenance.** One of the reasons for flooding is that there is no regular maintenance and clearing of the primary and secondary drains, often choked up with rubbish and silt.

#### 4.4.2 Objectives

- (1) To prevent the occurrence of floods.
- (2) To establish a system of management and maintenance of drains.
- (3) To control development in flood prone areas.

### 4.4.3 Strategies

(1) To provide an efficient drainage system. This can be achieved by providing:

- (a) an overall metropolitan drainage plan or classification of drains for purposes of planning, construction, and maintenance, preferably categorized into functional levels;
- (b) adapting appropriate design and construction standards for drains, culverts, and other drainage channels;
- (c) removing sediments, rubbish, etc. choking drainage channels.

(2) To provide flood mitigation measures through:

- (a) flood retention basins in order to reduce rapid runoff and flash flooding, involving the construction of a low dam across a stream;
- (b) flood gates should be introduced to restrict the velocity of flow;

(3) To provide a suitable management and maintenance system for:

- (a) management of flood prone areas to control further development and to relocate persons living in flood prone areas to higher grounds;
- (b) erosion catchment and conservation. This will prevent both erosion and pollution which contribute to flooding;
- (c) maintenance of drains. This will help undertake routine maintenance of all drains in the metropolitan area, including desilting and removing of rubbish from choked drains; and
- (d) establishing a central authority to ensure efficient management and maintenance and undertake planning, design, and development.

### 4.4.4 Cost Summary

The total cost of drainage improvement and provision in the 5 year period comes to about 32,000 million of which designing of the major works and minor improvements to drainage in the worst areas take about 10% of the total cost in the first year. In the second year, only minor designing but serious improvement works start on many drains using about 18% of total cost. In the third and fourth years, when the improvements and new construction works are in high momentum, 30% and 28% respectively of the total cost will be committed. The fifth year needs only 14% to mop up the overall drainage improvement and construction. When this is completed a budget of about 5% to 10% of this cost will be needed for regular maintenance to keep out flooding of areas normally prone to floods due to silting up of drains. Funding of these projects will be mainly from the Ghana Government.

Table 4.8 Projects- Drainage

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
IND1	Flood Prevention	Remove inadequacy in drain sizes.	Provide adequate drainage channels and culverts in the following flood prone areas:			Urban Road & AMA		1993	1993
001			Sukura	77			Accra	1993	1993
002			Dansoman	99			Accra	1993	1993
003			Mataheko	138			Accra	1993	1993
004			Mampong Stream	306			Accra	1993	1993
005			Tesano	242			Accra	1993	1993
006			Chemu Stream	354			Accra	1993	1993
007			Kaneshie	442			Accra	1993	1993
008			Mukose	551			Accra	1993	1993
011			Castle	44			Accra	1993	1993
012			Dzorwulu	978			Accra	1993	1993
013			Nima Tributaries	193			Accra	1993	1993
014			Adabraka	1880			Accra	1993	1993



Table 4.8

## Projects - Drainage

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
IND 2	Drainage Improvement	Remove inadequacies in drain sizes	Second priority:						
			Akweteman		70	Urban Roads/AMA	Accra		
			Bubuashie		84	"	"		
			W. Abossey		56	"	"		
			Mamrobi		56	"	"		
			Chorkor		63	"	"		
			S. Odorkor		126	"	"		
			Korle gonno		55	"	"		
			Nima		510	"	"		
			Main South Labadi		52	"	"		
			Abemkpe		35	"	"		
			Airport residential		70	"	"		
			University Legon		140	"	"		
			Ajirigano		245	"	"		
IND3	Provision Storm drain	To Prevent flooding of properties and farms	Construction of storm-drains to channel storm water away into safety in:						
			Ashaiman, Lashibi		500.00	TMA	Ashaiman	1997	1997
IND4	"		Industrial Area		1000.00	TMA	Tema	1997	1997
IND 5	"		Fishing Harbour Area Tema		500.00	TMA	Tema	1994	1994
IND 6	Provision of storm drains	To prevent flooding of properties and farms	Provide 10Km of standard open drain per year along street frontage		1300.00	TMA	Tema	1993	1997
IND 7	Provision of Covered drains	To prevent dumping of refuse and other materials into drains..	Precast strong concrete slabs to cover 10km of open drains in heavily populated areas.		2000.00	Urban Roads & AMA	Accra	1993	1997

Table 4.9 Cost Summary - Drains (million cedis)

Drain	Length (Km)	1993	1994	1995	1996	1997	Total
Sukura	1.1	77	-	-	-	-	77
Dansoman	2.2	99	-	-	-	-	99
Mampong St.	1.6	138	-	-	-	-	138
Mataheko	4.3	306	-	-	-	-	306
Tesano	1.7	242	-	-	-	-	242
Chemu St.	1.6	6	348	-	-	-	354
Kaneshie	5.5	21	421	-	-	-	442
Mokose	3.4	26	210	315	-	-	551
Castle	0.44	2	-	42	-	-	44
Dzorwulu	6.6	46	-	373	559	-	978
Nima Trb.	5.4	9	-	-	184	-	193
Adabraka	-	313	627	627	313	-	1,880
Circle Drn.	1.6	-	203	3,003	2,800	907	6,913
Kpehe	1.6	25	250	250	-	-	525
Awudome	0.64	25	500	250	250	-	1,025
Labadi	2.00	20	-	250	250	-	520
Accra Ctr.	2.4	50	-	500	500	300	1,350
Accra West	6.8	900	1,970	2,540	2,470	1,970	9,850
Ridge	5.5	750	502	752	752	502	3,258
Odaw Side Drain	7.6	502	502	752	752	752	3,260
<b>Total</b>	<b>61.98</b>	<b>3,557</b>	<b>5,533</b>	<b>9,654</b>	<b>8,830</b>	<b>4,431</b>	<b>32,005</b>

## 4.5 SOLID WASTE MANAGEMENT

Solid Waste Management in Accra is the responsibility of the Waste Management Department (WMD) and in Tema that of the District Engineer's Department (DED). The refuse collection service extends to households, markets, offices/shops, hotels, restaurants, selected industries and hospitals. The refuse produced is 0.51 kg ppd which comes to about 670 tons solid waste per day for the metropolitan area. Most refuse is wet with a high organic content, but the non biodegradable, combustible and hazardous toxic content is expected to increase in future.

In Accra WMD operates a small fleet of vehicles for its house to house service. Collection is made once weekly to mostly medium and high income areas. The house to house service covers about 5% of the population.

The Waste Management Department of AMA has over 180 central container locations where residents can dump their household refuse.

In Tema, the house to house service affecting 40% of medium/high income areas has only recently been reintroduced and is currently operating as a pilot project using private contractors for collection and disposal.

There are still many people who unfortunately dump their refuse on the ground or roadside verges as well as water courses passing through the town.

### 4.5.1 Constraints

(1) **Shortage of vehicles and equipment.** To provide a regular weekly collection for the metropolitan area will require more plants, machinery, and vehicles together with the necessary backup support for maintenance and replacement.

(2) **Cost recovery.** The current waste management is heavily subsidized through a technical and financial assistance programme. It is doubtful that this service can be continued unless charges can be raised sufficiently to cater full costs by 1995 or to ensure future external assistance. In Tema, there is no payment for refuse collection.

(3) **Insufficient containers capacity.** In some areas where central container services are provided, there is over-spilling and indiscriminate dumping of refuse due to insufficient container capacity.

(4) **Inadequate communal refuse collection points.** Insufficient containers and communal refuse collection points have led to indiscriminate dumping of refuse.

(5) **Lack of a promotion programme to improve refuse collection.**

There is a tendency for people to throw refuse into the nearest stream or open area, a habit which is very difficult to change - especially if there is no alternative. There is also reluctance to pay for service when an existing practice costs nothing. Developing a culture of safe waste disposal will take time and will need to be supported by the community. One of the real issues is how to introduce and promote programmes to improve local refuse collection, and household refuse disposal habits and willingness to pay for the service.

(6) **Lack of community organization for drainage clean up.** There is an urgent need to clean up the main drainage channels which are choked with rubbish. This is essential to avoid localized flooding and downstream pollution of water courses and lagoons. Given the limited resources of the agencies responsible for cleaning refuse from drains, much of the initiatives for cleaning must come for the community. However, there must be mobilization support from the agencies concerned if a sustained programme of clearing choked drains is to be achieved. Some portions of drainage channel should be covered to avoid dumping. New sillage channels should be covered to stop dumping of objectionable materials into them.

(7) **Long haulage of wastes.** After refuse is collected it is transported over long distances for disposal. This increases the cost of disposal.

(8) **Lack of hospital and industrial wastes disposal system.** There is no environmentally sound system for collection/treatment of hospital wastes. Similarly, there is no special site for treatment of wastes in GAMA.

### 4.5.2 Objectives

(1) **To provide an efficient waste collection system:**

(2) **To prevent soil and ground water pollution.**

(3) **To encourage waste recycling.**

### 4.5.3 Strategies

(1) **Provide an efficient waste disposal system through:**

(a) **Cooperation.** The introduction of a joint system of operation and administration in all three districts, to realise economics of scale.

(b) **Establishment of transfer stations.** This idea is to have intermediate stations where the refuse is collected from various locations and compacted and transferred to two sites serving roughly the eastern and western parts of the metropolitan area. This will reduce operating costs and travel time;

(c) **Expansion of waste collection coverage.** By increasing the house to house collection coverage and the container service operating stations, the revenue base of the waste management programme can be enlarged. In addition, costs can further be cut by introducing larger containers in both collection systems as well as in the commercial waste management collection service;

(d) **Privatisation.** The experience of Tema should be closely studied, and, if favourable, applied in Accra and Ga districts;

(e) **Improving revenue collection.** Full recovery of costs is not possible due to people not paying in time or not paying at all in the case of areas serviced by container services. The current inefficiency of the collection system can be removed by introducing a decentralized collection service to ensure that everyone who uses the service pays; giving discounts for advance payment; and charging interests for late payment.

**(2) To ensure safe disposal of wastes, this can be done by:**

(a) **Making an environmental impact assessment.** Neither the volume nor the high organic and moisture content of most of the domestic waste make incineration uneconomic in GAMA. This leaves land fill as the principal means of waste disposal sited currently at Mallam and another one to be investigated at the eastern end of the Motorway Industrial Estate. Compositing is used in Accra, with possibilities for use in other places where it is safe and economical. An environmental impact assessment should be undertaken of any proposed dump site to ensure its safety.

(b) **Providing waste disposal system for hospitals and industries.** The existing plants, which have broken down, in most GAMA hospitals are expensive and technically difficult to operate. There is a need to replace it with less sophisticated system for treatment of hospital wastes such as theorematic disinfection system. Industrial wastes should be stored in containers and treated at a special site near the future site for domestic waste dump.

(c) **Rehabilitation of land fill sites.** All closed sites should be properly sealed with top soil, slopes profiled to avoid erosion, planted and grassed, and leachate captured, limited and sprayed back.

**(3) Promote waste recycling.**

The Accra composting plant at Teshie with a capacity of 60 tonnes per day should be used to full capacity.

#### 4.5.4 Cost Summary

Table 4.10 Cost Summary - Solid Waste Management (million cedis)

PROJECT	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
Waste Disposal Facilities	468	5	467	4	467	4	467	3	467	3	2,339	
Reduce Cost of Collection/Disposal	140	500	-	-	63	-	-	-	-	-	203	500
Recycling of Waste Products	-	2	-	2	-	2	-	1	-	1	-	8
<b>Total</b>	<b>608</b>	<b>507</b>	<b>467</b>	<b>6</b>	<b>530</b>	<b>6</b>	<b>467</b>	<b>4</b>	<b>467</b>	<b>4</b>	<b>2,539</b>	<b>527</b>

#### Cost Summary

The total cost of development of a viable sanitation in the five year period is about 3,066 million cedis. Provision of Waste disposal facilities which is spread over the five year period is about 2,355 million cedis which is 77% of the total cost. Establishment of refuse transfer stations (ie to help reduce cost of disposal will also cost 703 million cedis which is 23% of the total cost; while recycling of waste products will cost only 0.3% of the total cost. External funding for Waste Management Department, Accra will mainly come from K.F.W. - Germany.

Table 4.11

## Projects - Solid Waste Management

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
INS 1	Refuse Disposal	Reduce cost of collection/diposable	Establish (2) refuse transfer station		375	WMD	Accra	1993	1993
		"	New land fill site preparation		125	"	"	1993	1993
		"	Purchase of a compact truck	140		"	"	1993	1995
		"	Purchase of an excavator	63		"	"	1995	1995
INS 2	Refuse Disposable	Recycling of Waste. (Compost Plant Teshie)	Rehabilitation of existing Teshie Compost plant.		60	"	"	1994	1997
INS 3	"	"	Construction of treatment plant for industrial chemical and hospital wastes.	100	20	WMD	Accra	1993	1997
INS 4	"	"	400, 10m containers	250	250	WMD	Accra/Tema	1993	1997
INS 5	"	"	16M3 truckheads to pick containers.	720		WMD	Accra/Tema	1993	1997
INS 6	Refuse disposal	Reduce waste volume for haulage to disposal points	Build 10 gas generating plants from the use of vegetable and organic waste.		4	GDA	Amasaman & other areas in in GDA		

## 4.6 TRANSPORT SERVICES

This chapter on Transport and Communications deals with Roads and Highways, Railways, Air Transport and Water Transport (Ports and Harbours)

### 4.6.1 Roads and Highways

#### 4.6.1.1 Background

Responsibility for GAMA roads and highways has been fragmented and not clearly defined. New initiatives to define clear lines of responsibility are now being put in place. Meanwhile responsibility for planning, design, construction and maintenance are shared between the Department of Urban Roads (DUR) on the one hand, and on the other hand the Accra Metropolitan Roads Department (AMRD) for Accra area, the Tema District Engineer's Department for Tema area, and the Department of Feeder Roads for feeder roads within GAMA.

AMRD currently is responsible for maintenance of all the roads and rehabilitation and construction of local roads whilst capital works involving rehabilitation and construction of arterial and collectors remain with the DUR.

There has been very little preventative maintenance, and the routine maintenance programme borders on emergency repairs. Many road pavements and drainage structures are not maintainable anymore. AMRD currently has not the resources - financial, manpower and equipment - to cope.

The existing road network of GAMA comprising about 950 km of road has been developed over the past few decades. Little has been added during the last decade. Meanwhile the population of GAMA has grown from 1.16 million in 1984 when the last census was taken to an estimated 1.4 million in 1990. The economy also has been growing at about 5% per annum. The vehicle population accordingly grew from about 43,000 in 1984 to around 84,000 in 1990. It is expected to reach 93,000 by beginning of 1993 and 115,000 by the end of 1997, the end of the 5-year Plan period. By the year 2000 it would reach about 126,000.

#### 4.6.1.2 Constraints

In Vol.1 of the Strategic Plan - Planning Context - the immediate problems plaguing the road transport infrastructure were identified as follows:

- (i) **Pavement deterioration:** Pavement failures have increased due to increased traffic and heavier axle loads whilst maintenance effort has been minimal. The result is that vehicle operating costs and accident rates have gone up.
- (ii) **Traffic Congestion and delays:** Increased traffic coupled with all the constraints discussed herein have led to growing congestion on the roads especially in the CBD.
- (iii) **Pedestrian/Vehicular conflict:** Narrow and often encumbered pedestrian walkways force pedestrians to use the roadway. Open gutters instead of kerbs endanger safety of both pedestrian and motorists.
- (iv) **Lack of capacity on many road links and intersections:** Poor road surface conditions, insufficient width of roadway, bad intersections and pedestrian presence on the road-way reduce the capacity of the road to admit the flow of increased traffic and congestion results.
- (v) **Missing links in the system:** force motorists to take detours and generate traffic unnecessarily on other roads.

(vi) **Lack of support facilities**, like transit stations and parking lots force motorists to use the roadway instead and aggravate the already congested conditions on the road.

The existing infrastructure is now incapable of coping with the demands on it. These demands are steadily increasing. Urgent measures are needed to halt further decline. If nothing is done about it the network, 30% of which is currently operating at forced flow (i.e. below 15 km/hr) will have about 50% operating at this level in five years time.. The decline could have been halted earlier but series of studies carried out within the past two decades had not been followed up until the Drainage and Roads component of the Accra District Rehabilitation Project (ADRP) was taken up in 1984. The ADRP which focussed on the routine and periodic maintenance of the network attempted to rehabilitate a few sections of road and also complete one carriageway of the Accra-Tema Motorway Sections II and III. But this was insufficient to address the problems of the network. As traffic grew deterioration accelerated and the capacities of more roads were rendered insufficient to cope.

A new programme for traffic management and improvement under the Accra District Traffic Management and Improvement Study (ADTMIS) was accordingly initiated. This concentrated on the Central Business District (CBD) and was aimed at network improvements, traffic management and effective institutional arrangements for sustaining the programme. Meanwhile development activities beyond the CBD i.e. outside Ring Road were compounding the problems within the CBD (60% of all vehicle trips and 75% of person trips to the CBD originated from beyond Ring Road). Moreover, the congestion and delays on the roads were developing in this upper area also. The ADTMIS Study was accordingly extended to cover the area between Ring Road and the Accra-Tema Motorway. Current status of on-going programmes, ADRP and ADTMIS: The road network has now been rationalized for the CBD and the outer area. The recommended framework by ADTMIS would need to be refined in the light of the total Structure Plan for GAMA.

The critical east-west linkage of the Accra-Tema Motorway has been completed with the construction of one carriageway on each of Phase II and III. The other east-west linkage of Achimota road is under construction, whilst the Korle-Bu end of Ring Road is completed to Guggisberg Avenue.

The Priority Works Project tackled maintenance and improvement schemes which have relieved a number of drains of silt, constructed new drains and culverts, provided kerbs, bus lay bys, some pedestrian sidewalks, road line markings and road signs. A lot more remains to be done.

Improvement to some key junctions and intersections have been undertaken by widening, channelization, signalization, and overhead pedestrian crossings.

Some pavement overlays have recently been carried out on some ceremonial routes.

The above works have made some impact even in the face of sharp increases in traffic volumes. The Strategies, Programmes and Projects in the following paragraphs are based on the ADTMIS findings modified or expanded in the light of the Strategic Plan requirements.

#### **4.6.1.3 Objectives**

The Five Year Development Programme has the following objectives:

- (i) Rationalize and improve the existing network to make it efficient and safe for motorists and all other road users.
- (ii) Facilitate accessibility to, and improve mobility within new deprived areas and facilitate orderly development of services.
- (iii) Ensure that the improved traffic and transportation network and its management, planning, development and maintenance operations are sustainable.
- (iv) Ensure that long-term traffic and transportation requirements are provided for.



