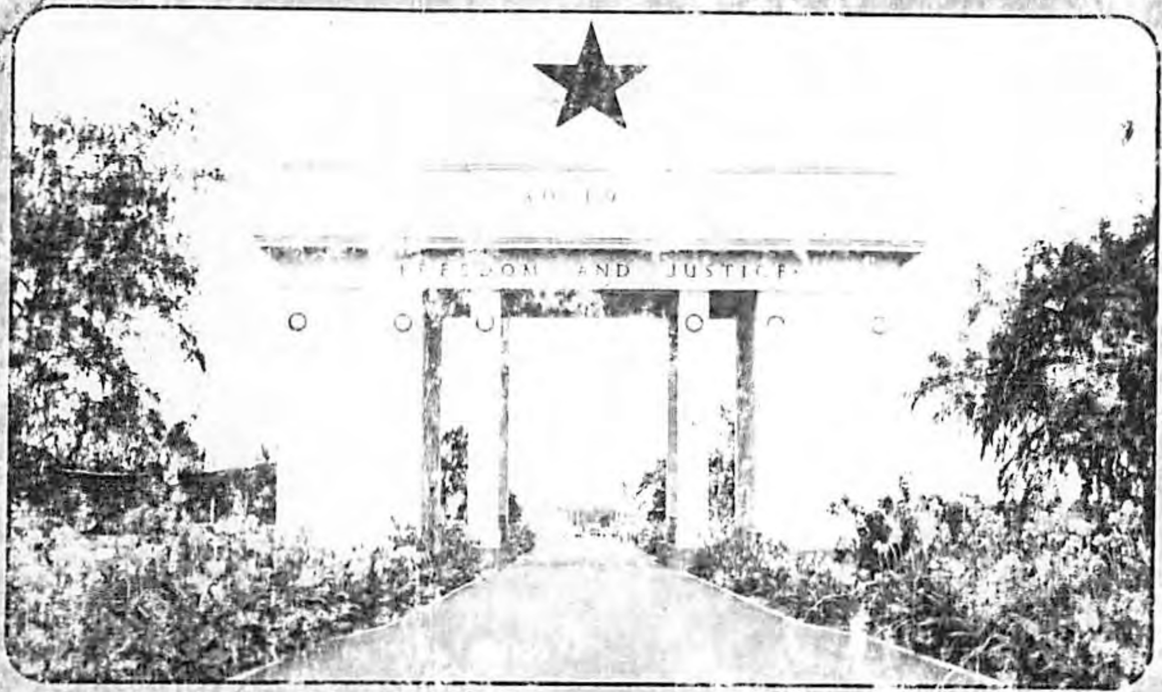
MINISTRY OF LOCAL GOVERNMENT
DEPARTMENT OF TOWN AND COUNTRY PLANNING



STRATEGIC PLAN FOR THE GREATER ACCRA METROPOLITAN AREA

VOLUME 1

CONTEXT REPORT

DRAFT FINAL REPORT

Dec - 199[illegible]

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

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TABLE OF CONTENTS

Chapter 1 1
INTRODUCTION 1

1.1 BACKGROUND 1
1.2 NEED FOR A STRATEGIC PLAN 1
1.3 SCOPE OF THE STRATEGIC PLAN 3
1.4 THE PLAN AREA 3
1.5 CONTENTS OF THE PLAN 5
1.6 DEFINITIONS 5
1.6.1 ABBREVIATIONS 5
TERMS 7

Chapter 2 8
THE ENVIRONMENT 8

2.1 DESCRIPTION OF THE NATURAL ENVIRONMENT 8
2.1.1 Geography 8
2.1.2 Geology and Soils 8
2.1.3 Climate 11
2.1.4 Vegetation 12
2.1.5 Fauna 13
2.1.6 Water Quality 13
2.1.7 Air Quality 15
2.2 ENVIRONMENTAL CONSTRAINTS 15
2.3 OPPORTUNITIES FOR ENVIRONMENTAL IMPROVEMENT 17

Chapter 3 18
ECONOMIC DEVELOPMENT 18

3.1 ECONOMIC DEVELOPMENT OF GAMA 18
3.2 THE STATE OF THE ECONOMY 18
3.2.1 The National Economy 18
3.2.2 Prices and Wages 19
3.2.3 The National Public Investment Programme 19
3.2.4 Savings and Investment 20
3.2.5 Taxes 20
3.2.6 Household Expenditure 20
3.2.7 The Economy of GAMA 20
3.3 AGRICULTURE 21
3.3.1 Fishing 21
3.3.2 Livestock 21
3.3.3 Crops 21
3.4 INDUSTRY 22
3.4.1 Structure of the Industrial Sector 22
3.4.2 Manufacturing 22
3.4.3 Industrial Employment 22

3.4.4 Developing GAMA's Manufacturing Capacity 22
3.5 SERVICES 23
3.5.1 Structure and Characteristics of the Service Sector 24
3.5.2 Financial Services and Institutions 24
3.5.3 Employment in the Service Sector 25
3.5.4 Redeployment in the Public Sector 26
3.6 EMPLOYMENT PROJECTION AND ANALYSIS 26
3.7 EXPORT EMPLOYMENT 27
3.8 INFORMAL SECTOR 27
3.8.1 Characteristics and Employment 28
3.8.2 Role of Women 28
3.8.3 Contribution to AMA 29
3.9 ISSUES IN ECONOMIC DEVELOPMENT 29
3.9.1 Formal Sector 29
3.9.2 Informal Sector 32