- (v) Ensure the accessibility of Rural Communities within GAMA to centres of consumption.

The low-cost traffic improvement measures initiated by the ADTMIS programme is expected to be completed by the beginning of this 5-year Development Programme. In this latter programme immediate measures will be taken to ensure proper management and operation of the transportation system, at the same time as attention is turned to continuing the more capital intensive improvement works of the existing network including transportation facilities like parking areas and transit stations. New development not forming part of the existing network is given lower priority. However, some essential arteries and collectors which will provide access to the already fast and newly developing communities would be introduced during the programme, not only for mobility but also to encourage the orderly development of services. Otherwise provision will only be made for the preservation of the right-of-way for the whole of the major network envisaged by the Structure Plan.

#### 4.6.1.4 Strategies

It is realized that it will not be possible to achieve the above objectives to cover all roads - arterial, collectors and local roads-within a five year programme because of the enormity of the task and the limiting contracting capacity, and availability of funding. Concentration of effort will therefore be directed to the arterial and collector network to maximize the investment.

Programmes and projects would be selected based on unmet needs as identified after carrying out a Road Inventory, Intersection Analysis, Traffic Volumes and Rate of Growth Analysis; also patterns of vehicle and pedestrian trips to the CBD, Speed and Delay Studies, Pedestrian Movement studies, Safety and Accident Studies, Technical and Economic Feasibility Studies, and Environmental Impact Assessment.

Measures would also be introduced to slow down the growth of traffic on the roads, including the development of an efficient public transportation system and efficient telecommunication system (Refer also Telecommunications Strategies 4.7.2.4).

#### 4.6.1.5 Other strategies include:

- (i) Road rehabilitation and upgrading of the arterial and collector network including improvements to junctions and intersections, channelization and signalization.
- (ii) Road widening and upgrading.
- (iii) Drainage rehabilitation and improvement.
- (iv) Construction of new missing links in the arterial and collector network and upgrading the rest of existing sections.
- (v) Upgrading existing collectors and construction of new ones to deprived new communities.
- (vi) Strengthening institutional capacity for data collection and analysis, planning, programming and execution of maintenance and development programmes to sustain the network.
- (vii) Safeguarding the right-of-way for the future planned transportation network and facilities. This would be achieved through the acquisition of the right-of-way, demarcation and planting of trees to define corridors/areas.

#### 4.6.1.6 The 5-Year Development Plan 1993-1997

Measures Initiated by the Department of Urban Roads under the ADRP and PWP have started to show some positive results. But the full impact of the initiative is yet to be seen in the metropolis as the vehicle population

PROJECT - TRANSPORT AND COMMUNICATION

TABLE 4.12.1

Roads and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
TRD.001	Road Rehabilitation and Upgrading of the arterial network	Improve the existing network by increasing capacity and level of service to average LOS B (stable flow).	upgrading Patrice Lumumba and Amilca Cabral Rds. northern Link of Kanda High Rd. corridor to Liberation Rd. to 2-lane arterial standard. 2.2km.	549	1540	DUR/Min. of Roads and Highways.	Accra	1992	1995
			Reconstruction 2-lane arterial standard Darkuman Rd. from Winneba Rd. to Motorway 3.3km.	823	2310	"	"	"	"
			Reconstruction to 2-lane arterial standard Kwashieman Rd. from Winneba Rd. to Motoway. 1.4km	350	980	"	"	"	"
			Sakaman Rd. (2,500m) from Guggisberg Ext. to Winneba Road.	1222	3430	"	"	"	"
			Upgrade Giffard Rd. 5.7km	1425	3990	"	"	1995	1997
			Upgrade Ndabaninge S. Rd/4th Circular 3.2km	801	2240	"	"	"	"
			Upgrade Castle Rd. (Museum Circle to African Liberation Circle) 1.5km	376	1050	"	"	"	"
			Upgrade Oblogo Rd. (Ring Rd. to Dansoman 3.4km.	850	2380	"	"	"	"
			Upgrade Guggisberg Av. (Outer Ring Rd. to Ring Rd.) 3.1km.	775	2170	"	"	"	"
			Upgrade Old Winneba Rd. (Outer Ring Rd. to Korle Lagoon Outfall) 2.7km.	677	1890	"	"	"	"
			Upgrade Cantonments Rd/2nd Circular Rd. including improvements to Danquah Circle. 2.4km.	602	1680	"	"	1992	1994

TRANSPORT AND COMMUNICATION

Table 4.12.1

Road and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (€)	LC (€)				
TRD.002	Road Widening and upgrading including improvements critical intersections	Improve the existing network by increasing capacity and level of service to average LOS B (stable flow)	Liberation Road to 4-lanes divided carriageway Tetteh Quarshie Circle to Sankara Circle including change of geometrics at Akuafo Circle	1421	3600	DUR	Accra	1992	1996
			Independence Avenue to 4-lanes divided carriageway Sankara Circle to Kinbu Road including resign and construction Sankara Circle and Kinbu/Barnes/Independence Av. Traingle.	1639	4400	"	"	1993	"
			Newtown Road (Nsawam Rd. to Achimota Rd.)	1113	2730	"	"	1994	"
			Nsawam Rd./K. Nkrumah Av. widen to dual carriageway (Neoplan to Aditrom Rd.)	7144	7000	GHA	"	1994	"
			High Street/28th February Rd. widen to 4-lane divided carriageway.	624	2000	"	"	1993	"
			Outer Ring Road (Winneba to Bubiashie Road) 7.5km.	3546	1769	DUR	"	1995	"
			Outer Ring Rd. (Oblogo Rd. - Winneba Rd.)	624	910	"	"	1995	"
			Kinbu Rd. to Agboghloshie. Re-align Agboghloshie end. Also re-design and construct critical intersections with Kojo Thompson Rd. and K.Nkrumah Avenue	196	196	"	"	1994	1996
					20,836				
TRD.003	Pavement and Drainage Rehabilitation	Improve the existing network by increasing capacity and level of Service to Average LOS B (stable flow).	Asphalting main roads not included in TRD.001, TRD.002 and TRD.004, rehabilitating drainage and footwalks.	451	400	DUR/AMA	Accra/Tema	Ongoing	1993

TRANSPORT AND COMMUNICATION

Table 4. 12.1

Road and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
TRD.004	Construction of Missing Links in the arterial and collector network and upgrading the rest of existing sections.	Improving the existing network by increasing the level of service to average LOS B (stable flow)	New Kanda High Road - Castle Rd. to Achimota Rd. including grade separation at Ring Rd. intersection. 3.8km	951	2660	DUR	Accra	1992	1995
			New N-S Arterial thro' Tesano Ring Rd. West to Motorway New Link study and design 1000m; Upgrade rest. 4000m.	1477	2880	"	"	1995	1997
			Outer Ring Rd. - Bubiashie Rd. to New Town Road Link. study and design Constr. missing link 1,500; upgrade rest 3,500m	1004	3500	"	"	"	"
			Outer Ring Rd. - New Town Rd. to Kanda High Rd. Constr. missing link Nima R'about to Kanda High Rd. 400m; Upgrade rest 1,100m.	376	1050	"	"	1994	"
			Abbossey Okai to Oblogo Rd. link 600m.	150	420	"	"	1995	"
			Outer Ring Rd. - Old Winneba Rd. to Oblogo Rd. Constr. missing link 2800m; upgrade rest 3200m	902	4200	"	"	1995	"
			Guggisberg Avenue Extension. Outer Ring Rd. to Dansoman Rd.; Constr. missing link 600m; Reconstr. rest 1,400m	500	1400	"	"	"	"
			Brewery Rd.- Kwame Nkrumah Avenue	75	210	"	"	"	1994

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
TRD.005	Extensin of arterial network and construction of collectors to new deprived communities	Open up areas of new development for mobility and orderly provision of services (Study and Design)	Teshie-Ashalebotwe N-S link 11.5km.	2685	8050	DUR/AMA	Accra	1995	1997
			East Legon Ext. Ashalebotwe E-W link 7km	1632	4900	"	"	"	"
			New W-E arterial to Tema: . Naaflajor-Upper R.R. 6.5km . Upper R.R. Tema 5km.	2741	3500	"	Accra/Tema	"	"
			Achimota-Legon-Haatso N-S link 10km.	2335	7000	"	Accra	"	"
			Kwabanya N-S link to Nsawam Rd. 6.5km	1515	4550	"	"	"	"
			Upper Ring Road: . Ashaiman Rd.-Motorway 4km. . Motorway - Ashalebotwe 4.5km . Ashalebotwe - Adenta 7.5km . Adenta - Kwabanya 8km . Kwabanya - Nsm Rd. 3km . Nsawam Rd. - Sowutuom 8km . Sowutuom -Motorway 5.5km	9682	28,350	"	Accra/Tema	"	"

**TRANSPORT AND COMMUNICATION**

**Table 4.12.1**

**Roads and Highways**

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
TRD.006	Provision of pedestrian facilities	Improve existing network by increasing the level of service to average LOS B (stable flow) and also assure safety of pedestrians	Construction of overhead pedestrian crossings	4475	112.0	DUR/AMA	Accra	1993	1994
			Provision of barriers	75	5.0	.	.	.	.
				12.10	117.0				
TRD.007	Safeguarding the ROW for the future development of the planned Transportation Network and facilities	Ensure that the long term traffic and transportation requirements are provided for	Preliminary Engineering Studies for the proposed arterials and facilities listed below them	.	27.0	DUR/GHA	Accra/tema	1993	1994
			Demarcate, acquire, and plant trees to define the corridors/areas for . Orbital Motorway . New Upper Ring Road including reservation for Urban Railway . New W-E Link between Orbital Motorway and the Accra-Tema Coastal Route, crossing the New Upper Ring Rd. (east of Madina) Accra-Tema Motorway and New W-E Axis to Teshie. . Bus and Railway terminals/main stations	.	1200	Lands Commission/DUR	.	.	.

TRANSPORT AND COMMUNICATIONS

Table 4.12.1

Roads and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (€)	LC (€)				
TRD.008	Institutional Strengthening AMRU and Tema District Engineers Dept. for maintenance and capital works; also the Motor Traffic safety and vehicle performance	Ensure that the improved traffic and transportation network and its management planning development and maintenance operations are efficient and sustainable	Provision of the following facilities:- - Office equipment for HQ/Sub District offices	26	7.0	DUR/AMA/TMC	Accra/Tema	1993	1995
			- Field and laboratory equipment for traffic studies and soil/investigation	0.20	-	DUR/AMA/TMC	Accra	1993	1997
			- Maintenance equipment	1275	-	DUR/AMA/TMC	Accra/Tema	"	"
			- Workshop equipment	376	-	"	"	"	"
			- Staff Recruitment and Training professional, Sub-professional and technical	102	15.0	"	"	"	"
			- Transport	113	-	"	"	"	"
			- Buildings/offices, workshops, stores for sub-district yards	376	94.0	"	"	"	"
			.....Maintenance Management System						
TRD.009	Construction of missing links and watercrossing in the feeder Rd. network within the Metropolitan Planning Area.	Improved mobility and accessibility to urban and rural areas within GAMA	- Bridge across River Densu near Ashaladja and approaches	38	5.0	DFR	Ga Dist.	1993	1993
			- 2km new road link between Ashaladja and Ayikaiooblo	60	1400	"	"	1994	1994
			- Bridge over River Dobro between Oduntia and Amasaman and approaches	38	5.0	"	"	1994	1994
			Bridge over River Nsaki between Oduman and Ablekuma, and approaches	38	5.0	"	"	"	"

PROJECT - TRANSPORT AND COMMUNICATIONS

Table 4.12.1

Roads and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (€)	LC (€)			START	COMP.
TRD.010	Road Rehabilitation	Re-ceiling of existing network	SOS Road (C.10)2km		60	DUR	Tema	1993	1993
			C.10 to C.11 Road. 2.5km		90		"	"	"
			C2 Aggrey Road 2.7km		32		"	"	"
			Salifu Dagorti Road (G.2) 1.5km		34		"	"	"
		Improvement and Re-surfacing	Okomfo Anokye Road. 1km		30			1994	1994
			Naval Base Road and Loops. 2.2km		273			Ongoing	1992
			VRA Quarters. 2km		102			1993	1993
			C6 to C.10 Road. 2km		102		"	"	"
		Re-gravelling	C.6 Road. 4km		44		"	1993	"
			C.10 Road. 4km		44		"	"	"
			C.11 Road. 4km		44		"	"	"
			C.12 Road. 4km		44		"	"	"
		Road Line Marking	55km of Road in Tema		55		"	"	"



PROJECT - TRANSPORT AND COMMUNICATIONS

Table 4.12.1 Roads and Highways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
TRD. 011	Road Improvement	Construction of Roadside drains	C.S Road. 2km	80	DUR	Tema	1993	1993
			Tema New Town Road. 2km	130		Tema	Ongoing	1993
			VRA Quarters C.10 4km	154			1993	1993

escalates. An appreciable impact is not likely to be achieved until the programme is substantially completed. The pace of the rehabilitation, improvement and construction of new linkages need to be increased, while traffic management measures and policies to reduce the growth of traffic are put in place.

The 5-YDP is designed to continue with Department of Urban Roads initiative and additionally provide further essential programmes/projects which will help achieve the objectives stated above. During the programme, it is expected that 107 km of existing roads would be improved to make them more efficient and safe at a cost of US\$83 million and 61,216 million cedis. 785 km of arterial and collector roads would be built to open up areas of new development at a cost of US\$55 million and 28,350 million cedis, while the right of way of the whole of the future planned transportation network would be safeguarded against encroachment with a provision of 1,230 million cedis. Mobility between rural and urban communities would be improved by constructing 3 bridges in the feeder road network. To ensure sustainability of the road network within GAMA, the three road departments of Accra Metropolitan Authority, Tema Municipal Authority and Ga District would be strengthened.

## **4.6.2 RAILWAYS**

### **4.6.2.1 Background**

Ghana Railways was for decades directly associated with Ports and Harbours, presumably because they were complementary and directly involved with transportation of freight as their major concern. Ghana Railways Corporation now operate as a separate entity from the Ghana Ports and Harbours Authority.

The involvement of Ghana Railways in passenger transport is basically inter-city. Within GAMA, a very limited passenger service has been in operation between Dome and Central Accra, and between Central Accra and Tema Harbour. Recent development of new communities along these routes has increased passenger traffic along these routes even with the inadequate facilities available. If the service can be provided efficiently and regularly it is estimated that about 100,000 passenger journeys can be made a day on existing routes. Recently a programme was initiated by the Ministry of Transport and Communications to revamp the railway system to cope with future demand which is expected from the Economic Recovery Programme. However demand forecasts have been based mainly on requirements of freight traffic and inter-city passenger traffic. The above developments now offer a unique opportunity to use the current railway infrastructure as a base for developing a badly needed mass transit system which can make an impact in meeting the growing transportation demand in GAMA.

### **4.6.2.2 Constraints**

(i) The railway track remains a single line. Signaling must therefore be very efficient to minimize accidents. The rehabilitation of the railway network is taking care of this and a colour light signaling system and microwave telecommunications backup system are being installed. The railroad itself is being rehabilitated.

(ii) There are however no rolling stock of suitable design. The limited passenger rolling stock are designed for inter city operation. Carriages with seating arrangement and doors for safety and quick entry and exit would be needed.

(iii) Although the Accra-Tema Railway passes through the new communities referred to in Vol 1, there is only one ill-equipped station/platform facility not easily accessible to any of the communities.

(iv) Passenger services are limited on the Accra-Tema route for instance, workers service is provided in the morning and at close of day.

### 4.6.2.3 Objectives

- (i) The 5-YDP for urban railway, has as its objective to provide a safe and fast transit system using the current basic infrastructure facilities, rehabilitated and improved, with support facilities of suitable design.
- (ii) The 5-YDP also aims at providing for the long term development of a rapid mass transit system.

### 4.6.2.4 Strategies

The current rehabilitation programme of the Ministry of Transport and Communications was initiated mainly with freight traffic in view. The new initiative to introduce substantial urban passenger traffic would require the following strategies to be pursued:

- (i) **Rehabilitation and improvement:** Rehabilitation and improvement of the existing infrastructure to ensure their safe performance.
- (ii) **Provision of adequate and suitably designed carriages:** Light electric passenger rail cars comprising, about three articulated bogies with controlled doors will be provided.
- (iii) **Provision of suitable railway stations/platforms:** New facilities to serve urban passengers along the existing routes would be provided. Facilities would include railway stations/platforms, parking areas and access roads.
- (iv) **Institutional arrangement:** Establishment of an Urban Railway Unit within the Ghana Railways Corporation at Accra is envisaged.
- (v) **Time Tables:** New scheduled time tables capable of meeting demand, including peak-hour demand will be developed.

### 4.6.2.5 The 5-YDP 1993-1997

The 5-YDP is designed to continue the Ministry of Transport and Communications initiative to address deficiencies and assure safe operations of the railway system. It specifically however identifies projects which will usher in a rapid mass transit concept to help meet growing transportation needs in the metropolis. These include the procurement of suitably designed carriages, electrification of the urban railway at a cost of 1702 million cedis and construction of suitable railway stations/platforms for about 283 million and 95 million cedis. The future right-of-way would be safeguarded against encroachment for about 106 million cedis additional to provisions made within road corridors.

## 4.6.3 AIR TRANSPORT

### 4.6.3.1 Background

Kotoka International Airport (KIA) is the only air entry point in Ghana. It has however only one runway. To carry out major repair/rehabilitation work on the runway, flights often have to be rescheduled or the runway completely shut down. This is commercially undesirable. A second runway would have solved the problem. The location of KIA from environmental and spatial considerations is however undesirable. The initiative has been taken by the Civil Aviation Authority to re-locate the International airport to an area which is safe, environmentally acceptable and has the space and services to support a suitable international airport.

The relocation is a long term programme. Meanwhile air traffic is growing, especially freight traffic which between 1989 and 1990 registered a growth of 23.2%.

### 4.6.3.2 Constraints

(i) **Infrastructural Services:** The infrastructural services have suffered from neglect. The runway shows serious signs of distress and efficiency of the storm water drainage and sewerage systems are suspect. There is also severe congestion at the car park on peak flight days.

(ii) **Technical Equipment:** Although there has been an improvement in technical equipment in recent years KIA still lags behind in modern navigational aids, communications, lighting etc.

(iii) **Handling facilities:** The growth of aircraft, passenger and freight traffic has rendered the facilities for handling them also grossly inadequate and obsolete.

### 4.6.3.3 Objectives

(i) To bring KIA to acceptable international standards of safety and convenience.

(ii) To ensure smooth flow of traffic of people and goods within the terminal area.

(iii) To initiate action to acquire the site for a new international airport and control development of the environs.