Chapter 4 36
URBAN ENVIRONMENT ✓ 36

4.0 INTRODUCTION 36
4.1 POPULATION AND DEMOGRAPHIC TRENDS 36
4.1 1 Past Trends 36
4.1.2 Factors Influencing Population Change 37
4.1.3 Projections 39
4.1.5 Issues Affecting Population and Planning. 42
4.2 URBAN DEVELOPMENT 43
4.2.1 Historic Pattern of Development 43
4.2.2 Urban Structure and Land Use 45
4.2.3 Issues Affecting the Preparation of the Structure Plan 61
4.2.4 Future Development Plan 64
4.2.5 Alternative Structure Plan Concepts 65
4.2.6 Proposed Structure Plan 71
4.3 LAND 74
4.3.1 Existing Land and Property Market 74
4.3.2 Issues Affecting Land Development 77
4.3.3 Opportunities for Improved Land Delivery 81
4.4 HOUSING 82
4.4 .1 Introduction 82
4.4.2 Existing Situation 82
4.4.3 Housing Delivery 92
4.4.4 Constraints 95
4.4.5 Housing Development Opportunities 97
4.5 URBAN LANDSCAPE 99
4.5.1 Introduction 99
4.5.2 Townscape 99
4.5.3 Landscaping 100
4.5.4 Environmental Quality ✓ 100

Chapter 5 102

TRANSPORTATION, ENGINEERING SERVICES AND ENERGY 102

5.1 TRAFFIC AND TRANSPORTATION 102
5.1.1 Road Transport 102
5.1.2 Railways 116
5.1.3 Air Transport 117
5.1.4 Ports and Harbours 118
5.2 ENGINEERING SERVICES 120
5.2.1 Water Supply 120
5.2.2 Liquid Waste Management 127
5.2.3 Drainage 134
5.2.4 Solid Waste Management 142
5.2.5 Electricity 148
5.2.6 Telecommunications 153
5.2.7 Postal Services 159
5.3 ENERGY 162
5.3.1 Hydropower 162
5.3.2 Petroleum and Gas 162
5.3.3 Firewood and Charcoal 163
5.3.4 Solar and Wind Energy 163
5.3.5 Tidal Energy 164
5.3.6 Energy Conservation 164

Chapter 6 165
SOCIAL SERVICES 165

6.1 INTRODUCTION 165
6.2 EDUCATION AND MANPOWER 165
6.2.1 Organization and Administration 165
6.2.2 Educational Reform 165
6.2.3 School Enrolment in GAMA 167
6.2.4 Higher Education 171
6.2.5 Non-Formal Education 171
6.2.6 Manpower 173
6.2.7 Issues in Educational Services 177
6.3 HEALTH 179
6.3.1 Organization and Administration of Health Services 179
6.3.2 GAMA's Population 179
6.3.3 Health Policy and Strategy 179
6.3.4 Health Conditions 180
6.3.5 Health Services 180
6.3.6 Health Facilities 181
6.3.7 Financing Health Services 182
6.3.8 Manpower and Training 183
6.3.9 Planning and Management of Health Services 184
6.3.10 Issues in the Delivery of Health Services 184
6.4 WELFARE SERVICES 186
6.4.1 Organization of Welfare Services 186
6.4.2 Welfare 186
6.4.3 Social Defence Services 187
6.4.4 Children's Services 188

6.4.5 Service for the Youth 188
6.4.6 Services for the Sick and Destitute 188
6.4.7 Training and Manpower 189
6.4.8 Issues in the Delivery of Welfare Services 189
6.5 RECREATION 190
6.5.1 The Organization of Recreational Activities 190
6.5.2 Private 190
6.5.3 Public 190
6.5.4 The Greater Accra Sports Council 191
6.5.5 Sports Facilities 191
6.5.6 Non Sports Recreational Activities 191
6.5.7 Issues in Recreational Activities 191
6.6 EMERGENCY SERVICES 192
6.6.1 Organization and Management of the Police Force 192
6.6.2 The Goals of the Police Service 193
6.6.3 Major Criminal Activities 193
6.6.4 Implementation Strategy 193
6.6.5 Manpower and Training 193
6.6.6 Issues in Police Service 194
6.7 FIRE SERVICE 195
6.7.1 Organization of the Fire Service 195
6.7.2 Manpower and Training 195
6.7.3 Major Causes of Fire 195
6.7.4 Fire Regulations 195
6.7.5 Agency Coordination and Cooperation 196
6.7.6 Fire Services 196
6.7.7 Location of Fire Stations 196
6.7.8 Public Relations 196
6.7.9 Issues in Fire Service 196
6.8 NATIONAL SECURITY 197
6.8.1 Defence Facilities 197
6.8.2 The Implications of the Military Bases in GAMA 197
6.8.3 Contribution of Defense to the GAMA 197
6.8.4 Constraints upon Development 198
6.9 DISASTER RELIEF AND REHABILITATION 199
6.9.1 Organisation and Administration 199
6.9.2 Functions 199
6.9.3 Relief and Rehabilitation in GAMA 199
6.9.4 Issues 200

Chapter 7 201
URBAN MANAGEMENT 201

7.1 MANAGEMENT OF DEVELOPMENT 201
7.1.1 International Community 201
7.1.2 Central Government 201
7.1.3 Regional Administration 202
7.1.4 Local Government 202
7.1.5 Development Agencies 204
7.1.6 Business and Corporate Sector 205
7.1.7 Non Governmental Organizations 205