### 4.6.3.4 Strategies

(i) Until funds can be made available for relocating KIA, the runway should be rehabilitated to international standard;

(ii) Infrastructural services will be rehabilitated and brought up-to-date;

(iii) aircraft, passenger and freight handling facilities will be modernised and capacities systematically increased to handle projected traffic over a 10-15 year horizon when a new international airport would be expected to be operational

(iv) technical equipment will also be updated to cope with international requirements of safety.

### 4.6.3.5 The 5-YDP 1993-1997

Although some projects have been implemented under the PIP, circumstances have delayed a number of other projects essential to achieving the objective stated above. The 5-YDP is designed to continue the Ministry of Transport and Communications initiative to address the deficiencies in air transportation and additionally address other pressing issues identified by the Strategic Plan, which will go to achieve the above stated objectives.

Provision has been made to rehabilitate the runway and taxiways at the cost of 2276 million cedis. Aircraft, passenger and freight handling facilities, as well as technical equipment will be updated at the cost of 7925 million cedis. A suitable site for a new international airport will be selected and acquired; and development controls over the environs will be instituted. A provision of 1,250 million cedis has accordingly been made. Projects have been arranged according to strategies stated above.

## PROJECT - TRANSPORT AND COMMUNICATIONS

TABLE 4.12.2

Railways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
TRL001	Rehabilitation and improvement of the existing infrastructure	Provide a safe and fast mass transit system using the current basic infrastructure facilities, rehabilitated and improved with support facilities of suitable design	- Rehabilitation of the existing Permanent Way, drainage structure, building, and station platforms	-	100	GRC	Accra/Tema	Ongoing	1994
TRL002	Provision of adequate and suitably designed carriages and electrification of Accra-Tema and Accra-Dome line	Ditto	- Electrification of Accra-Tema and Accra-Dome line  - Purchase of light rail urban passenger cars including spare parts and training	1692	10	GRC/MOTC	Accra/Tema	1994	1997
TRL003	Provision of suitable railway stations/platforms and facilities	Ditto	- New sub-urban Railway Station including parking areas and access roads	188	95	GRC	Accra/Tema	1993	1997

Project - TRANSPORT AND COMMUNICATIONS

Table 4.12.2 Railways

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
TRL004	Establishment of an Urban Railway Unit in the Accra office of Ghana Railway Corporation	Provide safe and fast mass transit system using the current basic infrastructure facilities rehabilitated and improved with support facilities of suitable design	- Provision of offices - Equipment - Training	38 50.0 4 0.8 11 1.7	GRC	Accra/Tema	1993	1995
				53 52.5				
TRL005	Safeguard the ROW for the future Urban Railway network	Extend the established Urban Railway Mass Transit system to in-serviced communications as a complement to the road mass transit system	- Preliminary Engineering and feasibility studies, to be followed by - Acquisition, demarcation and planting of trees to define corridors	4 2.0 - 100.0	Lands Commission/GRC		1993	1994

PROJECT - TRANSPORT AND COMMUNICATIONS

TABLE 4.12.3

Air Transport

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
TRA.001	Rehabilitate Runways and ways including shoulders and parking areas	To bring KIA to acceptable international standards of safety and convenience	- Pavement repairs and overlay including improvements to drainage	1203	800.0	Ghana Civil Aviation/Auth/MOTC	KIA/Accra	Ongoing	1993
			- Rehabilitate taxiway apron	1881	85.0	"	"	"	"
				1391	885.0				
TRA.002	Up-date aircraft, passenger and freight handling facilities increasing their capacities systematically to handle projected traffic over a 10-15 yr. horizon	Ditto	- Rehabilitate Aircraft Hangers and Workshop	188	250.0	CAA/MOTC	KIA/Accra	"	"
			- Rehabilitate and expand Passenger Terminal (ph2)	376	200.0	Ditto	Ditto	Ongoing	1993
			- Rehabilitate Control Tower Building	376	100.0	"	"	1993	"
			- Construct New Freight Terminal including Cold Store	2011	125.0	"	"	"	1994
			- Rehabilitate Old Car Park	207	105	"	"	"	1993
			- Construct New Car Park North of existing (phase 2)	267	150	"	"	1994	1994
				2425	2055				
TRA.003	Up-date technical equipment to meet international requirements	Ditto	- Rehabilitation of VHF equipment	4	-	CAA/MOTC	KIA/Accra	1993	1997
			- Conversion from instrument landing to microwave landing system	752	30.1	Ditto	Ditto	1993	1997
			- New satellite communication system with neighbouring flight information centres	376	15.0	"	"	"	1993
			- New satellite communication system direct with aircraft	564	22.6	"	"	1997	1997
			- Electrical/Electronic and Mechanical workshop equipment	282	8.5	"	"	1993	1995
			- Passenger handling equipment to Aircraft through terminal.	376	15.0	"	"	1995	1997
				2354	91.2				

# Project - TRANSPORT AND COMMUNICATIONS

Table 4.12.3 Air Transport

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
TRA.004	Miscellaneous Civil works	Ditto	<ul style="list-style-type: none"> <li>- Perimeter fencing at KIA and transmission/Receiving Stations</li> <li>- Construction of drains KIA and Transmission/Receiving Stations</li> <li>- Fuel Farm expansion</li> <li>- Construct new alternative access road to airport</li> </ul>	<ul style="list-style-type: none"> <li>- 200.0</li> <li>- 50.0</li> <li>301</li> <li>188</li> </ul>	<ul style="list-style-type: none"> <li>CAA</li> <li>.</li> <li>.</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>KIA, La and Nkwantanang</li> <li>.</li> <li>.</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1993</li> <li>.</li> <li>.</li> <li>1994</li> </ul>	<ul style="list-style-type: none"> <li>1997</li> <li>.</li> <li>.</li> <li>1996</li> </ul>
TRA.005	Rehabilitation and construction of infrastructural services (electricity, water, telecommunications, sewerage, solid waste disposal systems; access roads)	Ditto	<ul style="list-style-type: none"> <li>- Replace old services with new higher capacity components</li> <li>- New Central Sewerage System and Public toilet facilities</li> </ul>	<ul style="list-style-type: none"> <li>75</li> <li>102</li> </ul>	<ul style="list-style-type: none"> <li>GCAA</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>KIA/Accra</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1993</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1995</li> <li>.</li> </ul>
TRA.006	Establish suitability of the site for new international airport	To provide for the long term needs of aviation facilities	Carry out preliminary engineering studies: topographical, hydrological, geotechnical; availability and accessibility of infrastructural services - road water, electricity, telecommunications etc; establish feasibility and environmental impact.	<ul style="list-style-type: none"> <li>75</li> <li>177</li> </ul>	<ul style="list-style-type: none"> <li>AESC</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>Tema-Aflaa Road near Prampram</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1993</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1994</li> <li>.</li> </ul>
TRA.007	Acquire site for the new international airport and establish controls over development of environs	Ditto	Demarcate, acquire and fence the area to define the property (2,500 ha); define planning standards for the environs and monitor development	<ul style="list-style-type: none"> <li>.</li> <li>1250.0</li> </ul>	<ul style="list-style-type: none"> <li>Land Comm./GCAA</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>.</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1993</li> <li>.</li> </ul>	<ul style="list-style-type: none"> <li>1995</li> <li>.</li> </ul>



Project - TRANSPORT AND COMMUNICATIONS

Table 4.12.3 Air Transport

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (f) LC (f)	EXECUTING AGENCY	LOCATION	YEAR START	YEAR COMP.
TRA.008	Provision of support services	To improve aviation support services	- Provision of information services arrivals/departures, taxi, hotel, tourist, business, currency, directional signs etc. in English and French	752	GCAA	KIA/Accra	1994	1997
			- Provision of snack bars, restaurants, duty-free shopping	188	.	.	1994	1997
				940				
				8351				
			Total Air Transport	5311				

PROJECT - TRANSPORT AND COMMUNICATIONS

TABLE 4.12.4

Water Transport (Ports and Harbours)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (€)	LC (€)				
TRW.001	Rehabilitation of Tema Fishing Port Phase.II	To develop the full poten- tial of Tema Harbour and Port	Extension of the north-south wharf dredging to 7m depth and construc- tion of lay-by wharfs, a 200m finger jetty, fencing and miscellaneous civil works	5114	562	GPHA	Tema	Ongoing	1993
TRW.002	Road Access to Tema Port	To improve access to Tema Port	Design a divided highway and cons- truct to higher pavement standards to access road from Motoway Roundabout to Tema Port, including improvements to drainage and intersections.	3870	730	GPHA	"	1993	1994
TRW. 003	Port Rehabilitation	To improve port facilities	Additional paving works in Tema port covering over 60,000m <sup>2</sup>	1364	225	GPHA	Tema	1993	1994
TRW.004	Redevelopment of the old Accra Port	To develop the full poten- tial of the Old Accra Port as a Fishing Port and a tourist attraction.	<ul style="list-style-type: none"><li>- Rehabilitate the access roads to the port</li><li>- Construct car parks for 120-150 vehicles</li><li>- Rehabilitate the pedestrian steps down the cliff to the port area</li><li>- Rehabilitate the jetty.</li><li>- Rehabilitate the slipway</li><li>- Construct a Fish-Market with stalls, and facilities such as snack bars, drinking bars and chop bars.</li></ul>	150 113 - 75 38 -	65.0 50.0 2.0 50.0 5.0 50.0	Private Invetors /GPHA " " " " "	James Twn, Accra " " " " "	1993 " " " " "	1997 " " " " "

Project - TRANSPORT AND COMMUNICATIONS

Table 4.12.4

Water Transport (Ports and Harbours)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
FC (€)	LC (€)								
	Redevelopment of the Old Accra port	To develop the full potential of the Old Accra Port as a tourist attraction	<ul style="list-style-type: none"> <li>- Rehabilitate and extend infrastructural services - water supply, electricity, sewerage, solid waste management street lighting and flood lighting for the market and port area.</li> <li>- Provide support services: Ice block plant; cold stores; Fuel station; Workshops for outboard motors, net repairs; boat</li> <li>- canoe repairing and rehabilitation; public toilets; showers and rest places for fishermen.</li> <li>- Rehabilitation of the Light house</li> </ul>	263	125.0	Fisheries Dept/ GPHA	James Twn Accra	1993	1997
				226	752.0	"	"	"	"
				4	2.0	"	"	"	"
TRW.005	Provision of basic servicing facilities at fishing canoe landing stations	Provide for improved fishing canoe landing facilities	<ul style="list-style-type: none"> <li>At each landing station:</li> <li>- Construct and equip</li> <li>. outboard motor repair shop</li> <li>. canoe repair shed</li> <li>. servicing station</li> <li>. a small cold store and ice block plant</li> <li>- Construct access roads</li> </ul>	94	10.0	"	Bortianor, Chorkor, Osu, Teshie, Nungua, Mongne	1993	1995
				-	100.0	"	"	"	"

TABLE 4.12.5 PROJECT - TRANSPORT AND COMMUNICATIONS

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
TRL-001	Reservation of corridors for infrastructural transmission line	Provide safe and convenient location of transmission and pipe lines	<ul style="list-style-type: none"> <li>- 100m corridor for all 33kv and above electricity transmission lines</li> <li>- Corridor for proposed irrigation/ water supply canal from Akosombo or kpong to raw water reservoir north of Afienya</li> <li>- Corridor for fuel pipeline from Tema Refinery to Akosombo port</li> <li>- Clear lines of sight between microwave telecommunication stations</li> <li>- Location studies for all four above and demarcation.</li> </ul>			GAMA  Tema Dist./ER		

## **4.6.4 WATER TRANSPORT (PORTS AND HARBOURS)**

### **4.6.4.1 Background**

Recent rehabilitation of Tema Main Harbour and Port and strengthening of the Ghana Ports and Harbours Authority has remarkably improved the performance of the harbour. The repair and replacement of infrastructural services, buildings and equipment were concentrated on the main harbour and completed in 1991. Earlier, the rehabilitation of the inner harbour of the Fishing Port had been completed in 1990, but the demand for space for deep sea fishing and tuna vessels remained to be satisfied. Meanwhile 90% of the Ghana Tuna Fleet are being landed in Abidjan. At Tema both wooden vessels and steel vessels use the inner harbour.

Substantial amount of fish is landed also at the Accra Old Port and at beach landings at Bortianor, Chorkor, Osu, Teshie, Nungua, Mongue and elsewhere. Some activities at these landings are of cultural interest.

### **4.6.4.2 Constraints**

#### **Tema Fishing Port**

(i) Lack of space at Tema Fishing Port for deep sea fishing vessels and the tuna fleet has compelled these boats to land at Abidjan. Any vessels which can land at Tema have to compete with the smaller wooden boats and sometimes suffer damage. Pre-berthing delays are common.

#### **Accra Old Port and Canoe Landing Stages**

(ii) Facilities at Accra Old Port for landing, repair, servicing and transporting canoes and catch are very poor, while at other landing stages, (some enumerated above), they are non-existent. There are no storage facilities.

#### **Access Road to the Port of Tema**

(iii) The main coastal access road to Tema Port is congested and is now not capable of sustaining traffic demand on it.

### **4.6.4.3 Objectives**

The 5-year Development Programme has the following objectives:

- (i) To develop the full potential of the Tema Harbour and Port.
- (ii) To improve access to Tema Port.
- (iii) To develop the full potential of the Accra Old Port as a fishing port and a tourist attraction.
- (iv) To provide improved fishing canoe landing facilities along the coast of GAMA.

Considering that 90% of our deep sea fishing vessels and the tuna fleet have to berth outside the country the construction of the outer fishing harbour is given top priority in the programme. The World Bank estimated the financial rate of return to be 59.1%. A study is being initiated by Ministry of Transport and Communication to reassess its viability prior to start of the current 5-Year Development Programme.

#### 4.6.4.4 Strategies

The improvement in performance of Tema Port and Harbour operations with the strengthening of the Ghana Ports and Harbours Authority and the rehabilitation of infrastructure and facilities is to be followed up by the expansion of the fishing harbour to accommodate the deep sea vessels. This will release space for the smaller boats.

Over 20,000 persons are estimated to be employed in the fishing industry. While most of the fish catch are handled at Tema Port, a large number of coastal dwellers depend on small boats and canoes and their catch for their livelihood. The cultural ties with the sea of these communities cannot be under-estimated. Improved landing facilities and provision of servicing facilities will encourage and preserve a fishing culture/tradition whilst contributing to the nutritional needs of the coastal communities.

#### 4.6.4.5 The 5-Year Development Programme

The 5 year development Programme for Tema Port and Harbour is a follow up of the rehabilitation and development initiative of the Ministry of Transport and Communications and the Ghana Ports and Harbours Authority. The outer harbour of the fishing port would be constructed to accommodate the deep sea vessels at a cost of about US\$5,114 million in foreign exchange and 560 million in local currency.

The Accra Old Port will be rehabilitated and provided with facilities and support services at a cost of about 1,970 million cedis; whilst six selected landing stages are also provided with basic servicing facilities and access roads for 1284 million cedis.

Table 4.13 Cost Summary - Transport Service (million cedis)

Sector	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
<b>Roads and Highways</b>	16,528	7,222	15,902	7,316	13,267	6,468	8,613	4,116	4,351	2,004	58,661	27,126
<b>Railways</b>	80	107	270	197	797	26	226	22	564	8	1,937	360
<b>Air Transport</b>	3,222	1,841	3,340	1,853	902	1,219	546	190	846	208	8,851	5,311
<b>Water Transport</b>	8,370	1,422	2,392	615	207	241	207	240	135	210	11,311	2,728
<b>Total</b>	28,200	10,592	20,584	9,981	15,173	7,954	9,592	4,568	5,896	2,430	80,760	35,525
<b>Total %</b>	33.75	29.59	26.63	28.27	19.66	22.43	12.35	12.86	7.61	6.88	100.0	100.0

#### 4.6.4.6 Cost Summary

The high percentage of about 30% per annum of the total budget of 80,760 million cedis in foreign currency and 35,525 million cedis, in the first two years is accounted for by the large number of important road projects which must be completed within the shortest possible time to alleviate the current severe congestion in the city. Immediate action is also necessary to safeguard the planned transportation network from encroachment and frustration. Detailed engineering studies have been completed for most of the road projects which are ready for execution. Local contracting capacity is expected to build up by 1993 to cope with the extraordinary demand during the first two years.

## 4.7 POST AND TELECOMMUNICATIONS

### 4.7.1 Postal services

The Postal Services Division of Posts and Telecommunication Corporation provides the following services. Private Letter Boxes, Parcel Mails, Overseas Mail, Airmail, Money Order, Postal Services, and Philatelic. Currently the Postal Division operates two main channels of delivery. These are house to house and private letter box deliveries.

Delivery of letters by these methods is as follows: Ordinary Mail Service - 95% private letter box; Express Mail Service - 4% house to house delivery; and Expedited Mail Services (EMS) - 100% house to house Delivery.

There are 41 Post Offices in GAMA with 36,380 post boxes. In addition, there are 17 agencies. The only rural post office is at Kpone east of Tema. Ga District has only two postal agencies at Pokuase and Amasaman. The three main sorting post offices are Accra Central and Accra North and Mamprobi.

### 4.7.2 Demand for Services

The estimated back log of application for post office boxes is over 15,000. The demand is high in most areas especially the Central Business District (CBD). There are a number of areas where postal services are poor or non-existent for example Dzorwulu, Dome, Sports Complex and East Legon. Currently, the number of heads per boxes is 45. If demand is to be satisfied this ratio will need to be reduced to 11. By the year 1997, an additional 47,000 boxes will be required in the metropolitan area.

In response to demand for a rapid and reliable service, the Special Mail Service was initiated in 1987. This service has shown a steady growth since its inception. Expedited Mail Service (EMS) commenced operations in April 1990 providing both local and international courier service. In each field of service, steady and rapid growth has been achieved. The ordinary mail service has increased by over 10% a year in the past years.

### 4.7.3 Constraints

The Postal Service encounters a number of problems with the expedited and express mail house to house delivery service.

These include:

- (i) **Lack of Street Naming and Poor House Numbering:** Difficulty in finding an address due to lack of street naming and house numbering; compound nature of most homes makes it difficult to find the individual to whom a letter is addressed; often people refuse to receive letters for other members of the household; and some houses are completely walled in and mail cannot be delivered especially if the occupier is out.
- (ii) **Inadequate Security in Postal Service:** Pilfering of mail - especially for money, is a problem within the postal service. Pilfering occurs not only within the service but after delivery where someone may have collected mail on a person's behalf. Some of these problems are caused by poorly sealed packages, transparent envelopes and packages and the practice of sending money in envelopes.
- (iii) **Poor addressing of mails:** All mail in GAMA is sorted at the Accra Central or Accra North Post Offices. International inward mail is sorted at Mamprobi. The collection and sorting system is severely hampered by poor writing of addresses, incorrect positioning of stamps which requires hand franking and an absence of a system for more orderly sorting of mail at local post offices.

Some parts of Accra still have a suburban post box network with regular collection. This was convenient for after hours posting where there was not a nearby post office.

(iv) **Inadequate post office facilities:** There is a shortfall of about 10 post offices in the metropolitan area. In other post offices there is insufficient room to accommodate the expansion of private boxes. Equipment at many post offices is old and the standard of training, whilst improving, is insufficient to satisfy the demands of a modern postal service, because the Postal Division has not got its own School.

(v) **Shortage of private boxes:** Lack of room for expansion of box facilities in the existing post offices and lack of foreign exchange to import the boxes.

#### 4.7.4 Objectives

The objectives for the mail services are to:

- (i) Provide a quick and reliable postal service.
- (ii) Improve the range of postal service.
- (iii) Expand postal services.
- (iv) Improve security in the postal system.

#### 4.7.5 Strategy

(a) **Build New Post Offices:** New subdistrict post offices will be provided in major commercial shopping centres and major transit centres. Postal agencies will be provided where demand is high as an interim arrangement before new post offices are constructed. Residential areas requiring additional post offices include, sports complex, East Legon and Dome.

(b) **Increase Post Boxes:** About 47,000 new boxes will be provided in more convenient locations closer to demand. This plan is aimed solely at providing sufficient letter boxes of about 50,000 for the long list of applicants waiting for boxes. P&T will provide estimates for other facilities to go into the new post offices. A list of locations and number of boxes recommended is shown below:

New Locations	Boxes
1. Dzorwulu	2000
2. Dome	500
3. Kwashieman	1000
4. East Legon	2000
5. Abelenkpe	2000
6. Adenta	2000
7. Sakumono	2000
8. Taifa	500
9. Latebiokorshie	2500
10. Ofankor	500
11. Mamobi	2000
12. Odorkor	2000
13. Osofo Dadzie	1500
14. Zongo Abossey Okai (Russia)	1500
15. Kanda	1000
16. Haatso	500
17. Ashaley Botwe	500
18. Tema Shopping Centre	2000



19. Nii Bolman	500
20. Akweteman	500
21. Community 2 Tema	1000
22. Sakaman (Blue Lagoon)	500

Existing Locations	Boxes
--------------------	-------

1. Adabraka	100
2. Trade Fair Centre	500
3. Cantonments	2000
4. Osu	2500
5. Mamprobi	2500
6. Kaneshie	2500
7. Accra Central	4000
8. Abeka	2000
9. Abossey Okai	500
10. Community 1 Tema	2500

Upgrading	Boxes
-----------	-------

1. Amasaman	500
2. Pokuase	500
<b>Total</b>	<b>46,600</b>

(c) **The Central Post Office Boxes:** Boxes will be allocated at higher rental to the business community in the CBD to generate more revenue to improve the postal service.

(d) **Introduce Post Codes:** This will enable sorters to ensure that mail gets to a box number in the district. The persons collecting the mail may then recognise illegible hand writing and pass it onto the person to whom it was addressed.

(e) **Improve Street Numbering System:** The lack of street names and numbers is a major constraint on the operation of the EMS. Provision has been made elsewhere in the plan to begin a programme of street naming and numbering. The post office would work with the district assemblies on the numbering system, following the conventional system of odd numbers on one side of the street, even on the other.

(f) **Rationalise Mail Sorting:** Inward and outward mail is currently sorted at three centres in Accra. There is a need to rationalise and expand sorting operations. In the long term, the post office should construct a new mail sorting and distribution centre for international, national and local mails to replace the existing centres.

(g) **Improve mail security:** Pilfering of mail has been a problem in the postal service, caused mainly by people sending money through the mail. Steps are being taken by the post office to reduce this. However, the public will be informed about the danger of using light paper envelopes and packages which are semi-transparent. Promoting the use of money orders should also be encouraged to reduce the temptation of theft.

(h) **Re-introduce mail collection boxes:** There once operated a very efficient collection service from residential post office boxes in the inner city areas. Many of the red boxes are still in place. In order to provide a more convenient local and after hours collection service this should be reintroduced. Boxes should be introduced at major international hotels and tourist centres.

(i) **Provide Planning for Mail Services:** The current planning for mail services in the metropolitan area is poor. A small planning unit which would advise the Director General on forward planning requirements should be established.

**Table 4.14 Cost Summary - Postal Services (Million Cedis)**

	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
<b>Expansion of Postal Services</b>	12,800	72	5,120	20	3,840	28	3,200	16	640	6	25,600	142
<b>Improvement of Postal Services</b>	1,920	6	-	-	-	-	-	-	-	-	1,920	6
<b>Total</b>	14,720	78	5,120	20	3,840	28	3,200	16	640	6	27,520	148

#### Cost Summary

The first year of the plan will concentrate on improving postal services of the congested post offices within Accra by providing more letter boxes at the cost 1,926 million ceddis, which is about 7% of the total 5 year cost. The second year will continue with upgrading of present agencies into full post offices whilst new post offices will also be built in distressed areas. Expansion of postal services (ie upgrading of present agencies into full post offices in some suburbs) will also start in the first year and will continue throughout the five year period at a cost of about 25,742 million ceddis. No external funding has been secured yet.

### 4.7.2 TELECOMMUNICATION SERVICES

Telecommunication Services are under the Ghana Posts and Telecommunications Corporation. The first manual telephone exchange in the country was installed in Accra in 1889 with a capacity of 70 subscriber lines, and this was eight years after the first telegraphic line had been established between Cape Coast and Elmina and then extended to Accra where a two and half mile circuit was constructed to link Christiansborg (Osu) and Victoriaborg (State Publishing Area).

Telephone services were gradually extended and improved by the introduction of automatic telephone exchanges to replace manual exchanges, expansion and modernization of local distribution networks; underground cable networks to replace extensive and inefficient open wire local distribution system together with radio transmission for trunk routes; and a more efficient international service by the installation of a satellite earth station together with facilities for international direct dialing for subscribers connected on digital exchanges. In Accra, two automatic telephone exchanges were installed at Accra Central and Cantonments in March and May 1953 respectively, to cater for increased demand by mainly Government subscribers. Another extension of these was made in 1967.

The Telecommunication Service has five district telephone areas in Accra North; Accra Central; Accra Cantonments; Teshie Nungua and Tema with a capacity of 28,000 direct exchange lines. A typical telephone exchange area comprises of: a local telephone exchange providing switching facilities; a local distribution network facilitating the connection of subscribers to the exchange; junction circuits to facilitate the interlinking with other exchanges - local or trunk; and a suitable electric power source either generated from the public mains or other sources such as electric generators or solar systems.

### 4.7.2.1 Demand for Telephones

The demand for telephone in the metropolitan area is high. The Corporation had a waiting list of over 28,000 in 1991. The total shortfall in capacity over demand will be nearly 37,000 in 1993 and 23,000 in 1997, according to Table 4.8. There are at least 18 areas which have very high unsatisfied demands. The heaviest demand for services will continue to be in the CBD and more affluent residential areas and the exchange capacity in Accra North will be upgraded to 15,000 lines in this area. New exchanges are programmed to meet demand in Madina (3,000 dels), Achimota (4,000 dels), and Dansoman (5,000 dels). The demand for telex services is expected to increase by 200 during the Plan period.

**Table 4.15 Telephone Demand - GAMA**

Exchange Area	1993		1994		1995		1996		1997	
	Dem and	Capa city	Dem and	Capa city	Dem and	Capa city	Dem and	Capa city	Dem and	Capa city
<b>Accra Central</b>	15,428	10,000	16,097	11,000	16,767	12,000	17,437	13,000	15,209	13,800
<b>Accra North</b>	17,047	14,000	17,810	16,000	18,574	18,000	19,337	20,000	20,221	20,800
<b>Cantonments</b>	9,254	6,800	9,503	7,200	9,751	7,600	10,000	8,000	10,586	8,400
<b>Madina</b>	5,058	1,000	5,643	2,000	6,227	3,000	6,812	4,000	9,376	4,800
<b>Achimota</b>	6,798	1,000	7,455	2,333	8,113	3,667	8,771	5,000	9,612	5,800
<b>Dansoman</b>	8,523	1,000	8,863	2,000	9,204	3,000	9,544	4,000	9,949	4,800
<b>Weiija</b>	1,520	400	1,874	600	2,229	800	2,583	1,000	3,060	1,400
<b>Teshie/Nungua</b>	3,915	2,200	4,310	2,800	4,706	3,400	5,102	4,000	5,628	4,400
<b>Tema</b>	8,637	3,000	9,390	4,667	10,146	6,334	10,900	8,000	11,625	8,400

Source: P & T Corporation, Accra, 1991

### 4.7.2.2 Constraints

1. **Difficulty in planning.** There are two issues: demand forecasting and design standards for the provision of services. The former is due to lack of basic, reliable data on business locations and activities, population figures, data on incomes and expenditures, existing and planned buildings, etc. There are also problems with forecasting of other agencies' plans and activities which affect the work of the telephone services.

2. **Obsolete plant and equipment.** Spare parts are either not available or are expensive and time consuming to procure, giving various problems such as frequent breakdown of telephone services and poor quality transmissions.

3. **Logistical problems.** The Corporation lacks sufficient vehicles to deal with problems resulting in delays in attending to faults and other operational services.
4. **Lack of adequately trained manpower.** This is the result of poor employment conditions which make retention of good and experienced manpower difficult. There are good facilities for training but not the incentive to keep the trained staff in the organisation.
5. **Lack of inter-agency coordination.** There is little or no coordination with agencies such as the Ghana Water and Sewerage Corporation, Highway Authority, and Electricity Corporation where activities often interfere with that of the P&T Corporation, causing service disruptions and poor quality transmission.
6. **Inefficient revenue collection system.** Many reasons contribute to this: very few places where bills can be paid; low collection rate; no strict follow up; no penalties for late payment, etc.

#### **4.7.2.3 Objectives**

- (a) To provide an improved and a reliable telephone service;
- (b) Expand the network of telecommunication services especially in the business districts;
- (c) To improve the revenue collection of the Corporation.
- (d) Improve planning and management.
- (e) Improve inter-agency coordination.

#### **4.7.2.4 Strategies**

- (1) In order to provide a reliable telephone service, the following measures will be taken:-
  - (a) rehabilitation of the existing network in the CBD area.
  - (b) installation of new networks to replace obsolete exchange equipment and telephone lines that are not water resistant.
  - (c) Cooperation with agencies whose activities interfere with telephone services and coordinate development
- (2) Expanding the telephone network services. This can be done by:
  - (a) installing additional telephone exchanges in existing telephone district areas and establishing new telephone district areas.
  - (b) increasing satellite transmission capacity to enable more international direct dialling service.
  - (c) improving inter-regional services.
  - (d) installing public phones in areas where no telephone facilities exist and in public areas.
- (3) Improve billing and revenue collection, which can be achieved through:

(a) decentralized operations of the Corporation.

(b) introducing discount to payment in time and penalty (interest) for late payment; privatisation of the collection system.

#### 4.7.2.5 Cost Summary

Telephone facilities can be increased in the five year period with 42,000 additional line capacity at an estimated cost of 10,849 million cedis switching taking 23% of the total cost and transmission equipment and external plant taking 74%, buildings, electricity and air-conditioning taking as little as 3% of the total cost.

**Table 4.16 Cost Summary - Telecommunications (million cedis)**

	1993		1994		1995		1996		1997		Total	
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC
<b>Provision of Switches</b>	541	-	541	-	541	-	541	-	292	-	2,456	-
<b>External Plant</b>	1,651	231	1,651	231	1,651	231	1,651	231	370	72	6,974	999
<b>Transmission</b>	45	-	-	-	-	-	-	-	41	-	86	-
<b>Power &amp; AC</b>	72	-	72	-	72	-	72	-	15	-	305	-
<b>Buildings and Civil Works</b>	5	2	5	2	5	2	5	1	5	1	23	7
<b>Total</b>	2,314	233	2,270	233	2,270	233	2,270	232	723	73	9,844	1,005

Table 4.17

## PROJECTS - TELECOMMUNICATIONS.

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
	Telecommunication improvement	Increase exchange capacity	Provision of switches	1158		P&T	Accra Central	Ongoing	1994
				536			Cantonments	"	"
				154			Accra North	1997	2006
				300		P&T	Dansoman	Ongoing	1997
				156			Teshie Nungua	1993	1996
				13		P&T	Weija	"	"
				24			Achimota	1997	2006
				7			Medina	"	"
				25		P&T	Tema North West	1997	2006
				2893	407		Accra	1993	1997
			External plant	1157	16		Cantonments	1993	1997
				1768	248	P&T	Accra North	"	"
				514	72		Dansoman	"	"

Table 4.17

## PROJECTS - TELECOMMUNICATIONS.

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
	Telecommunication improvement	Increase exchange capacity	Power and AC	122		P&T	Accra Central	1993	1997
				81			Cantonments	"	"
				31			Accra	"	"
				9		P&T	North Dansoman		
				17			Teshie Nungua		
				2			Achimota	1997	2006
				1			Medina	"	"
				2			North West		
				9			Tema	"	"
				8	2	P&T	Accra Central	1997	2006
			Buildings and civil engineering works	4	0.4		Cantonments	"	"
				8	3		Accra North	"	"
				4	2		Tema	"	"

Table 4.17 PROJECTS - TELECOMMUNICATIONS.

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC (¢) LC (¢)	EXECUTING AGENCY	LOCATION	YEAR START	YEAR COMP.
	Telecommunication improvement	Increase exchange capacity	External Plant	257	P&T	Teshie Nungua	1993	1997
				13	1	Weija	•	•
				16		Medina	1997	2006
				290	40	Tema	•	•
				64	9	North West	•	•
	Transmission			24	P&T	Accra North	1997	2006
				16		Tema	•	•
				45		Weija	1993	1997



TABLE 4.18

## PROJECTS - POSTAL SERVICES

PROJECT TITLE	COST (MILLION CEDIS)										
	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	TOTAL LC
DOME	460	6									460
KWASHIEMAN	1280	8									1280
EAST LEGON	2560	10									2560
ABLEMKPE	2560	10									2560
ADENTA	2560	10									2560
SAKUMONO			2560	10							2560
TAIFA	640	6									640
OFANKOR							640	6			640
MAAMOB							2560	10			2560
ODORKOR			2560	10							2560
OSOFO DADZIE					1920	10					1920
ZONGO	1280	8									1280
KANDA	1280	8									1280
HAATSO	640	8			640	6					640
ASHALLEY BOTWEY									640	6	640
NII BOIMAN											1280
TEMA C11					1280	18					1280
ADABRAKA	1280	4									1280
TRADE FAIR	640	4									640
TOTAL	15,180	80	5,120	20	3,840	34	3,200	16	640	6	27,980

## Chapter 5

# SOCIAL SERVICES

### 5.1 EDUCATION

#### 5.1.1 Basic Education Policy

In 1983 the PNDC introduced an educational policy which ensures full enrolment of all children of school going age by the year 2000 and expose them to a wide variety of areas and skills through nine years of basic education. In support of this policy the government initiated a multi-year (1987-1993) educational reform programme as an integral part of the Economic Recovery Programme. The objectives of the reform are to reduce the length of pre-university education, make education relevant to the development needs, reduce costs, provide free, universal basic education, and, at the secondary level, provide a solid educational foundation for post secondary education, training and occupation.

#### 5.1.2 Enrolment

##### (a) Pre-School Education

More than 87,100 children, 49.4% of which were girls, were enrolled in 579 pre-schools, 74 of which were public in 1989. Corresponding figures for 1991 were: 91,265 children with 49.6% of them girls in 729 pre-schools, 79 of which were public. Total number of teachers were 1749 (1989) and 1792 (1991) with 920 and 1021 attendants for the respective years. Pre-schools are owned and operated by the private sector and regulated by GARED. It is government's policy to continue encouraging the private sector to open more pre-schools throughout GAMA, especially Ga where none existed in 1990.

##### (b) Primary

Although GAMA is the most industrialized region in Ghana, its enrolment rates are lower than many regions of the country. The plan is to increase enrolment by about 112,500 pupils between 1993 and 1997. The total enrolment and apparent enrolment rates are shown on Table 5.1

**Table 5.1 GAMA SCHOOL ENROLMENT - 1993 - 1997**

Year	(Apparent Enrolment Rate %)		
	Primary	JSS	SSS
1993	208,355 (64.88%)	69,827 (47.56%)	34,728
1994	33,824 (70.17%)	70,972 (45.92%)	31,978
1995	263,432 (75.98%)	70,607 (43.90%)	32,128
1996	298,116 (82.00%)	68,267 (40.48%)	32,941
1997	320,832 (84.34%)	82,073 (46.51%)	33,915

In 1993 with an enrolment of 208,355, GAMA will have an apparent enrolment rate of 64.88% while that for Ghana will be 79.33%. To achieve universal basic education, GAMA's will have to grow at a rate of 5.12% per annum. In 1997, however, GAMA enrolment will have an apparent enrolment rate of 84.34%, 1.25% higher than that of Ghana, but still slightly lower than many regions.

#### **(c) Junior Secondary School**

The enrolment for JSS is expected to increase by nearly 12,000 pupils during the plan period. In spite of this, the apparent enrolment rate will drop from 47.56% to 46.51%.

#### **(d) Senior Secondary School**

Enrolment at SSS will actually decrease by 813 during the plan period. The SSS suffers from shortage of equipment, materials and other facilities. In order to expand future enrolment and provide some of the missing facilities, it is planned to complete some of the SSS buildings left uncompleted since the late 1970's.

### **5.1.3 Constraints**

There has been significant expansion of the educational system at all levels in GAMA during the past 10 years. However, GAMA suffers from low enrolment levels, compared with national and regional enrolment rates, especially at the level of basic education where enrolment in 1990 was 46.79 percent compared to GAR (57.14%), Ghana (66.80%), Eastern (81.56%), Central (84.17%), Volta (82.83%) and Ashanti (76.60%) Regions. In order to catch up, or achieve universal basic education, GAMA's enrolment has to grow by an average of 5.12 percent between 1990 and 2000, compared with 3.12 for Ghana or 1.38 percent for Central Region.

Expansion of the system faces a number of problems

- (1) limited number of places compared with the size of the school going-age population;
- (2) lack of adequate facilities, including school buildings, materials and equipment, especially at SSS level and technical institutes;
- (3) low enrolment in GAMA as compared with other regions in the country.
- (4) disparities in the distribution of facilities between schools, especially at the SSS level;
- (5) shortage of trained teachers;
- (6) large number of untrained teachers;
- (7) large number of repeaters;
- (8) shortage of educational material such as science materials, equipment and accessories.