7.1.8 Traditional Land Owners 205
7.1.9 Private Individuals 205
7.2 URBAN MANAGEMENT ISSUES 205
7.2.1 Lack of Defined Responsibilities in Organizations 205
7.2.2 Coordination 206
7.2.3 Planning 207
7.2.4 Organization of Local Government 208
7.2.5 Resource Management 209
7.2.6 Information Systems 210
7.2.7 Project Management 210
7.2.8 Appropriate Technology 210
7.2.9 Maintenance and Monitoring 210
7.2.10 Law Enforcement 211
7.2.11 Conclusion 211
7.3 ALTERNATIVE MANAGEMENT STRUCTURES FOR GAMA 211
7.3.1 Joint Development Planning Board. 212
7.3.2 Accra National Capital Assembly 212
7.3.3 National Capital Commission 214
7.3.4 National Capital Development Authority 216
7.3.5 Conclusion 216

Chapter 8 **217**
RURAL ENVIRONMENT **217**

8.1 INTRODUCTION 217
8.2 THE PHYSICAL ENVIRONMENT 217
8.3 POPULATION 218
8.4 LANDUSE 218
8.5 SETTLEMENT PATTERN 218
8.6 ECONOMY 219
8.6.1 Agriculture 219
8.6.2 Industry 220
8.6.3 Recreation 220
8.8 SOCIAL SERVICES 220
8.8.1 Education 220
8.8.2 Health 220
8.8 RURAL INFRASTRUCTURE 220
8.9 ISSUES AFFECTING RURAL DEVELOPMENT 221

REFERENCES **222**

LIST OF TABLES

Table 3.1 Actual and Projected Sectoral Economic Conditions for Ghana 19
Table 3.2 Distribution of Average Household Expenditure By Locality and Type (Percent) 20
Table 3.3 Industrial Sector Employment 22
Table 3.4 Real interest rates, 1987-1991 in percentages 25
Table 3.5 Service Sector Employment 26
Table 3.6 GAMA Employment Projection 27
Table 3.7 Export Employment 27
Table 3.8 Informal Sector Employment 1984 28
Table 3.9 Projected Informal Sector Employment AMA 1990 & 1995 29
Table 4.1 Population of GAMA 1960, 1970 and 1984 Censuses 36
Table 4.2 Age and Sex Distribution of Population 37
Table 4.3 Population Projections 1990 - 2010 42
Table 4.4 Population Projections for Districts in GAMA 1990-2010 42
Table 4.5 Land Use in GAMA. 48
Table 4.6 Proportion of Business Activities in the CBD 57
Table 4.7 Summary of Land Use Requirements 64
Table 4.8 Land Costs 1990 76
Table 4.9 Rental Charges 1991 76
Table 4.10 Housing Stock in GAMA 1960 - 1990 87
Table 4.11 Percentage Increase in Housing Stock (1960 -1990) 87
Table 4.12 Housing Density Indicators in GAMA(1990) 89
Table 4.13 Housing Infrastructure and Intensity of use in GAMA (1990) 90
Table 4.14 Housing Construction Costs (1990) 91
Table 4.15 State and Parastatal Housing Stock in GAMA 92
Table 4.16 Projected Population, Housing Need and Deficits for GAMA (1990 - 2010) 93
Table 4.17 Projected Population, Housing Need, and Recommended Delivery Levels 94
Table 4.18 Land Requirements for Residential Income Groups in GAMA 1990-2010 94
Table 5.0 Ministerial Responsibilities 103
Table 5.1 Estimated Vehicle Registration 108
Table 5.2 Projected Water Consumption 1990 - 2010 125
Table 5.4 Basic data for the liquid waste management in Accra 133
Table 5.3 Population Affected by Flooding in GAMA 140
Table 5.5 Basic data for the solid waste management in Accra 146
Table 5.6 Demand For Electricity in GAMA 149
Table 5.7 Existing Automatic Exchanges and Services in GAMA 156
Table 5.8 Projected Demand for Telephone and Telex Services 158
Table 5.9 Letter Boxes in Greater Accra Metropolitan Area 160
Table 6.1 Projection Of Enrolment at Primary and Junior Secondary Levels of Basic Education From 1990 - 2000 - GAMA 169
Table 6.2 GAMA School Statistics 1989/1990 170
Table 6.3 Projected Total Public Expenditure in GAMA by Levels/Types of Education (in millions of cedis) 172
Table 6.4 Manpower Employment Projection - GAMA 174
Table 6.5 Actual and Projected Employment by Selected Occupations, 1960, 1984 - 1995 Occupation Actual Projections 175
Table 8.1 Settlements in GAMA Rural Area 219
Table 8.2 Settlement Water Supply 221

LIST OF FIGURES

Fig	1.1	Accra in National Setting	2
	1.2	Study Area	4
Fig	2.1	Topography	9
	2.2	Geology	10
	2.3	Environmental Hazards	16
Fig	4.1.1	GAMA Population Growth Trends 1960-1990	40
	4.1.2	GAMA Population Projections 1990-2010	40
	4.1.3	Proportion of GAMA Population in Total Country 1985-2010	41
	4.2	The Growth of The City	44
	4.3	Conceptual Plan of The Accra-Tema Metropolitan Area	47
	4.4	Existing Landuse	49
	4.5	Landuse In CBD	54
	4.6	Urban Consolidation	66
	4.7	Multi City Structure	67
	4.8	Satellite Towns	69
	4.9	Twin City Structure	70
	4.10	Laisser Faire	72
	4.11	Proposed Structure	73
	4.12	Land Subject to Disputes and Encroachment - 1991	79
	4.13	Housing/Density Zones (Existing)	83
Fig	5.1	Existing MAin Road Network 1990	109
	5.2	Peak Hour Traffic Volumes	110
	5.3	Levels of Services	111
	5.4	Infrastructure Services (Water)	121
	5.6	Existing and Proposed Sanitation System - General Layout	129
	5.7	Flood Prone Areas	138
	5.8	Infrustractural Services (Sanitation)	147
	5.9	Proposed Accra Electricity Network 1992	152
	5.10	Telecommunications Exchange Catchment Areas for Accra	155
	5.11	Infrastructural Services (Telecommunication and Electricity Supply)	157
Fig	6.1	Pyramidal Manpower Structure - Ghana	173
Fig	7.1	Proposed organizational structure for the National Capital Assembly	213
Fig	7.2	Proposed National Capital Commission Structure	215