### **5.1.4 Objectives of the Five Year Development Plan**

The objectives of the five year educational plan are to:

- (1) provide free, compulsory basic education for all children of school going age;
- (2) provide universal basic education by the year 2000;

(3) provide skilled technical and management manpower to meet the demands of industrial, commercial and other development plans envisaged in GAMA's FYDP, 1993/1997.

(4) correct the existing inequalities in the distribution of facilities;

(5) encourage the participation of the private sector in providing education;

(6) train additional teachers to meet the enrolment targets;

(7) improving the quality of teachers;

(8) phase out untrained teachers; through in-service training and upgrading.

### 5.1.5 Strategy

The Plan is estimated to cost over 50 billion cedis. Under Local Government Law, 1988 PNDCL 207, the responsibility for basic education is not clear. In many communities, less in Accra, residents provide the school building, while the Central Government supplies teachers, equipment, materials, and text books. It is unlikely that the 6 billion cedis (see table 3.1(b) at the end of the chapter) needed for the construction of schools for basic education would be covered by the Central Government. It is also unrealistic to expect the communities in GAMA to contribute towards the construction of the schools, especially in such a short time. To achieve the objectives, the strategy will have to focus on:

(a) increasing the space utilization rate i.e. the continuation of a double shift at both the primary and JSS levels.

(b) increasing the school size in order to lower construction and administration costs;

(c) increasing class size at both levels;

(d) removing the inequalities in pupil/teacher ratio;

(e) eliminating repeaters;

(f) installation of tax by District Assemblies specifically for basic education;

(g) encouraging the private sector to provide education;

(h) developing standard designs and construction materials to decrease costs;

(i) eliminating the chronic shortages of educational materials, facilitate and improve the teaching and learning process;

(j) strengthening the management and planning capabilities of the Regional and District Educational Offices to ensure successful implementation of the educational reforms;

(k) providing access to educational opportunities;

(l) Integrating the development and expansion of both adult and children literacy programmes in GAMA;

(m) introducing in-service training of teachers.

### 5.1.6 Technical Education

The objectives of the technical training programme is to

- (1) provide the technical knowledge and vocational skills necessary for GAMA's industrial, commercial, and economic development;
- (2) give training and impart the necessary skills to young men and women who are inclined to pursue technical careers;
- (3) equip individuals with entrepreneurial skills for self employment.

The technical training programmes are expected to meet the demand for skilled technical personnel. They are of two types: the technical institutes and the polytechnics. The technical institutes are established to provide an alternative avenue for full-time courses for the post primary and JSS leavers who opt for training in technical and vocational skills. In 1989, out of the 3 technical institutes in GAR, 2 with a total enrolment of 2222 were in GAMA. The technical institutes run courses lasting 1-3 years. These include engineering, mechanics, motor vehicle mechanics, welding, carpentry, plumbing, catering, and business studies. A total of 3000 technicians are expected to graduate during the plan period.

The polytechnics also provide avenues for individuals who wish to advance their technical skills, producing the necessary middle level manpower requirements in the field of technical/vocational skills for both the private and public sectors of the economy. In 1989, Accra polytechnic had an enrolment of 2297 students of which nearly 30% were females. The polytechnics offer courses ranging from basic engineering to courses leading to chartered accountancy. The output at the end of the plan will be 3500 middle level technicians at a cost of over 656 million cedis.

### 5.1.7 Teachers Demand

A total of 2836 additional teachers, 2462 of which are for primary education, will be required for the planned expansion of enrolment at the basic education level. The plan is based on radical increase of pupil/teacher ratio from 37.9 in 1993 to 42.50 thereafter for primary education, and by maintaining at the JSS level a ratio of 27.60 throughout the period. The two training colleges in and around GAMA (Accra and Ada) have a capacity of producing about 1200 teachers during the plan period. The balance of teachers must come from the remaining 36 colleges in Ghana. This will not be difficult in light of the high output of these colleges. No additional teachers will be required at the SSS level if GAMA's present student/teacher ratio of 20.55 or the higher national ratio of 21.16 is maintained during the plan period. The cost of training is estimated at nearly 355 million cedis.

### 5.1.8 Non-Formal Education

There will be an estimated 400-500,000 people who cannot read or write in GAMA. The lowest literacy rates are in the 9-14 (9.13%) and 55 and above (41%) age groups. The plan will achieve a literacy rate of 90 percent before 1997, and full literacy by the year 2000. The cost for the plan period is 2,116 million cedis.

### 5.1.9 Physical Facilities

A total of 2688 additional classrooms will be needed at the primary school level, or one-half of this if double shift system, practised extensively especially in urban areas, is adopted. Similarly, only 120 additional classrooms would be needed at the JSS level for the plan period. The increases in enrolment at the SSS, technical/vocational, and the teachers training colleges can be accommodated without additional physical facility. However, investments in materials and equipment are needed for the specialized cases (e.g. technical training, etc.). The total cost of investment will be over 6,000 million cedis.

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
	Holy Trinity Cathedral School	Expansion of SSS system and/or educational quality improvement	Construction of Blk		30	MOE	Accra	1993	1993
	Kaneshi Sec. Tech. School	"	Renovation of various various Blks and Construction of various Blks		350	"	"	1993	1993
	Labone SS	"	Renovation of various Blks		370	"	"	1995	1995
		"	Security lights		20	"	"	1996	1996
		"	Access Roads & Environmental Improvement.		45	"	"	1997	1997
	O'Railly SS	"	Construction of Blks		128	"	"	1993	1993
	Presby SS Legon	"	Construction of various Blks		150	"	"	1995	1995
			Renovation		123	"	"	1996	1996
			Security lighting and environmental Improvement		28	"	"	1997	1997
	West African SS'	"	Construction of various Blks		602	"	"	1993	1993
		"	Construction of Residential Blks		220	"	"	1994	1994
		"	Access Roads and Security Lighting		33	"	"	1995	1995
		"	Environmental Improvement		20	"	"	1996	1996
	Armed Forces Sec. Tech. S	"	Construction of various Blks		661	"	"	1994	1994
		"	Construction of Residential Blks		90	"	"	1995	1995
			Environmental Improvement		12	"	"	1996	1996

TABLE 5.2

## PROJECT - EDUCATION

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
	Accra Training College	Expansion of SSS system and/or educational quality improvement	(a) Construction of various Blks		435	MOE	Accra	1993	1993
			(b) Furniture and Equipment, etc.		194	"	"	1994	1994
			(c) Playing fields and security lights		28	"	"	1995	1995
			(d) Environmental Improvement.		60	"	"	1996	1996
	Achimota School	Expansion of SSS system and/or educational quality improvement	(a) Construction of home economics Blks		96	"	"	1995	1995
			(b) Renovation of various blks		175	"	"	1996	1996
			(c) Environmental Improvement		220	"	"	1997	1997
	Aquinas SS	Expansion of SSS system and/or educational quality improvement.	(a) Construction of Science & Res. Blks		413	"	"	1995	1995
			(b) Security lights		27	"	"	1996	1996
			(c) Environmental improve-		60	"	"	1997	1997
	Christian Methodist	Expansion of SSS and/or educational quality improvement	(a) Renovation of various types of blks and security lights, access road, etc.		913	"	"	1993	1993
			(b) Construction of various Blks		350	"	"	1994	1994
	Ebenezer SSS	Expansion of SSS system and/or educational quality	(a) Construction of various blks		552	"	"	1993	1993
			(b) Renovation and Security lights		90	"	"	1995	1995
			(c) Playing field		54	"	"	1996	1996
			(d) Environmental improvement		60	"	"	1997	1997

TABLE 5.2

## PROJECT - EDUCATION

ECU

TIO

YEAR

TABLE 5.2

## PROJECT - EDUCATION

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
00	Accra Academy	Expansion of SSS system and/or educational quality improvement.	(a) Construction of Science and residential bldgs	358		MOE	Accra	1995	1995
			(b) Renovation of Bungalow	80		"	Accra	1996	1996
			(c) Fence and outdoor lighting and environment-mental Improvement	110		"	"	1997	1997
	Accra Girls SSS	Expansion of SSS system and/or educational quality Improvement.	(a) Completion of Dorms & Rds. Bldgs	115		"	"	1995	1995
			(b) Access Roads	80		"	"	1996	1996
			(c) Classroom outdoor lighting and Environmental Improvement	160		"	"	1997	1997
			(a) Construction and renovation	395		"	"	1994	1994
	Accra High School	Expansion of SSS system and/or educational quality improvement.	(b) Construction of drains and renovation	120		"	"	1995	1995
			(c) Security Lighting	20		"	"	1996	1996
			(d) Environmental Improvement.	60		"	"	1997	1997
	Accra Tech Training Centre	Expansion of SSS system and/or educational quality improvement.	(a) Construction and renovation of workshops and storm drains	790		"	"	1995	1995
			(b) Renovation of Auditorium	36		"	"	1996	1996
			(c) Environmental Improvement	40		"	"	1997	1997



TABLE 5.2

## PROJECT - EDUCATION

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC	LC			START	COMP.
	Tema Tech. Institute	Expansion of SSS system and/or educational quality improvement	Construction equipment and furniture		223	MOE	Tema	1995	1995
		•	Security Lighting		12	•	•	1996	1996
		•	Environmental Improvement		15	•	•	1997	1997
	Chemu SS	•	Construction of various Blks		684	•	•	1995	1995
		•	Construction of Residential Blks		290	•	•	1996	1996
		•	Security lighting and environmental Improvement		35	•	•	1997	1997
	Wesley Grammer School	•	Construction of various Blks		640	•	•	1995	1995
			Construction of Residential Blks		200	•	•	1996	1996
		•	Security lighting and Environmental Improvement.		30	•	•	1997	1997

TABLE 5.2 PROJECT - EDUCATION

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS) FC	LC	EXECUTING AGENCY	LOCATION	YEAR START	COMP.
	Presby SS Osu	Expansion of SSS system and/or educational quality improvement.	Construction of various Blks	350		MOE	Accra	1993	1993
			Paving field	30		"	"	1994	1994
			Access roads, etc.	36		"	"	1995	1995
			Environmental Improvement	10		"	"	1996	1996
	Presby SS Techie	"	Construction of various Blks	675		"	"	1993	1993
		"	Construction of Staff Bungalow	96		"	"	1994	1994
		"	Access road & playing field	35		"	"	1995	1995
		"	Environmental Improvement	15		"	"	1996	1996
	St John's Grammar	"	Renovation of various Blks	320		"	"	1995	1995
		"	Construction of Staff Bungalow	50		"	"	1996	1996
		"	Access Road and Playing Field and Environmental improvement.	50		"	"	1997	1997
	St Mary's SS	"	Construction of various Blks	490		"	"	1995	1995
		"	Fencing	15		"	"	1996	1996
		"	Security lighting and Environmental Improvement	22		"	"	1997	1997
	Tema SS	"	Renovation of various Blks	165		"	Tema	1995	1995
		"	Security Lighting	10		"	"	1996	1996
		"	Environmental Improvement	20		"	"	1997	1997

### 5.1.10 Summary of Educational Costs

The total cost of education during the FYDP is estimated to be 64,557 million cedis of which the cost of capital expenditure, including rehabilitation is 18,993 million cedis or 29 percent. About 47 percent of the capital expenditure will be on basic education. The cost of construction for basic education is the responsibility of the community, but it is doubtful that the communities in GAMA can raise over 6 billion cedis in 5 years or less. Nearly 66 percent of the total cost will be for learning, and 51 percent of which will be for basic education. This will be Government's responsibility.

**Table 5.2 SUMMARY OF EDUCATIONAL COSTS GAMA - 1993-1997**

YEAR	PRIM	CONSTRUCTION			PRIM	LEARNING		
		JSS	SSS	T/V		JSS	SSS	T/V
1993	855	-	3,685	320	2,280	1,550	3,345	315
1994	1,022	120	1,946	-	2,638	1,631	3,154	315
1995	1,164	-	4,233	1,013	3,066	1,681	3,247	315
1996	1,307	-	1,221	48	3,580	1,684	3,413	315
1997	974	420	900	55	3,997	2,098	3,605	315
<b>Total</b>	<b>5,322</b>	<b>570</b>	<b>11,985</b>	<b>1,436</b>	<b>15,561</b>	<b>8,644</b>	<b>16,764</b>	<b>1,575</b>

YEAR	PRIM	TEACHER TRAINING			LITERACY	TOTAL
		JSS	SSS	T/V		
1993	123	-	-	-	579	12,732
1994	24 13	-	-	-	608	11,471
1995	146	-	-	-	638	15,503
1996	52	-	-	-	335	11,955
1997	51	100	-	-	351	12,896
<b>Total</b>	<b>396</b>	<b>113</b>	<b>-</b>	<b>-</b>	<b>2,511</b>	<b>64,557</b>

PRIM - Primary, JSS - Junior Secondary School,  
SSS - Senior Secondary School, T/V - Technical/Vocational.

## 5.2 HEALTH

### 5.2.1 Introduction

The major health policy of the Government is the maximisation of the total health life of the Ghanaian population. The primary means of implementing the health policy is through Primary Health Care (PHC), the philosophy of which is the reduction of mortality and morbidity due to conditions for which prevention is easy and treatment and control exist. The main focus of PHC in GAMA has been on Maternal and Child Health/Family Planning Programme (MCH/FP).

The major health problems in GAMA are essentially communicable diseases, diseases due to poor environmental sanitation, ignorance, and poverty. Malaria has been the number one disease in GAMA, followed by

upper respiratory infection, diarrhoeal diseases, etc, while the major causes of death are hypertension, NYD, accidents, etc. Infantile deaths are due mainly to low birth weight, infections, malnutrition, and anemia.

### 5.2.2 Constraints in Health Services

- 1) Inadequate allocation of resources and emphasis on prevention of diseases.
- 2) Distressed and incomplete physical facilities and inadequate equipment.
- 3) Inadequate coverage of PHC/FP programme.
- 4) Excessive budgetary outlays on personnel and related costs, rather than on health care services.
- 5) Weak system of delivery and support systems.
- 6) Inadequate plans to utilise slack equipment at the hospitals.
- 7) Overcrowded and inadequate housing and living conditions resulting in problems of control of infectious diseases.
- 8) Lack of general public health control and supervision especially:
  - a) collection and disposal of refuse and nightsoil.
  - b) supervision of food hygiene at market places and road sides.
  - c) inadequate clear potable water.
- 9) Inadequate health facilities, resulting in the establishment of non-static satellite clinics in the wards and neighbourhoods of GAMA.
- 10) Lack of appropriate planning and management system.

### 5.2.3 Objectives

- 1) To lay more emphasis on prevention.
- 2) Extension of coverage of the Primary Health Care Service.
- 3) Promote public health.
- 4) Reduce overall medical costs.
- 5) Encourage the participation of the private sector in the delivery of health services.
- 6) Maximise the use of facilities and equipment.
- 7) Strengthen delivery and support systems; and
- 8) Improve planning and management.

### 5.2.4 Strategy

Health as a local service, variations in culture, economy, transportation and other communication facilities, etc. require that health services be planned, managed, and funded to some extent, locally, based on the effective approach to health care. The strategy is focussed on:

1) Emphasis on prevention, and, consequently, allocation of greater portion of health resources. These include:

- i) Increasing efforts to eradicate malaria.
- ii) More coverage Primary Health Care.
- iii) Increase in family planning coverage
- iv) Improvement of child health services.
- v) Reduction of teenage pregnancy.
- vi) Public education programme, including school health services.

2) Cost recovery aimed at making the health delivery system, as much as possible, self-financing. Measures to be taken are:

- i) Charging little or no charge for services of general public benefit.
- ii) Introducing full user charges for curative services.
- iii) Cutting down management costs, especially personnel costs.
- iv) Introducing private insurance.
- v) Renting of equipment and facilities to the private sector.

3) Strengthening the Delivery and Support System. The achievement of health objectives depends on adequate supply of drugs, maintenance of buildings and equipment, vehicles; establishment of sound financial management system (filing, collecting, and record keeping), training and supervision of personnel and assigning them to the right tasks.

4) Improving planning and management. An overview of the health delivery systems indicates the need for restructuring, including:

- i) Improvements in planning (data collection, monitoring and evaluating programme, formulating objectives and targets, and preparing budgets and projects), management (organisational structure, day to day operations, incentives, programme design, etc.).
- ii) Decentralisation system of management.
- iii) Encouragement of the private sector - Recognizing the role of NGO's and the Communities in Health Education programmes and in the planning and delivery of such services (PHC).

## 5.2.5 Cost Summary

The total cost for the health sector is, 1,100 million cedis (all in cedis), of which nearly 23 percent or 220 million cedis will be spent during the first year of the Plan. Only one additional polyclinic will be built during the plan period.

Table 5.4 Cost Summary - Health Sector (GAMA) 1993-1997

	1993 LC	1994 LC	1995 LC	1996 LC	1997 LC	Total LC
001 Labadi	70	-	-	-	-	70
002 Mamobi	80	-	-	-	-	80
003 DHMT	20	-	-	-	-	20
004 Accra Mental	-	30	30	-	-	60
005 Achimota Hospital	20	20	-	-	-	40
006 Ridge Hospital	-	-	50	60	-	110
007 School Clinics	-	60	60	60	-	180
008 Mamprobi Polyclinic	-	20	-	-	-	20
009 MPL Comple	-	-	-	30	-	30
009 Equipment for Polyclinics	-	-	20	20	20	60
009 Hospital Equipment	-	-	30	30	40	100
010 Chorkor Polyclinic	-	-	100	100	100	300
011 Water Supply for all Polyclinics	10	10	10	-	-	30
<b>Total</b>	<b>250</b>	<b>140</b>	<b>270</b>	<b>300</b>	<b>160</b>	<b>1,100</b>

## 5.3 MANPOWER AND EMPLOYMENT

### 5.3.1 Employment Situation

In 1984, GAMA's labour force was estimated to be 762,675 of which 535,886 were employed, 177,740 were economically inactive, 49,149 or 9.18 percent were unemployed. The labour force grew by 30.9 percent between 1984 and 1990, the total employment in 1990 was estimated to be 918,390. During the plan period, it is estimated that the labour force will increase at a rate of 3.8 percent per annum, adding nearly 43,400 persons annually to the labour force.

Table 5.5 Employment Situation in 1984

	URBAN			RURAL		
	Total	Unem- ployed	% Unem- ployed	Total	Unem- ployed	% Unem- ployed
<b>Accra</b>	426,804	39,000	9.14	6,63	557	8.40
<b>M</b>	221,340	21,300	4.99	3,705	302	4.55
<b>F</b>	205,564	17,700	4.15	2,926	255	3.85
<b>Ga</b>	12,653	911	7.20	50,017	957	1.91
<b>M</b>	6,458	433	3.42	24,897	606	1.21
<b>F</b>	6,195	478	3.78	25,120	357	0.70
<b>Tema</b>	85,280	7,578	8.89	3,550	144	4.05
<b>M</b>	45,804	4,205	4.93	1,942	70	1.97
<b>F</b>	39,476	3,373	3.96	1,608	74	2.08
<b>Total</b>	524,737	47,489	9.05	60,198	1,660	2.75
<b>M</b>	273,602	25,938	4.94	30,544	978	1.62
<b>F</b>	251,235	21,551	4.11	29,654	682	1.13

The rural-urban unemployment rates shown on Table 5.4 indicate that the unemployment problem was more severe in the urban areas than in the rural areas: the unemployment rate in the urban areas was 9.05 percent in 1984 as compared with 2.75 percent in the rural areas. The unemployment rate for men in the urban and rural areas were 4.94 percent and 1.62 percent respectively as compared with 4.11 percent and 1.13 percent respectively for women. Ga had the lowest unemployment rates both in the urban and rural areas.

The high level of unemployment in the urban areas was directly the result of the wide gap between rural and urban conditions of life and employment which has led to a continuous drift on an increasing scale of young people to the urban areas.

### 5.3.2 The Educational Level of GAR Work Force

According to Table 5.5 over 31 percent of the work force had no education, although the major portion of them was in the rural areas of GAMA and in the remaining 2 districts of GAR where about 8 percent of the population of region live. Nearly 2 percent of the work force had university education, of which almost all were estimated to be within GAMA. Over 14 percent of the total employment worked in agriculture. Nearly 32 percent worked in industrial activities.

Table 5. 6 GAR Work Force by Educational Level: 1984

	Total	None	Pr	M	ST	Comm	TT	U
<b>All</b>								
<b>Occup.</b>	597,672	186,849	46,705	24,8872	63,378	32,657	7,551	11,660
<b>Prof. Tech.</b>	4,5501	1,774	488	1,2261	1,3184	4,636	6,158	7,000
<b>Adm. Man.</b>	8194	316	110	1766	2705	794	180	2323
<b>Clerical &amp; Rel.</b>	52,573	428	244	19,610	20,682	10,178	345	1,086
<b>Sales Workers</b>	171,563	75,066	18,263	64,540	8,458	4,563	249	424
<b>Service Workers</b>	4,5640	13,433	2,549	22,551	4,688	2,059	171	189
<b>Agric &amp; An. Hus.</b>	84,223	48,433	9,861	21,530	2,756	1,095	144	404
<b>Prod. &amp; Rd. Works</b>	189,978	47,399	15,191	106,614	10,905	9,332	304	234

Pr = Primary; M = Middle; St = Secondary/Technical; Comm = Commerce; TT = Teacher Training; U = University

### 5.3.3 FYDP Manpower Needs

The distribution of employment by broad industrial classes given in Table 5.6 shows that agricultural employment which has been decreasing from 11.42 percent in 1984 to 7.83 percent in 1990 of the total work force will further decrease by 1.15 percent during the plan period. Industrial employment will increase from 32.70 percent in 1993 to 36.93 percent of the work force in 1997. In the service sector, whole sale and social and personal services will decrease during the plan period.

The economy is expected to produce about 319,000 jobs during the five years, or an average of 63,800 jobs a year, outstripping the annual growth in labour force by 20,000 jobs a year. The gap will be filled by Ghanaians migrating from other regions of the country.



Table 5.7 Manpower Employment Projection

Industry	1984	1993	1997
Agriculture	61,700 (11.42%)	75,440 (6.71%)	80,270 (5.56%)
Manufacturing	103,580 (19.18%)	305,600 (27.20%)	451,240 (31.28%)
Utilities	8,390 (1.55%)	18,720 (1.67%)	20,550 (1.42%)
Construction	20,110 (3.72%)	40,540 (3.61%)	57,400 (3.98%)
Mining	1,480 (.28%)	2,460 (.22%)	3,570 (.25%)
Transport and Communication	36,730 (6.80%)	75,640 (6.73%)	91,890 (6.37%)
Wholesale and Trade	171,200 (31.70%)	373,610 (33.25%)	449,450 (31.15%)
Finance	15,290 (2.83%)	24,240 (2.21%)	31,420 (2.18%)
Social and Personal Services	121,610 (22.52%)	207,400 (18.40%)	256,870 (17.81%)

The employment projections were based on an optimistic growth of the national economy. In recent years, the economy has shown clear indications of slowdown. This will significantly reduce the need for additional labour force from outside GAMA.

### 5.3.4 Constraints

There are two types of problems facing the manpower situations of GAMA:

- (1) High dependency ratio, and
- (2) Problems with meeting manpower requirements.

#### 5.3.4.1 High Dependency Ratio

One important aspect of GAMA's population which places a premium on the maximum utilization of all members of the labour force is its age structure. Its dependency ratio was 41.5 percent in 1984. Accra's dependency ratio was 44 percent in 1988 and 47.1 percent in 1990. This situation has created an urgency to provide gainful employment for all able-bodied persons. It is therefore essential that members of the work force are equipped with basic skills required for productive activity in all sectors of the economy.

### 5.3.4.2 Meeting Manpower Requirements

There are five problems in meeting the manpower requirements of the economy:

- (i) **Low enrolment:** First, school enrolment is low compared with many of the neighbouring regions. This will reduce the availability of trained, skilled manpower since the labour pool will be much small.
- (ii) **Shortage of trained manpower:** There are shortages of high and middle level professional, managerial, and administrative and technical categories.
- (iii) **High illiteracy rate:** GAMA has a high illiteracy rate which has to be taught to read and write and be trained for productive employment.
- (iv) **Under-employment:** There is a significant amount of under employment in the economy, especially in the public and parastatal sectors where the majority of the work force is employed.
- (v) **Low labour productivity:** Although there has not been any serious study of labour productivity in the country, it is generally believed that the productivity of the Ghanaian labour force is very low, especially in the public sector of the economy. This hinders considerably efforts to speed up the expansion of the economy. Causes of low productivity include:
  - (1) low level of education and training of the labour force;
  - (2) inadequate supervision and management;
  - (3) weak network of managerial and supervisory services due to unclear lines of demarcation and control, leading to poor work discipline and attitudes among subordinate personnel.
  - (4) low salary levels and poor incentives for labour.

### 5.3.5 Objectives

The objectives of the FYDP manpower and employment strategy are to provide:

- (1) higher levels of productive employment for the new entrants to the labour market.
- (2) alternative employment to the work force being deployed as a result of :
  - (i) privatisation and restructuring of industry;
  - (ii) deployment in the public sector;
  - (iii) under-employment in the economy.
- (3) at all levels skilled and competent technical and managerial work force.

### 5.3.6 Strategy

The FYDP manpower and employment strategies are:

#### 5.3.6.1 Expansion of the industrial sector:

Over 165,400 of the jobs or 51.8 percent of the total additional jobs, will come from industry. This is 76 percent of the annual increase in the labour force of GAMA. Thus, the key to employment during the plan period and

beyond is the expansion of the industrial sector. The industrial growth strategy will focus on privatisation, higher utilization of installed capacity, promoting agro-based industries, and encouraging the establishment of small and medium scale industries through technical, managerial, and financial assistance.

#### **5.3.6.2 Promotion of new line service activities:**

The service sector will produce nearly 148,800 jobs during the plan period, which is 47 percent of the total new jobs the economy will create. The wholesale and trade sub-sector accounts for nearly 51 percent, or 75,800 of the new service sector jobs, while social and personal services will grow by less than 50,000 between 1993 and 1997, despite the public sector redeployment programme which has been going on since 1988. The main source of growth in employment in the service sector will be the financial sector, which needs strengthening and competition, and new line industries such as warehousing, cold storage, and tourism.

#### **5.3.6.3 Growth of the construction industry:**

The construction of roads, buildings and maintenance works, water and sewerage lines as well as the construction of health facilities, schools, housing, etc. will create job openings both in the urban and rural areas of GAMA. These projects will help solve the twin problem of employment and under-employment.

#### **5.3.6.4 Using labour-intensive technology in the rural areas:**

Much of the unemployment and under-employment occurs in the agricultural sector of the rural areas of GAMA. The rates are high particularly during the off agricultural season. Government will encourage the use of labour-intensive technology in rural industries and in civil engineering works, through its fiscal policies in order to promote increased labour absorption.

#### **5.3.6.5 In-house training:**

During the plan period, Government will ensure that the training of Ghanaians in all walks of life is intensified. In this connection departmental training programme will be re-organized to ensure that Ghanaians in all vital positions in all sectors of the economy who are capable and can undergo further training as well as training others are selected and trained locally or abroad. The trained cadres will be used as the motive force behind the efforts to improve the general productivity of serving personnel. The strategy of training employed manpower is of crucial importance as it offers prospects of immediate gains in individual performance and sizeable increases in productivity, output, and incomes.

#### **5.3.6.6 Skills Development**

GAMA suffers from very limited availability of some of the relevant skills needed for the rapid expansion and modernization of the economy. The critical areas include administrative, managerial, professional, sub-professional - technical, administrative and managerial - and skilled technicians. Although Ghana has made significant progress in the development of managers and administrators, this category of manpower continues to be in short supply.

The principal source of administrators and managers is the School of Administration of the University of Ghana, Legon which is currently producing at a rate of 90 professional, high level management personnel and about 50 sub-professional management personnel annually, far shorter than the 1,400 required by the economy during the plan period. The Ghana Institute of Management and Public Administration (GIMPA) and the Management Development and Productivity Institute (MDPI), the two other main institutions for the development of management personnel will respectively train 120 and about 200 high level management personnel annually. The Plan also requires over 13,000 sub-professional administrative personnel including accountants. The main sources of manpower are the commercial schools, supplemented by the various training programmes provided at the two management centres. To maintain high level management and administrative performance, the management centres will step up various training programmes.

The Plan heavily depends on the availability of scientific, professional, and technical personnel. Such personnel as planners and engineers of all types, medical doctors (general practitioners and specialists), dentists, pharmacists and various supporting personnel are in short supply in the country as well as in GAMA. There were about only 80 medical doctors in government facilities in 1990, excluding Korle Bu teaching hospital. An average of about 80 medical doctors are produced annually by both the University of Ghana and University of Science and Technology. Notwithstanding, there will be shortages of medical doctors in the governmental health facilities; the shortage of specialists will be particularly acute. It will be difficult to attract new or keep the existing medical personnel in public service unless the salary and other incentive benefits schemes are improved. In the case of engineering and related technical personnel, the needs are great. The local annual output of engineers is about 150 graduates and 60 sub professional engineering personnel. There are at present no adequate facilities available in Ghana for training of engineers in some specific fields such as metallurgy, textile, telecommunications, etc. The situation is similar in the field of planning where the complexities of development in GAMA require specialists in urban management, metropolitan planning and management, urban economics etc. There are plans to expand the training of planners in the three universities in Ghana instead of only one at the moment.

The requirement for horticulturalists during the plan period will be high due to the rising demand for vegetables and fruits in GAMA. Nearly 100 agricultural technicians will graduate annually during the plan period. GAMA is a leading centre for cattle rearing and poultry farming. There is an acute shortage of doctors and assistants. The training of veterinary doctors which is only available overseas should be intensified as will that of the local training for the veterinary assistants.

While there is growing unemployment among some categories of the products of the technical schools, there is at the same time serious shortages among other categories of technicians in GAMA's economy. The reasons for this situation include shortage of qualified, trained and experienced instructors, lack of adequate shop-floor facilities for practical training, dearth of good teaching materials, equipment and library facilities, and lack of effective relation between the employing establishments and the training institutes. Appropriate measures will be taken by the Ministry of Education for remedying these deficiencies.

### **5.3.7 Priority**

All the above skills are required to manage GAMA's resources and implement plans. Often, the availability of resources to acquire these skills is limited, in which case priorities have to be determined. A close look at the administrative and management needs of the FYDP suggests that the training programme should be structured to take into account the following priorities: (1) Sub professional administrative, management personnel; (2) High level professional administrative, management personnel; (3) Sub professional technical personnel; (4) High level professional technical personnel such as civil, mechanical, electrical, engineers; (5) Agricultural personnel at sub professional level; and (6) High level agricultural personnel.

### **5.3.9 Costs Summary**

Table 5.7 shows the total cost of training, all of which is expected to be financed locally by the central government.

Table 5.8 Cost Summary for Manpower Training - 1993-1997

		1993	1994	1995	1996	1997	Total
Various Professional Management Personnel		30	30	33	35	37	165
Various Sub professional management personnel		6	7	7.0	8	9	37
In-service management personnel	120	125	130	139	145	659	
Sub professional personnel	300	307	315	323	330	1,575	
High level tech. personnel	45	47	50	52	54	248	
Sub professional Agric personnel	8	9	10	11	12	50	
Physicians	80	85	90	94	99	448	
High level agriculturalists	5	6	7	8	9	35	
Total	594	616	642	670	695	3,217	

## 5.4 SOCIAL WELFARE

### 5.4.1 Policy and Plans

Current social welfare policy aims at preventing the occurrence of social problems and promoting conditions which will safeguard and maximize the desirable consequences of development. A variety of statutory and non-statutory services are provided by the Social Welfare Department of GAMA.

### 5.4.2 Constraints

*The main problems are:*

(1) **Acute shortage of social workers.** There were in 1990, 100 social workers in Accra, 11 in Tema, and only 1 in Ga district. This is about 1 social worker for over 15,400 persons in GAMA, which is very high. At present a social worker handles over 200 cases at a time. Attempts will be made during the plan period to reduce the ratio to about 60-70 cases per social worker.

(2) **Inadequate resources.** Despite the need and recognition for social welfare services, the resource commitment of the government is inadequate to meet the growing demand for social services. Resources are needed to support logistical services, including various training equipment, tools, and materials, etc.

### 5.4.3 Objectives

- (i) To improve the manpower shortages of the Department.
- (ii) To expand social welfare services.
- (iii) To promote, expand, and maintain functional relationship with voluntary/non-governmental organisations.
- (iv) To embark on active community-based programmes to integrate the disabled into the communities.
- (v) To improve and expand vocational training programmes.

### 5.4.4 Strategies

i) **Strengthening Preventive Services:** The social and economic costs of increasing social welfare cases can be enormous if measures are not taken to stop social problems right from the start. Preventive social welfare services need to be extended to schools, communities, as well as providing family planning and various youth services, and vocational training programmes.

ii) **Increasing Enrolment at the Social Welfare School:** The annual in-take ranges between 40 and 50 students. This is low compared with the manpower needs of the Department. The enrolment rate should be increased in order to provide adequate social welfare services for GAMA, where there are more social problems than any other part of the country.

iii) **Expanding Industrial/Vocational Training Programmes:** There is one training centre for boys and girls at Osu run by voluntary organizations. The Department has an advisory role on curriculum and career development. The Department will cooperate in the expansion of the programme such as dress and shoe making, carpentry, masonry, basketing, dying, farming, hair-dressing, etc.

iv) **Expanding Welfare Services -** A variety of programmes are envisaged:

a) To provide a comprehensive programme on aging with the cooperation of the National Council on Aging and other voluntary organisations in the establishment of a day care centre for the aged.

b) To upgrade the registration of the disabled to enable the Department keep abreast with the extent of disablement in GAMA. There are plans to establish a vocational training programme for the disabled and to raise the mandatory employment quota of disabled persons from one half percent to four percent of the total employment.

v) **Involving the Business Community:** Business organizations have certain responsibilities to the community in which they are located. They would be encouraged to provide assistance by sponsoring various social welfare services such as children homes, juvenile clubs, vocational training centres, etc.

### 5.4.5 Cost Summary

The Social Welfare five year development plan will cost 1,450 million cedis. Various construction, renovation, and rehabilitation programmes are scheduled to be completed during the Plan period. Nearly 50 percent of the total cost will be spent during 1995.

**Table 5.9 Cost Summary - Social welfare Development (GAMA) 1993-1997**

	1993	1994	1995	1996	1997	Total
<b>Renovation of various facilities</b>	285	-	-	-	-	285
<b>Reconstruction of 4 buildings</b>	-	195	-	-	-	195
<b>Construction of 3 new facilities</b>	-	-	660	-	-	660
<b>Repair and rehabilitation of 3 buildings</b>	-	-	-	170	-	170
<b>Renovation of 2 buildings</b>	-	-	-	-	140	140
<b>Total</b>	<b>285</b>	<b>195</b>	<b>660</b>	<b>170</b>	<b>140</b>	<b>1,450</b>

## 5.5 RECREATION AND SPORTS

In providing facilities for recreation and sports the Government recognizes the need for building a strong and healthy nation which can effectively participate in national development. Also important is the training of individuals to a level that they can compete both in national and international sports to project a good national image. Recreation and sports in GAMA, are provided by both the public and private sectors.

### 5.5.1 Recreation

#### 5.5.1.1 Public

The public sector activities consist of development of parks and gardens, meeting halls, art galleries/centres, libraries, museums and monuments, and serviced beaches. The Department of Parks and Gardens, Ghana Library Board, Centre for National Culture and the Museums and Monuments and Tourist Development Board discharge these services in GAMA.

The FYDP focuses on the Parks and Gardens Department's development plans in view of rehabilitation and/or on-going projects which have either taken or are taking place in the other sectors and will be completed before the beginning of the plan period. The Department is responsible for planning, landscaping and maintenance of public parks and gardens. It has over 30 parks and gardens in GAMA and a nursery from which the public can buy various plants and flowers.

#### 5.5.1.2 Problems

The Department has not until recently played an active part in the urban development programmes of GAMA. The main problems facing it are:

(1) **Shortage of high level manpower.** Those that are in short supply are landscape architects, surveyors, engineers, horticulturalists, and managers trained in the administration of parks and gardens.

(2) **Inadequate logistical support.** Both the construction of new and maintenance of existing parks and gardens require various earth moving equipment, tools, materials, and vehicles. These are either lacking or inadequate.

(3) **Lack of involvement during the initial stages of planning.** Town planning and design of buildings, roads, and various public places, including squares, take place without the knowledge, advice, or cooperation of the Department of Parks and Gardens. The Department is asked to take over the management of these places after their constructions are completed. This creates a number of problems for the Department, including personnel, budget, and management.

### **5.5.1.3 Objective**

In order to remedy these situations, the Department of Parks and Gardens has initiated a number of plans and programmes the objectives of which include:

(i) to make GAMA a pleasant and livable place.

(ii) to provide guidance and cooperate with the public in the creation of new and maintenance of existing parks.

### **5.5.1.4 Strategies**

(1) **Building more parks.** The amount of open space for recreational uses in GAMA is inadequate. A number of new projects are planned at New Welja, South Ofankor, East Madina, Fafraha, Hacho and Ayimensah for completion during the Plan period.