LIST OF PHOTOGRAPHS

1	ENVIRONMENT	14
2	ECONOMIC ACTIVITY	34
3	ECONOMIC ACTIVITY	35
4	URBAN DEVELOPMENT	50
5	URBAN DEVELOPMENT	51
6	URBAN DEVELOPMENT	52
7	CBD	55
8	CBD	56
9	TEMA TOWNSCAPE	58
10	TEMA TOWNSCAPE	59
11	HOUSING	84
12	HOUSING	85
13	HOUSING	86
14	TRAFFIC AND TRANSPORTATION	105
15	TRAFFIC AND TRANSPORTATION	106
16	TRAFFIC AND TRANSPORTATION	107
17	DRAINAGE	135
18	SOLID WASTE	143
19	EDUCATION	176

Chapter 1

INTRODUCTION

1.1 BACKGROUND

The Republic of Ghana, shares common frontiers with the West African States of Togo, La Cote d'Ivoire and Burkina Faso. The country has an area of 250,000 km^2 much of which drains into the Volta River. Ghana has large areas of fertile land, significant deposits of minerals, precious metals, gemstones and forestry resources. The population is about 15 million. It is diverse in culture, language and religion. Ghana became an independent country in 1957 and was declared a republic in 1960. It is currently governed by the Provisional National Defence Council (PNDC) under the chairmanship of Flt Lt J.J. Rawlings.

Accra is the national capital city of Ghana and is located on the coast 80 km west of the Volta River *(Figure 1.1)*. It became the capital in 1877, when the colonial centre of administration was moved from Cape Coast. Colonial settlement, however, dates back to the early 16th century. Accra is the principal centre of trade, business, communications and administration in the country. The metropolitan area, which includes Tema, and Ga district covers approximately 1520 km^2 of the coastal plain with a population currently estimated at 1.7 million and by the year 2000 it is expected to exceed 2.5 million. The urbanized area is approximately 420 km^2

The first plan of Accra was prepared in 1944, although colonial surveyors ensured a spacious residential environment - except in the indigenous areas. New plans were prepared in 1958 and 1961. These plans provided for a spacious city, with well defined roads and services to a standard in keeping with the expectations of the nation at that time. The plans did not anticipate the rapid increase in population which has over taxed the city's old and poorly maintained infrastructure; and the long period of economic decline and political instability from the late 1960s to early 1980s, have severely eroded public services resulting in housing shortages, inadequate educational and medical facilities, and low investor's confidence and limited supply of capital for investment.

In 1985, the Government of Ghana recognized the need to improve the overall management and coordination of development in Accra. Steps were taken in the first Structural Adjustment Programme to address some of the more serious problems facing the city by executing selective priority infrastructure improvement works and to improve the administrative and revenue collection capacity of the Accra Metropolitan Assembly (AMA). But Government also recognized the need for more effective long-term planning, coordination, and efficient use of resources for development. With assistance from the United Nations Development Programme (UNDP) and UNCHS (Habitat), the Ministry of Local Government set up the Accra Planning and Development Programme to prepare a strategic plan, a development programme, and a management strategy for the metropolitan area.

1.2 NEED FOR A STRATEGIC PLAN

The 1958 master plan provided a sound physical framework for the development of Accra until 1980. Thirty years on, however, many of the proposals contained in that plan have not been implemented. Meanwhile urban development has spread well beyond the boundaries of the plan and much of it is unplanned and without adequate engineering or social services. Even now, most new developments are taking place without consultation among engineering service agencies, private developers, and local government. Long term planning is almost non existent.

The need for more effective planning and coordination of development in Accra has been expressed at numerous fora. However, for planning to be effective, there must be the resources as well as the political will and the institution to plan and implement specific projects and programmes set out in the plan. The 1958 master plan did not achieve its objectives because the necessary resources and the political will to implement