(2) **Following an aggressive maintenance programme.** A new management programme would be introduced to maintain the existing parks and gardens. It will involve personnel deployment, and supervision; acquiring the necessary equipment, tools and materials; installation of infrastructural facilities; and, provision of logistical and support services.

Shortage of manpower, recurrent budget, equipment, and facilities (such as water supply) prevented the installment of a regular maintenance programme to the existing parks and gardens. With recent reorganization of the Department, a new schedule for maintenance, and increased budgetary resources, parks and gardens will be well maintained.

(3) **Providing advice to the public.** The Department of Parks and Gardens will expand its services in advising individuals and organisations on the planning, management, and maintenance of open spaces as well as provide the public with a nursery of flowers and plants.

### **5.5.1.5 Cost Summary**

The total cost of providing new parks and maintaining the existing ones is 948 million cedis in local currency and 60 million cedis in foreign exchange. The amount of 377 million cedis or nearly 40 percent of the total local expenditure will be spent on new parks and gardens. Maintenance of the existing parks and gardens, all of them in Accra, will cost 303 million cedis or nearly 32 percent. Tree planting, all in Tema, will be 28 percent of the total budget estimate. All of the new parks will be located in Ga district.



**Table 5.10 Cost Summary - Development and Maintenance of Parks and Gardens (GAMA) 1993-1997**

	1993		1994		1995		1996		1997		Total	
	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC
<b>New Weija South</b>	30	49	30	48	-	-	-	-	-	-	60	70
<b>Ofonkor</b>	-	10	-	11	-	-	-	-	-	-	-	21
<b>East Madina</b>	-	-	-	48	-	48	-	-	-	-	-	96
<b>Fafraha</b>	-	-	-	21	-	21	-	-	-	-	-	42
<b>Hacho</b>	-	-	-	-	-	-	-	40	-	40	-	80
<b>Ayimensah</b>	-	-	-	-	-	-	-	20	-	21	-	41
<b>Ring Road</b>	-	8	-	8	-	8	-	8	-	8	-	40
<b>State House</b>	-	7	-	7	-	8	-	8	-	8	-	8
<b>Castle</b>	-	7	-	7	-	7	-	7	-	7	-	35
<b>Nkrumah Memorial</b>	-	4	-	4	-	4	-	4	-	5	-	21
<b>Circle</b>	-	25	-	25	-	25	-	25	-	25	-	125
<b>Unity Column</b>	-	4	-	4	-	4	-	4	-	4	-	20
<b>Ministries</b>	-	2	-	2	-	2	-	3	-	3	-	12
<b>Parliament</b>	-	2	-	2	-	2	-	3	-	3	-	12
<b>Independence Square</b>	-	4	-	6	-	6	-	7	-	7	-	32
<b>Tema</b>	-	17	-	17	-	18	-	18	-	19	-	89
<b>Lashi Town</b>	-	16	-	16	-	16	-	17	-	17	-	82
<b>Ashiaman</b>	-	13	-	13	-	13	-	13	-	13	-	65
<b>Total</b>	30	170	30	239	-	182	-	177	-	180	60	948

## **5.5.2 Sports**

### **5.5.2.1 Public**

Established in 1976, the Greater Accra Sports Council is responsible for promoting and encouraging the organization and development of, and mass participation in amateur and professional sports; coordinating and integrating all efforts to raise the standards of performance; organizing and assisting financially the participation of Ghanaians in national and international competitions. Also it provides sports instructors for any team requiring instructions; provides and maintains sports centres and facilities for use by all sportsmen and sportswomen; maintains all playing fields and stadia and provides financial assistance to all recognized sports associations, and district sports councils. The functions of the district sports council are similar.

#### **(a) Sports Facilities**

There are three sports stadia in Accra: The Accra Sports Stadium which has facilities for tennis, soccer, boxing, swimming, basket-ball, volley ball, table tennis, athletics and other minor sports. The stadium is also the headquarters for the National Sports Council. The Kaneshie Sports Complex has similar facilities; and the Dansoman Community Sports Field which is the smallest and the most recent addition. The El-Wak Stadium, located in the Burma Camp section of Accra, has elaborate sports facilities, is owned and operated by the Armed Forces of Ghana. The Tema Sports Stadium also provides a number of sports activities. These stadia are open to the public on selected sports membership basis for a small fee to cover operating costs. However, students can use the facilities free of charge.

### **5.5.2.2 Private Sports**

The private recreational activities are organized on a commercial or non-profit basis. In the former category are a number of hotels with swimming pools, serviced beaches, tennis courts which are available to visitors on a fee basis. The Tesano Sports, Accra Polo, Accra Korle Bu and Adabraka Tennis Clubs, Achimota Celebrity and Tema golf Clubs, and UAC and SSNIT Clubs, are open to members and their guests. Other activities such as yachting and horse back riding are also generally accessible to the general public, but they are far beyond the financial reach of most residents of GAMA.

### **5.5.2.3 Problems**

Despite its popularity and strong Government support, there are a number of difficulties facing sports activities in GAMA. These include:

- a) inadequate sports facilities.
- b) lack of funds to rehabilitate the sporting infrastructures like the Accra Sports Stadium Swimming Pool which has been out of operation for several years.
- c) lack of regular maintenance of existing sporting facilities.
- d) shortage of financing from local government agencies and organs like the District Assemblies and the local communities.
- e) shortage of sports trainers.
- f) lack of proper co-ordination of sporting activities between the private sporting clubs and the Regional Sports Administration.

g) lack of logistical support for the Central Government sports officials to extend training and other services to the districts and the communities.

h) lack of sports equipment and facilities for training.

#### **5.5.2.4 Objectives**

- a) To provide more sports facilities at the district and local levels.
- b) To provide neighbourhoods playing grounds in GAMA.
- c) To prepare short and medium range plans for funding of sports activities in GAMA.
- d) To provide adequate trainers for sporting activities in GAMA.
- e) To provide spacious grounds and equipment for training.

#### **5.5.2.5 Strategies**

Strategies for the implementation of objectives are summarized below:

- a) Cooperating with Town and Country Planning Department in securing acceptable lands in the districts and neighbourhoods during land use planning stage.
- b) Soliciting support from corporations and other private institutions to sponsor sports activities especially at the district level.
- c) Getting the District Assemblies to allocate annually funds for sports activities in their districts.
- d) Expanding training facilities at Winneba and co-operating with Ministry of Education to improve and expand its own training facilities.
- e) Building a development fund. The Ministry of Youth and Sports has made concrete proposals for the deduction of rebates from taxable incomes of all organisations, individuals and institutions who contribute financial support to the development of sports in the country. The Ministry has also put forward the idea of Sports Lotto for the financing of Sports in Ghana as is done in Bulgaria. Additionally the government can institute a trade levy of certain imported commodities and the revenue generated from such a levy be used to finance the development of Sports in the Country.

### **5.6 EMERGENCY SERVICES**

#### **5.6.1 Police Service**

The discharge of Police Services in GAMA has been with the top five crimes of theft, fraud, threat and assault, armed robbery and rape and also Juvenile delinquency which is on the increase. However statistics are not available on the extent or frequency of these acts. Also of importance are serious traffic congestion and parking problems, particularly, at the CBD which have been attributed to poor planning, lack of traffic education, inadequate parking areas, etc.

##### **5.6.1.1 Problems**

The Service faces a number of constraints in the execution of its statutory responsibilities, including:

(a) **Shortage of manpower.** Although GAMA receives the largest share of the newly trained police recruits every year, it needs far larger numbers of policemen. Accra has about 2,000 policemen, which is about one policeman every 625 residents. This is not adequate to maintain law and order and prevent crimes.

(b) **Delay in emergency service:** Shortages of transportation and lack of communication systems such as telephones through which the public can report crimes or ask for emergency services are virtually non-existent in GAMA.

(c) **Lack of public cooperation:** The public is reluctant and/or indifferent to report crimes or cooperate with the police in investigation and/or prevention of criminal activities due to the public's mistrust of the police and the confidentiality of the information they give.

(d) **Inadequate public education:** Not much has been done to educate the public about crime prevention and protection from criminal activities. However, with the formation of various Neighbourhood Watch Committees, it appears that public's interest has been favourable to support the police.

(e) **Lack of cooperation among Governmental agencies.** The multitude of agencies involved in the planning and development of GAMA has inhibited the police traffic section from coordinating and cooperating in the solution of traffic problems. It is very difficult to overcome the traffic problems without the cooperation of all planning agencies.

### 5.6.1.2 Objectives

The objectives of the FYDP of the GAMA's Police Service are:

- (a) To reduce crime and improve the security of the citizens of GAMA.
- (b) To extend police services to parts of GAMA not covered previously.
- (c) To reduce traffic congestion.
- (d) To establish good communication and public relations with the public.

### 5.6.1.3 Strategies

The Police Service of GAMA faces a number of difficulties in its efforts to protect life and property, prevention of crimes, preservation of public order, and enforcement of the law. While some of the strategies and policies require long-term investment, others can be accomplished in the short-term and with little financial commitment. Some of the strategies to be followed include:

(a) **Increasing Manpower:** GAMA has the highest crime rates in the country. One way of ensuring the safety of the citizens is by increasing the number of police officers patrolling the streets and neighbourhoods of GAMA, which at the moment is about one policeman to 625 citizens.

(b) **Increasing the Number of Police Stations:** Accra Metropolitan Area has 31 police stations, which is one police station to about 40,000 people. Ideally, there should be one police station to 10,000 people. This will be beyond the financial means of the Police Service. The FYDP strategy will be to provide one station to 30,000 people.

(c) **Using Bicycles for Neighbourhood Patrolling:** The police's mobility to neighbourhoods is restricted due to lack of vehicles. The police needs to investigate the practicality of using small motorcycles and bicycles for the purpose of patrolling neighbourhoods.

TABLE 5.11

## Project - GHANA POLICE SERVICE (GAMA)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	COMP.
				FC (¢)	LC (¢)				
1	Police Head Quarters	To provide office/accommodation, vehicles and equipment to increase police effectiveness	Constructional Wks (offices)		150	Ghana police (GP)	Accra	1993	1993
			Vehicles		132			1993	1997
			Equipment		30			1993	1997
2	Regional Head quarters		Constructional Wks		150			1993	1997
			Vehicles		66			1993	1993
			Equipment		18				
3	Police Depot		Constructional Wks (office & residential)		1536	Ghana Police	Accra	1993	1995
			Vehicles		22			1993	1994
			Equipment		6				1997
4	CID Head Quarters		Constructional Wks		45			1993	1993
			Vehicles		99			1993	1997
			Equipment		18				
5	Kpeshie Div HQ		Constructional Wks		600	Ghana Police	Accra	1994	1996
			Vehicles		33			1994	1996
			Equipment		10				1995
6	Kotobabi Dist. HQ		Constructional Wks		250			1994	1994
			Vehicles		22			1993	1996
			Equipment		2			1994	1996

TABLE 5.11

Project - GHANA POLICE SERVICE (GAMA)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
7	Airport Dist. HQ		Constructional Wks		132	Ghana Police	Accra	1994	1996
			Vehicles		22			1993	1994
			Equipment		2			1993	1996
8	Odorkor Dist. HQ		Constructional Wks		54			1994	1996
			Vehicles		22			1993	1994
			Equipment		2			1993	1996
9	Cantonments Dist. HQ		Constructional Wks		270		Accra	1994	1997
			Vehicles		22			1993	1995
			Equipment		2			1993	1996
10	Ashaiman		Constructional Wks		520	Ghana Police	Accra	1993	1997
			Vehicles		22			1993	1996
			Equipment		2			199	1996
11	Medina PS		Constructional Wks		430		GA	1993	1996
			Vehicles		22			1993	1997
			Equipment		2			1994	1996

TABLE 5.11

## Project - GHANA POLICE SERVICE (GAMA)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
12	Achimota School PS		Constructional Wks		90		Accra	1993	1993
			Vehicles		22			1993	1997
			Equipment		2			1994	1996
13	Mile 7 PS		Constructional Wks		1060	Ghana Police	Accra	1993	1996
			Vehicles		22			1993	1997
			Equipment		2			1994	1996
14	Polenase PS		Constructional Wks		322			1995	1997
			Vehicles		11			1994	1994
			Equipment		2			1994	1996
15	North Legon PS		Constructional Wks		322		Accra	1994	1996
			Vehicles		11			1995	1995
			Equipment		15			1994	1997
16	Adenta PS		Constructional Wks		322	Ghana Police	Accra	1993	1995
			Vehicles		11			1994	1994
			Equipment		19			1993	1997

TABLE 5.11

## Project - GHANA POLICE SERVICE (GAMA)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR	
				FC (¢)	LC (¢)			START	COMP.
17	Salenmono PS		Constructional Wks		20	Ghana Police	Accra	1993	1993
			Vehicles		11			1993	1993
			Equipment		20			1993	1997
18	Lashibi PS		Constructional Wks		322			1994	1996
			Vehicles		11			1994	1994
			Equipment		16			1994	1997
19	Cumminity 11 Tema		Constructional Wks		322		Accra	1993	1995
			Vehicles		11			1994	1994
			Equipment		20			1993	1997
20	Nima Div. HQ		Constructional Wks		289	Ghana Police	Accra	1996	1997
			Vehicles		33			1996	1996
			Equipment		4			1995	1996
21	Abeka PS		Constructional Wks		322	Ghana Police	Accra	1994	1996
			Vehicles		11			1995	1995
			Equipment		16			1994	1997



TABLE 5.11

## Project - GHANA POLICE SERVICE (GAMA)

PRO. NO.	PRO. TITLE	OBJECTIVE	DESCRIPTION	COST (MILLIONS)		EXECUTING AGENCY	LOCATION	YEAR START	YEAR COMP.
				FC (¢)	LC (¢)				
22	Taifai PS		Constructional Wks		322	GA		1993	1995
			Vehicles		11			1995	1995
			Equipment		20			1993	1997
23	Mallam PS		Constructional Wks		322		Accra	1994	1996
			Vehicles		11			1995	1995
			Equipment		16			1994	1997
24	Nima Div. HQ		Constructional Wks		896	Ghana Police	GA	1994	1996
			Vehicles		11			1994	1994
			Equipment		2			1994	1996
25	Taifai PS		Constructional Wks		322	GA		1995	1997
			Vehicles		11			1994	1994
			Equipment		2			1994	1997

(d) **Establishing Neighbourhood Watches** The idea, used in some areas of GAMA, has shown some signs of success in the prevention of crimes. The police should encourage their establishment in all neighbourhoods.

(e) **Public Education:** Educating the public, especially students, about crimes and methods of prevention can be effective in the long run. This programme, used in limited areas and circumstances, needs to be expanded to all areas of GAMA.

(f) **Public Relations:** Often, the police need the cooperation of the public in criminal investigation. The public is, however, reluctant to provide information for fear of reprisal and lack of police protection and confidentiality. An effective public relations program aimed at establishing trust and good working relationships with the general public will be undertaken through the media and the neighbourhoods watches.

(g) **Improved Communication:** Lack of street numbering and public telephones have prohibited the prevention of crimes, particularly when they are in progress. The extension of these facilities and services to all parts of GAMA will not only facilitate police function, but also general business communication.

#### 5.6.1.4 Cost Summary

The total capital cost is estimated at 10,232 million cedis nearly 55 percent of which will be for the first two years of the Plan period. Only 423 million cedis or 4 percent of the total budget will be left for the final year.

Table 5.12 Cost Summary - Police Service (GAMA) 1993-1997

	1993 LC	1994 LC	1995 LC	1996 LC	1997 LC	Total LC
001 Police Headquarters	204	-	54	-	54	312
002 Regional "	178	-	28	-	28	234
003 Police Depot	697	445	382	38	2	1,564
004 CID "	84	-	39	-	39	162
005 Kpeshie Div. "	16	200	216	211	-	643
006 Kotobabi Dist. "	11	251	-	12	-	274
007 Airport Dist. "	127	17	-	1	11	156
008 Odorkor Dist.	38	28	-	11	1	78
009 Cantonments Dist.	101	91	90	11	1	294
010 Ashiaman	131	101	100	112	100	544
011 Madina	171	91	90	90	12	454
012 Achimota School	101	1	-	1	11	114
013 Achimota Mile (7)	301	291	290	190	12	1,084
014 Pokuase	-	12	126	106	91	335
015 North Legon	-	130	120	94	4	348
016 Adenta	129	120	94	5	4	352
017 Sakumono	35	3	45	5	4	51
018 Lashibi	-	140	110	94	5	349
019 Community 11 Tema	129	121	94	4	5	353
020 Community	2	126	108	90	-	326
021 Abeka	-	130	120	94	5	349
022 Taifa	129	110	105	4	5	353
023 Mallam	-	130	120	94	5	349
024 Amasaman	-	405	323	181	-	909

025 Bortianor	-	12	126	106	1	245
<b>Total</b>	<b>2,584</b>	<b>2,955</b>	<b>2,739</b>	<b>1,554</b>	<b>400</b>	<b>10,232</b>

## 5.6.2 Fire Service

Fire Service in GAMA is delivered by means of two regional stations - one each in Accra and Tema. The Service has responsibility for prevention and suppression of fires and fire fighting and rescue operations to protect life and property from the ravages of fire resulting from man-made and natural disasters like earthquakes, storms, etc. The service is delivered by means of 600- 800 capacity fire tenders which are serviced by 500 fire hydrants in GAMA, about 50% of which are not servicable. GAMA is served by 1823 officers most of whom were trained locally at the James Town Depot in Accra. The Depot trains 400 recruits annually.

### 5.6.2.1 Problems

The major causes of fire in GAMA are electrical, fuel and fats, gas, cigarettes, children playing with fire, and mosquito coils. The regional fire services are unable to attend to all reported fire accidents. The reason is part of a larger problem which the fire services, especially in Accra, face. These include:

- (a) The present fire engines are too small and outdated and obsolete.
- (b) The streets in GAMA generally are very narrow and fire engine movements are restricted by traffic and congestion.
- (c) Water supply for fire service is unreliable and inadequate and the fire hydrants are inadequate and malfunctioning.
- (d) Access roads to houses, street names and house numbers are woefully lacking in Accra. These three issues continue to hamper and retard efficient delivery of fire services for the protection of property and the saving of lives.
- (e) Another serious drawback in the fire fighting and prevention services is the lack of telephones, both public and private.
- (f) Certain sections of GAMA are in an earthquake prone zone and yet there are no adequate plans and programmes for emergencies in case of earthquake or earth tremors.
- (g) No fire codes are available to guide the division. The ones in use are obsolete based on British Fire Codes.