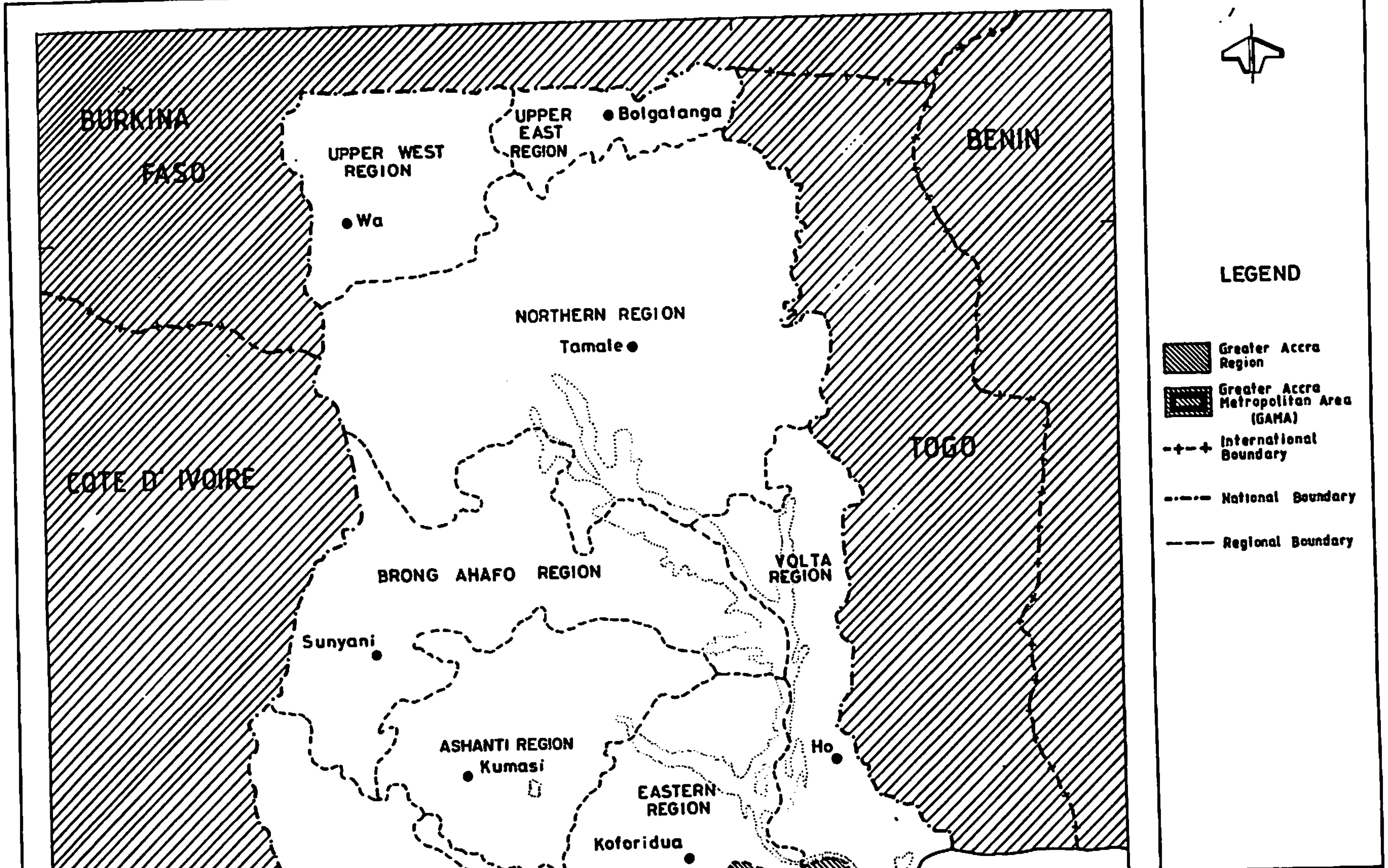

BURKINA FASO
UPPER WEST REGION
Wa
UPPER EAST REGION
Bolgatanga
BENIN
NORTHERN REGION
Tamale
TOGO
COTE D' IVOIRE
BRONG AHAFO REGION
Sunyani
VOLTA REGION
ASHANTI REGION
Kumasi
Ho
EASTERN REGION
Koforidua
WESTERN REGION
CENTRAL REGION
GREATER ACCRA REGION
Accra
Cape Coast
Sekondi
Gulf of Guinea
LEGEND
Greater Accra Region
Greater Accra Metropolitan Area (GAMA)
International Boundary
National Boundary
Regional Boundary

Fig 1.1

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

TITLE
ACCRA IN NATIONAL SETTING

SOURCE
DATE 1991
DRAWING
PLAN N°

it were not there. The plan was neither affordable nor flexible, and orientated primarily to physical development. It was a product of the conventional thinking of the time, but its intentions were worthy.

There is now a need for a more flexible and resource-based plan for Accra. Such a plan, referred to as strategic, has become common throughout the world. A strategic plan differs from the traditional master plan in that greater emphasis is placed on economic and social planning to generate the resources needed to finance the essential hard and soft infrastructural projects outlined in the plan. Such plans have specific objectives, policies and strategies for directing urban development and the delivery of essential public services. A strategic plan also has in-built management systems designed to ensure the plan is reviewed, monitored and re-evaluated at regular intervals so that adjustments can be made for factors which were unforseen or arise at the time of implementation.

The preparation of a strategic plan for the Accra metropolitan area is long overdue - given the problems the city faces with rapid urbanisation, deterioration of the physical infrastructure, and the limited resources available to accommodate them. If the current uncoordinated system of development and the delivery of services are allowed to continue unchanged, then the city will continue to rapidly deteriorate, making it uneconomical to do business in. The strategic plan will provide a vision as well as serve as a guide to the future of Accra. It will also introduce greater flexibility in planning and development and ensure more efficient delivery of public services. It will indicate priority action and the resources needed for sustainable economic development and environmental improvements, providing a basis for rebuilding investor confidence in the city to improve the well being of its present and future residents.

1.3 SCOPE OF THE STRATEGIC PLAN

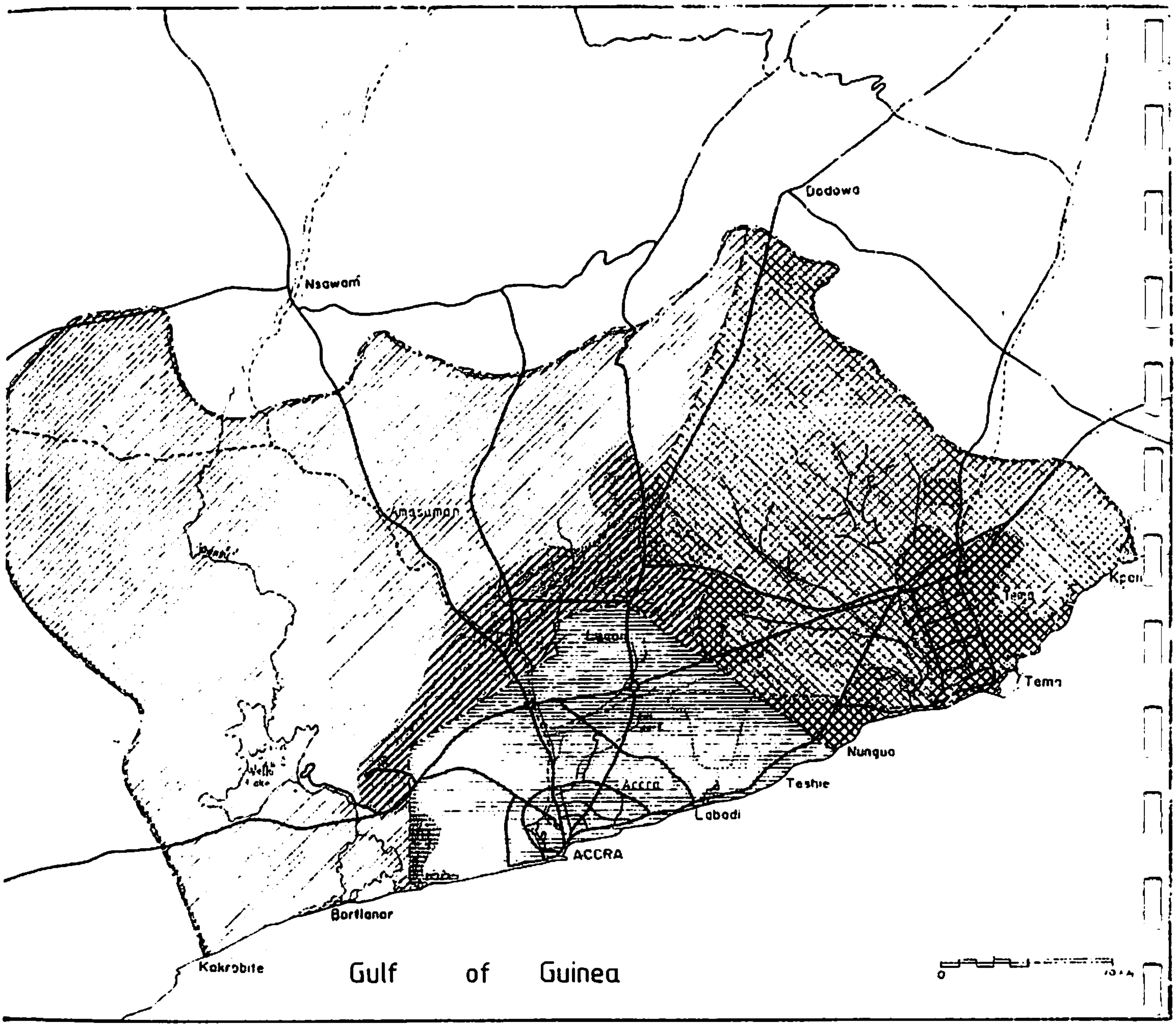
The strategic plan will serve as a basis upon which major decisions and actions affecting development and the delivery of public services in the national capital are made. More specifically it provides the basis for:

- A long-term plan to guide the future physical, social and economic development of the nation's capital city.
- Improving environmental management of existing urban areas.
- Generating sufficient information for research and public policy on matters which affect urban and regional development.
- Coordinating development efforts between central government, local government, service agencies, and the private sector.
- Allocation of resources for urban development, utility and other services according to stated and mutually agreed priorities.
- A framework for monitoring, controlling and adjusting programmes in response to changing circumstances.

1.4 THE PLAN AREA

For planning and administrative purposes the study area of the plan includes Accra Metropolitan Area, Tema Municipal Assembly, and Ga district. This area is referred to as the GREATER ACCRA METROPOLITAN AREA (GAMA). Although the study area consists of three distinct administrative, political and statistical areas, their geographic features, environmental conditions, and cultural and ethnic landscapes are similar.

The plan area is part of Greater Accra Region, and is thus served by the same public service delivery agencies. There is also a strong, interdependent economic relationship among the three areas, with Accra playing dominant economic, financial, social, cultural, political, and administrative roles. Tema is not only a port city, but also the centre of Ghana's heavy industrial establishments, while Ga provides some of GAMA's agricultural


Dodowa
Nsawam
Amasaman
Weija Lake
Lagon
Accra
ACCRA
Labadi
Teshie
Nunguo
Tema
Tema
Kpone
Bortianor
Kokrobite
Gulf of Guinea
0

STUDY AREA

LEGEND

—·—·—	District boundary
▤	Accra district
▨	Ga district
▩	Tema district

Fig 1 2
ACCRA PLANNING AND DEVELOPMENT PROGRAMME [illegible]
AA

produce, outdoor recreational facilities, small scale industrial activities, and a residential space for the rapidly increasing population of Accra.

It is recognised that some land outside these districts may need to be included in the final plan boundary for development within the 20 year life of the plan. The inclusion of these areas in the plan at this time under the existing administrative structure may create administrative difficulties and are left out until matters of metropolitan management are resolved at the highest political level.

/ The first plan of Accra was prepared in 1944. Before then, colonial surveyors ensured a spacious.

1.5 CONTENTS OF THE PLAN

The strategic plan is contained in five volumes:

Volume 1 (this Volume), Planning Context, is a summary of extensive background studies, research, and analysis undertaken in the course of the preparation of the strategic plan. These reports are listed at the end of this volume. It is divided into chapters covering the natural, urban, and rural environments, population, economy, land, housing, transportation, engineering, and social services, and urban management.