### 5.6.2.2 Objectives

There are plans to address these problems and future development of the fire service programme in GAMA, the objectives of which are:

- (a) To improve the quality of fire service in all parts of GAMA.
- (b) To extend fire services in parts of GAMA not yet covered.
- (c) To initiate and strengthen cooperation with agencies dealing with various infrastructural developments in GAMA.
- (d) To train additional personnel to man existing and new fire stations.

- (e) To draft new fire codes.

### 5.6.2.3 Strategies

The following strategies will be used to implement the above objectives:

- (a) **Rehabilitation of non-functioning fire hydrants.** Of the estimated 500 less than 50 percent are functional, the rest are either dry or buried under soil sediments.
- (b) **Installing new fire hydrants.** Over 3000 fire hydrants are planned to be installed in Ghana, of which over 50 percent will be in GAMA, during the plan period.
- (c) **Building new fire stations.** Six new fire stations are planned to be opened between 1993 and 1997.
- (d) **Cooperating with relevant agencies providing infrastructural services and building permits to ensure the enforcement of fire regulations which will be drafted soon during the plan period.**
- (e) **Expanding the training facilities for increased production of well trained fire service manpower.**

### 5.6.2.4 Cost Summary

The total budget estimate for GAMA's Fire Service is 3,424 million cedis, of which 3339 million cedis or 97.5 percent will be required in foreign exchange for the purchase of fire engines, utility vehicles, and various personnel protective materials and wears. The local component consists of building fire stations, at three different locations, training, and cost of uniforms.

Table 5.13 Cost Summary - Fire Prevention 1993-1997

	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	Total LC
001 Teshie Fire Station	-	18	-	-	-	-	-	-	-	-	-	18
002 Abeka Fire Station	-	-	18	-	-	-	-	-	-	-	-	18
003 Tema Fire Station	-	-	-	-	18	-	-	-	-	-	-	18
004 Fire Fighting Equipment	5	3	6	3	5	3	-	-	-	-	16	9
005 Fire Engines	-	-	982	-	982	-	982	-	-	-	2,947	-
006 Utility Vehicles	-	-	68	-	68	-	69	-	-	-	205	-

**007 Fire  
Protection  
Materials**

-	-	57	-	57	-	57	-T-	-	171	-	-
---	---	----	---	----	---	----	-----	---	-----	---	---

**008 Manpower  
Training**

-	7	-	8	-	7	-	-	-	-	-	22
---	---	---	---	---	---	---	---	---	---	---	----

---

Total	5	28	1,113	29	1,112	28	1,109	-	-	-	3,339	85
-------	---	----	-------	----	-------	----	-------	---	---	---	-------	----

## **Chapter 6**

# **URBAN MANAGEMENT**

### **6.1 Introduction**

Several problems and issues which adversely affect effective management of GAMA as well as strategies and policies for solving them over the plan period have been extensively discussed in Volumes 1 and 2 of this plan. This part of the FYDP focuses on some of the major metropolitan management constraints that should be addressed, and policies and strategies to be adopted within the first five years of the implementation of the plan for efficient management of the metropolitan area.

### **6.2 Problems**

(a) Apart from the Accra Master Plan prepared in 1958 and the Accra-Tema Plan of 1961 which were oriented primarily to physical development there has not been an overall comprehensive long term development framework for guiding the physical, environmental, economic and social development and the coordinated provision of public utilities and services for the contiguous and rapidly growing developments in Accra, Tema and Ga districts.

(b) There is no overall coordination mechanism for ensuring integrated planning, development and delivery of services for the three districts of GAMA.

(c) Lack of effective coordination between organisations and agencies responsible for urban development and the delivery of public utilities and services within the metropolitan area.

(d) Weak management capacity of the three Assemblies in GAMA partly due to limited expertise and resources to cope with rapid urbanisation and metropolitan management.

(e) Deficiencies in professional and technical skills necessary in organisations and agencies (especially the three Assemblies in GAMA) responsible for planning and management of development in the metropolitan area.

(f) Lack of readily accessible reliable information and up-to-date maps for planning, management and services delivery and maintenance for the metropolitan area.

### **6.3 Objectives**

The overall goal for urban development stated in the Strategic Plan is to establish and operate efficient and effective management systems and organisations for planning, development and management of GAMA. The objectives in support of this goal for the five year development plan are as follows:

(a) To ensure the adoption and implementation of the Strategic Plan by the three assemblies in GAMA, as well as other organisations and agencies responsible for development and management of the metropolitan area.

(b) To provide mechanisms for the establishment and operation of an overall coordination institution for integrated planning and development of the three districts of GAMA.

(c) To encourage more effective coordination between organisations involved in planning, development and the delivery of services in GAMA.

(d) To build the management capability of the three assemblies and other organisations and agencies in GAMA.

(e) To improve professional and technical skills of personnel and to attract additional necessary skilled personnel to organisations responsible for planning, development and management of GAMA for effective execution of their respective functions.

(f) To establish an information centre for metropolitan planning, management, development co-ordination and monitoring.

## 6.4 Strategies

### 1. Adoption of Plans

The Strategic Plan and this Five Year Development Plan provide comprehensive long and medium term frameworks for guiding the coordinated development and management of GAMA. The plans have been prepared within the context of national, local and sectoral policies and objectives. They have been formulated in consultation and with the cooperation of all organisations and agencies involved in the development and management of the metropolitan area. The various plans, projects, programmes, costs and priorities provided in this FYDP are the results of intensive consultations, discussions and agreements with these organisations and agencies. Mechanisms for the adoption and implementation of the plans have been set out in the Strategic Plan.

The draft plans will be circulated for review by the three Assemblies in GAMA, an overall development and management coordination body to be appointed by Government and all other organisations and agencies responsible for planning and development of GAMA. The plans will be revised where necessary. The final plans should then be adopted by Government and the above mentioned organisations and agencies as statutory plans for implementation. There should be total commitment on the part of Government and all organisations responsible for the plans' implementation.

### 2. Development and Management Coordination

As part of strategies for strengthening the role of local government as the main coordinating body for management of development, and for coordinated development in the three districts of GAMA, proposals have been made for the districts to be amalgamated and their combined area given special status as the nation's capital district and a unitary management body established for it. To achieve these objectives Government is to take the following actions using the provisions of the Local Government Law 1988, PNDC Law 207 and the approved National Development Planning Law.

(a) designate the administrative areas of the three districts of GAMA - Accra, Tema and Ga as National Capital Territory.

(b) declare the Territory as a Special Development Area and

(c) appoint a Joint Development Planning Board as an overall management coordination body for the territory with powers to coordinate planning and development in the area.

The legislations should define the geographical limits of the National Capital Territory as well as the Special Development Area to conform to the composite administrative boundaries of Accra, Tema and Ga Districts; and specify the composition, functions and powers of the Joint Development Planning Board.

The Ministry of Local Government in conjunction with the National Development Planning Commission (NDPC) have already submitted proposals for the designation of Accra Metropolitan Area, Tema Municipality and Ga District as a Special Development Area and the establishment of a Joint Development Planning Board for the area to the PNDC for consideration.

The proposals specify the functions and composition of the Joint Development Planning Board as follows:

### **Functions**

- (a) formulate and review on a continuous basis long and medium term strategic perspective plans for the area and other integrated plans and programmes for guiding economic, social, physical and environmental development and the provision of services.*
- (b) rationalize, harmonize and synthesize national and local policies, strategies and programmes for development and the provision of public services in the area.*
- (c) ensure that all development, plans and programmes for Accra Metropolitan, Tema Municipal and Ga District Assemblies, Ministries and other central government agencies including those statutory corporations responsible for providing public utilities for the area are in conformity with the perspective plans.*
- (d) co-ordinate and approve detail plans and programmes of Accra Metropolitan, Tema Municipal and Ga District Assemblies, ministries and other central government agencies including those statutory corporations responsible for providing public utilities for the area.*
- (e) monitor, direct and co-ordinate the implementation of programmes and projects for developing and servicing the area and evaluate their performance.*

### **Composition**

- (a) a Chairman appointed by the PNDC*
- (b) PNDC Regional Secretary for Greater Accra Region.*
- (c) PNDC District secretaries for Accra Metropolitan, Tema Municipal and Ga Districts.*
- (d) Presiding Members of Accra Metropolitan, Tema Municipal and Ga District Assemblies.*
- (e) Chairmen of the Economic Development Sub-Committee, Social services Sub-Committee, Technical Infrastructure Sub-Committee and Financial and Administration Sub-Committee of the above mentioned Assemblies.*
- (f) Chairman of Board of Administration, Board of Municipal services and Metropolitan Planning Commission of the above mentioned Assemblies.*
- (g) Representatives of the Ministries of Local Government, Works and Housing, Transport and Communications, Roads and Highways, Education and Health, who should be of a rank not lower than a Director.*
- (h) Executive Heads of the Lands Commission, Water and Sewerage Corporation, Posts and Telecommunications Corporation, Electricity Corporation, Tema Development Corporation, State Housing Corporation, Technical Services Centre, Department of Urban Roads and Survey Department or their representatives who should be of a rank not below a Deputy Chief Executive or Regional Director.*
- (i) Five distinguished citizens with demonstrated ability, experience or interest in economic, social and environmental considerations of development.*

*The Joint Development Planning Board is to have sole authority over all branches of central government agencies, statutory cooperations and the decentralized departments which effect development and the*



*provisions of services in the area and who would be required to assist the Board in exercising its functions.*

*The above provision it is hoped will put in place an effective coordination mechanism for integrated planning, development and management of the metropolitan area and ensure coordination amongst organisations, agencies and the three district assemblies responsible for development of the metropolitan area.*

### **Secretariat for Joint Development Planning Board**

The Joint Development Planning Board when appointed will require a technical secretariat and the board should establish one. The Accra Planning and Development Programme will form the nucleus of the secretariat which should have the following units:

- (a) **General Administration** (administration, secretarial)
- (b) **Development Planning and Management** (development planning, action planning, planning standards and guidelines, development control and development promotion).
- (c) **Infrastructure Planning** (transportation, communication, energy, water, waste management).
- (d) **Social & Economic Planning** (population, employment, housing, health, education, welfare, local economy, industry, commerce, informal sector).
- (e) **Information** (spatial, statistical)
- (f) **Technical Support.**

The Board should identify and recruit personnel in the following disciplines to service the secretariat:-

Urban/Metropolitan Planning, Urban/Metropolitan Management, Urban Economics, Transportation Planning, Social Planning, Infrastructure Planning, Municipal Engineering, Architecture, Landscape Design, Information Technology/Data Management, Administration.

### **3. Manpower Development Programme**

A structured comprehensive skills upgrading programme for professional and technical levels over a 10 year period should be initiated by the district assemblies, the proposed Joint Development Planning Board and other organisations responsible for planning and development of the metropolitan area.

Training is required in all the disciplines specified for the various units of the secretariat for the JDPB and other organisations involved in planning and development of the metropolitan area. Both in-country training in appropriate institutions and overseas long term, medium term formal courses and medium term practical attachments should be pursued. International donor assistance should be sought for the programme.

### **4. Establishment of Information Centre/Mapping.**

#### **(a) Information Centre**

The Accra Planning and Development Programme has acquired equipment for the establishment of a Geographic Information System for spatial data base to support planning management and infrastructure development. A pilot project for the conversion of existing 1:50,000 paper maps into a digital data base will be completed by end of 1992. A more comprehensive data base using a larger scale base map of 1:2500 will be required. These common digital spatial data bases if created could form the core base for use in all

government and parastatal organisations' information systems for data processing and information sharing and dissemination. Additional equipment and resources would be required for the expanded programme and the UNDP or other bilateral and multi-lateral agencies should be approached for funding assistance.

(b) Mapping.

For regular updating of maps for the metropolitan area aerial photographs will be required at least every 5 years. A programme of assistance is required for the Survey Department to acquire aerial photographs and to produce maps for the metropolitan area. The World Bank under its Urban II programme is offering the department assistance to procure aerial photographs for the metropolitan area in 1992 but further assistance will be required before maps are produced from these photographs. Government should seek donor assistance for the mapping programme of the department.

## 6.5 Cost Summary

Cost summaries indicating yearly planned expenditure for broad activities or projects to be undertaken for expected improvements of management in the metropolitan area during the FYDP period are indicated in Table 6.1.

Table 6.1 Cost Summary - Urban Management (1993-1997)

Project	Planned Expenditure (million cedis)										Total	
	FC	1993 LC	FC	1994 LC	FC	1995 LC	FC	1996 LC	FC	1997 LC	FC	LC
Estab- lishment, Operation of JDPB and Secretariat	6	32	15	36	18	3	-	45	-	5	39	203
Manpower Develop- ment	53	10	53	14	5	16	38	18	38	14	233	72
Information System/ Mapping	75	30	56	40	23	45	4	50	23	40	181	205
<b>Total</b>	<b>134</b>	<b>72</b>	<b>124</b>	<b>90</b>	<b>92</b>	<b>99</b>	<b>42</b>	<b>113</b>	<b>61</b>	<b>106</b>	<b>453</b>	<b>480</b>

FC = Foreign Currency equivalent  
LC = Local Currency

## FINANCING THE PLAN

The financing of a plan generally involves the diversion, through, the use of various financial instruments including taxation, of the required volume of real resources for purposes of investment. The volume of resources that could be diverted for investment would depend on the rate of investment and the growth of income. In a mixed economy such as Ghana's the programme of investments embodying the pattern of allocation laid down in the Plan are to be implemented both through direct public sector outlays and through influencing and regulating the flow of resources in the private sector. The private sector savings include corporate, household savings. The sources of public sector investment are both central government and public enterprises.

In addition to the programme of public sector investment, the Plan contains a set of policies designed to bring about the desired pattern of investment in the private sector. Other policies supportive of the Plan include Government policies which lead to efficiency and economy in resources use in both the public and private sectors. In designing the policy framework, both the choice of instruments and the nature of use need to be considered. The Government has at its disposal various instruments, including financial controls involving the use of fiscal, monetary, credit policies, and those of direct controls such as licensing. The success of the Plan, therefore, will depend, among others, on the choice of the correct policy framework.

The total resources available for investment consists of domestic savings and inflow of capital from abroad. The volume of domestic savings that could be mobilised depends on the pattern of past behaviour and long-term tendencies in the economy such as the population's propensity to save, the tax-system, incentives, and institutional and policy changes. The domestic savings portion of the total five year budget shown on Table 6.2 consists of individual savings, and non-financial corporate and cooperative enterprises, with a total budget of 196 billion cedis, of which nearly 80 billion cedis will be borne entirely by the private sector for land, housing and for basic educational facilities. The balance is expected to come from public enterprises and the corporate sector.

The public sector has two components: local and foreign exchange. The former is estimated to be 383 billion cedis of which nearly 89 billion cedis is expected expenditure on infrastructural facilities and about 91 billion cedis in social services excluding housing which alone requires an investment of 181 billion cedis. The total public sector commitment will be 202 billion cedis.

The foreign exchange component is expected to be 212.7 billion cedis. Nearly 185.5 billion cedis or 87 percent are earmarked for infrastructural development. Most of which will be spent on projects that are expected to recover their costs through public service charges.

The total budget for the FYDP is 596 billion cedis. The foreign exchange component is estimated to be 212.7 billion cedis or 35.7 percent. Some of this money has been committed by various bilateral and multilateral organisations. It is hoped that the rest will be available during the plan period.

The importance of implementation can scarcely be over-emphasised. The best of plans can go wrong for lack of effective implementation. There is a strong need to evolve an appropriate set of policies and procedures for implementation.

**Table 6.2 Total 5-Year Budget - All Sectors (1993-1997)**

Expenditure (million cedis)													
	1993		1994		1995		1996		1997		Total		Grand Total
Projects	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	FC	LC	
PRODUCTIVE SECTORS													
Agriculture	48	215	1,115	64	-	-	-	-	-	-	1,163	279	
Industry	5,738	1,755	4,718	1,309	4,238	1,000	-	-	-	-	14,694	4,064	
Land	-	3,137	-	3,137	-	3,137	-	3,821	-	3,821	-	17,053	
SUB													
TOTAL	5,786	5,107	5,833	4,510	4,238	4,137	-	3,821	-	3,821	15,857	21,396	37,253
INFRASTRUCTURE SECTORS													
Energy	10,183	4,508	6,720	2,037	6,048	1,510	4,834	1,525	2,603	1,515	30,388	11,095	
Water	5,548	583	5,549	583	3,247	380	3,686	433	3,693	441	21,723	2,420	
Liquid Waste Management	1,941	1,011	156	545	3,546	720	254	520	30	402	5,927	3,198	
Drainage	-	3,557	-	5,533	-	9,654	-	8,830	-	4,431	-	32,005	
Solid Waste Management	608	507	467	6	530	6	467	4	467	4	2,539	527	
Transport and Communication	28,200	10,592	21,904	9,981	15,173	7,954	9,592	4,568	5,896	2,430	80,765	35,525	
Postal Services	14,720	78	5,120	20	3,840	28	3,200	16	640	6	27,520	148	
Telecommunications	2,314	233	2,270	233	2,270	233	2,270	233	723	73	9,847	1,004	
SUB													
TOTAL	63,514	21,069	42,186	18,938	34,654	20,485	24,303	16,128	14,052	9,302	178,709	85,922	264,631

## SOCIAL SERVICE SECTORS

Education	200	12,852	-	11,471	-	15,503	-	11,955	-	12,896	200	64,677
Health	653	410	-	140	-	270	-	300	-	160	653	1,280
Manpower and Employ- ment	-	594	-	616	-	642	-	670	-	695	-	3,217
Housing	113	21,245	113	27,558	113	32,717	114	18,343	114	20,237	567	120,100
Social Welfare	-	285	-	195	-	660	-	170	-	140	-	1,450
Recreation/ Open Space	30	170	30	239	-	182	-	177	-	180	60	948
Police	-	2,770	-	2,714	-	2,505	-	1,344	-	190	-	9,523
Fire	5	28	1,113	29	1,112	28	1,109	-	-	-	3,339	85
Environ- ment	1,309	2,633	1,177	1,739	1,177	1,739	1,177	1,739	1,177	1,739	6,017	9,589
<hr/>												
SUB TOTAL	2,310	40,987	2,433	44,701	2,402	54,246	2,400	34,698	1,291	36,237	10,836	210,869 221,705

## ADMINISTRATIVE SECTORS

Urban Manage- ment	134	72	124	90	92	99	42	113	61	106	453	480
Structure Planning	12	123	12	152	15	141	15	13	18	144	72	691
SUB TOTAL	146	195	136	242	107	240	57	244	79	250	525	1,171 1,696
<hr/>												
GRAND TOTAL	71,756	67,358	50,588	68,391	41,401	79,108	26,760	54,891	15,422	49,610	205,927	319,358 525,285

FC = Foreign Currency Equivalent

LC = Local Currency