Volume II, Strategies, outlines the goals, objectives, policies, and development strategies of the plan. The strategies are grouped under the headings of economic development, urban development, transportation, engineering services, social services, rural development, urban management, and implementation.

Volume III, Five Year Development Plan, focuses on sectoral objectives, strategies, and programmes and projects to be undertaken during the first five years (1993-1997) of the plan. It provides information about projects, including descriptions, costs, executing agencies, durations, and locations.

Volume IV, Annual Action Plan, gives a much more detailed information about sectoral projects that should be undertaken during the first year (1993) of the Five Year Development Plan.

Volume V, Investment Prospectus, is a guide to investors - both local and foreign - on the available investment opportunities in the metropolitan area. It covers large numbers of sub-sectoral activities in all the priority investment areas and the various incentive packages given by the Government of Ghana to investors.

1.6 DEFINITIONS

1.6.1 ABBREVIATIONS

AESC	Architecture and Engineering Services Corporation
APDP	Accra Planning and Development Programme
AMA	Accra Metropolitan Assembly
ATMA	Accra Tema Metropolitan Area (GWSC Definition)
BHC	Bank for Housing and Construction
CBD	Central Business District
DED	District Engineers Department (Tema)
ECG	Electricity Corporation of Ghana
ERP	Economic Recovery Programme
ECOWAS	Economic Community of West African States
FGBS	First Ghana Building Society
FYDP	Five Year Development Plan (1993 - 1997)
GAMA	Greater Accra Metropolitan Area
GAR	Greater Accra Region

GES	Ghana Education Service
GDP	Gross Domestic Product
GPHA	Ghana Ports and Harbours Authority
GREDA	Ghana Real Estate Developers Association
GTB	Ghana Tourist Board
GWSC	Ghana Water and Sewerage Corporation
GHA	Ghana Highway Authority
GIC	Ghana Investment Centre
GAREO	Greater Accra Regional Education Office
GARHA	Greater Accra Regional Health Administration
IRBD	International Bank for Reconstruction and Development
JMPB	Joint Metropolitan Planning Board
MLD	Megalitries per day = 1 million litres
MGD	Million gallons per day
MIST	Ministry of Industry Science and Technology
MTT	Ministry of Trade and Tourism
MFEP	Ministry of Finance and Economic Planning
MOH	Ministry of Health
MLNR	Ministry of Lands and Natural Resources
MLG	Ministry of Local Government
MOE	Ministry of Education
MWH	Ministry of Works and Housing
NGO	Non Governmental Organisation
NDPC	National Development Planning Commission
NEDECO	Netherlands Engineering Consultancy
NTHC	National Trust Holding Company
PAMSCAD	Programme of Action to Mitigate Social Cost of Adjustment
PIP	Public Investment Programme
PNDC	Provisional National Defense Council
PWD	Public Works Department
P&T	Post and Telecommunications
RLS	Roof Loan Scheme
SAP	Structural Adjustment Programme
SIC	State Insurance Corporation
SHC	State Housing Corporation
SCC	State Construction Company
SSNIT	Social Security and National Insurance Trust
TCPD	Town and Country Planning Department
TDC	Tema Development Corporation
TSC	Technical Services Centre
TASIT	Transport and Sanitation Improvement Task Force
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNCHS	United Nations Centre for Human Settlements
VRA	Volta River Authority
WB	World Bank
WHO	World Health Organization
WMD	Waste Management Department

TERMS

Cedis	Currency of the Government of Ghana (1$US = 376 Cedis December 1991)
Strategic Plan -	refers to the plan which sets out the strategies for development of Greater Accra Metropolitan Area.
Structure Plan -	means the plan which set out the proposed physical development in terms of land use,transportation, services, etc. for Greater Accra Metropolitan Area.
Five Year Development Plan -	refers to the plan which sets out all proposed projects and programmes for the period 1993 - 1998.
Investment Prospectus -	is a guide to investors on the available investment opportunities in Greater Accra Metropolitan Area.

Chapter 2

THE ENVIRONMENT

2.1 DESCRIPTION OF THE NATURAL ENVIRONMENT

2.1.1 Geography

The Accra metropolitan area lies within the coastal plain of Ghana 80 Km west of the Volta River. The plain is bounded by the Aplarku and Akwapim Hills which form an escarpment running diagonally north-east from the coast near Bortianor, 10 Km west of Accra. The topography of the plain varies from flat to gently undulating slopes rising to 75 metres near the foothills, with some isolated prominent hills and rock outcrops found in several places. The most notable of these are the Shai Hills to the North-east of Accra near Akuse.

The Greater Accra Metropolitan Area (GAMA) is drained by several rivers and streams, the largest of which is the Densu River which has been dammed at Weija, 10 Km west of Accra. There are 11 drainage basins in the metropolitan area and many of these are flood prone areas especially in the lower reaches and estuaries. Flooding is caused mainly from short intensive rains, which are characteristic of the May-July rainy season.

The coastline of Accra comprises a series of resistant rock outcrops and platforms and sandy beaches near the mouth of the lagoons. The coastline is exposed and because of the close proximity of the continental shelf, a strong coastal current and wind action, it is subject to severe erosion. The lagoon systems are relatively small and flushing has been impeded by siltation or the construction of embankments which have restricted tidal flow. The largest of the Lagoons are Sakumo (Densu delta), Korle (Central Accra) and Sukumo II west of Tema.

2.1.2 Geology and Soils

(a) Geology

The geology of the GAMA consists of Precambrian Dahomeyan schists, granodiorities, granite gneiss and amphibolites to late Precambrian Togo series comprising mainly quartzite, phillites, phyllitones and quartz breccias. Other formations found are the palaeozoic Accraian sediments-sandstone, shales and interbedded sandstone-shale with gypsum lenses.

All units of the Accraian sandstones have major faulting and jointing and are prone to earthquakes. Seismological activity is greatest in the unconsolidated sand and clay deposits around Sakumo, Densu Delta and Nyanyanu, along the Togo series alluvium boundary and in the area underlain by the Accraian rocks. The most geological stable areas are found where the underlying rocks are hard Togo quartzites and schists and hard Dahomeyan schists and gneiss.

(b) Soils

The soils in the metropolitan area can be divided into four main groups: drift materials resulting from deposits by wind blown erosion; alluvial and marine motted clays of comparatively recent origin derived from underlying shales; residual clays and gravels derived from weathered quartzites, gneiss and schist rocks, and lateritic sandy clay soils derived from weathered Accraian sandstone bedrock formations. In many low lying poorly drained areas pockets of alluvial "black cotton" soils are found. These soils have a heavy organic content and expand and contract readily causing major problems with foundations and footings. In some areas lateritic soils are strongly acidic and when saturated are prone to attack concrete foundations causing honeycombing. Near the foothills there are large areas of coalluvial lateritic gravels and sands. Many of these deposits are being exploited in an uncontrolled manner for construction material.

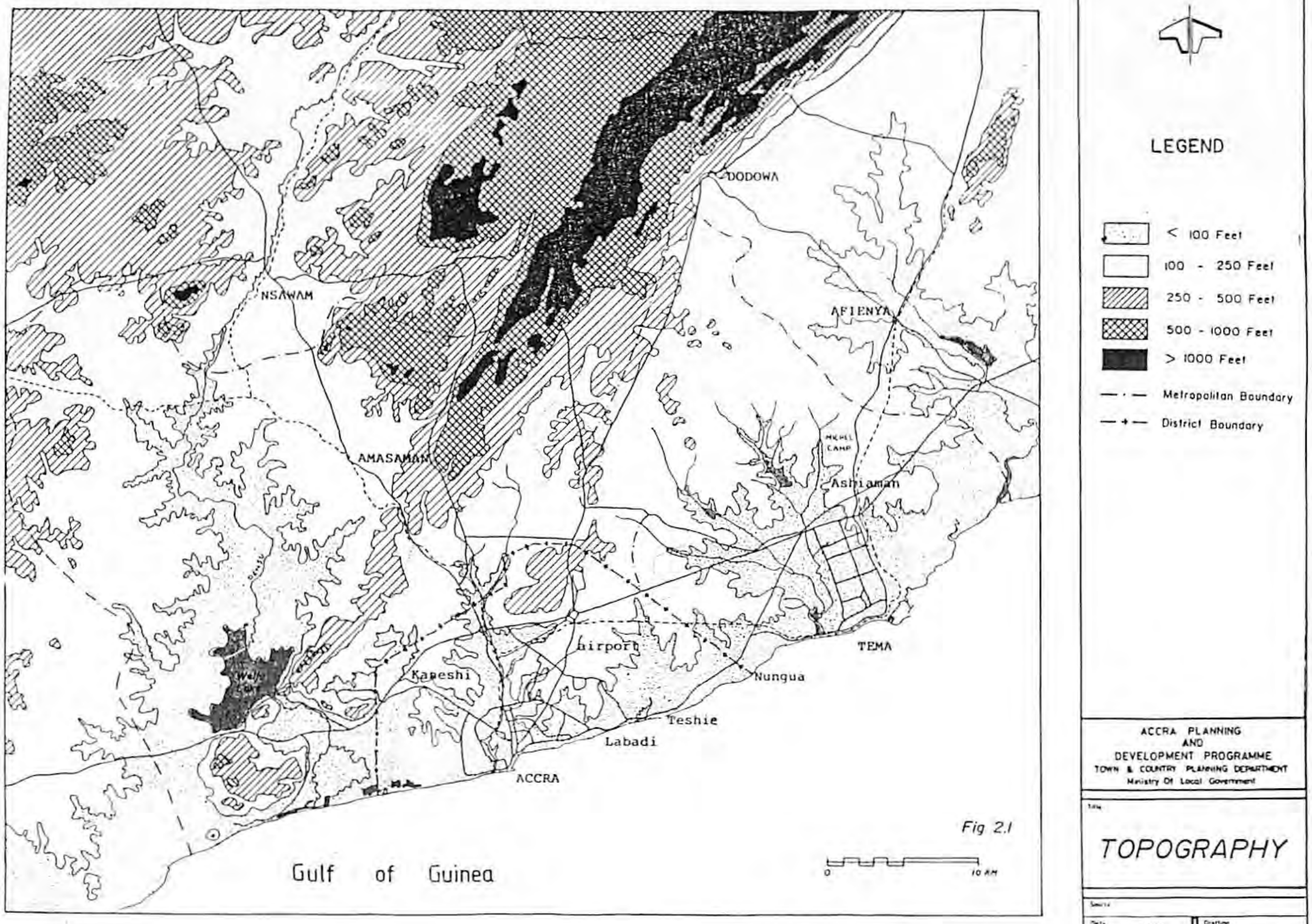

LEGEND
< 100 Feet
100 - 250 Feet
250 - 500 Feet
500 - 1000 Feet
> 1000 Feet
Metropolitan Boundary
District Boundary
DODOWA
NSAWAM
AFIENYA
AMASAMAN
MICHEL CAMP
Ashiaman
TEMA
Airport
Nungua
Kaneshi
Teshie
Labadi
ACCRA
Weija Dam
Gulf of Guinea
0
10 KM

Fig 2.1

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

TOPOGRAPHY

Date 1991

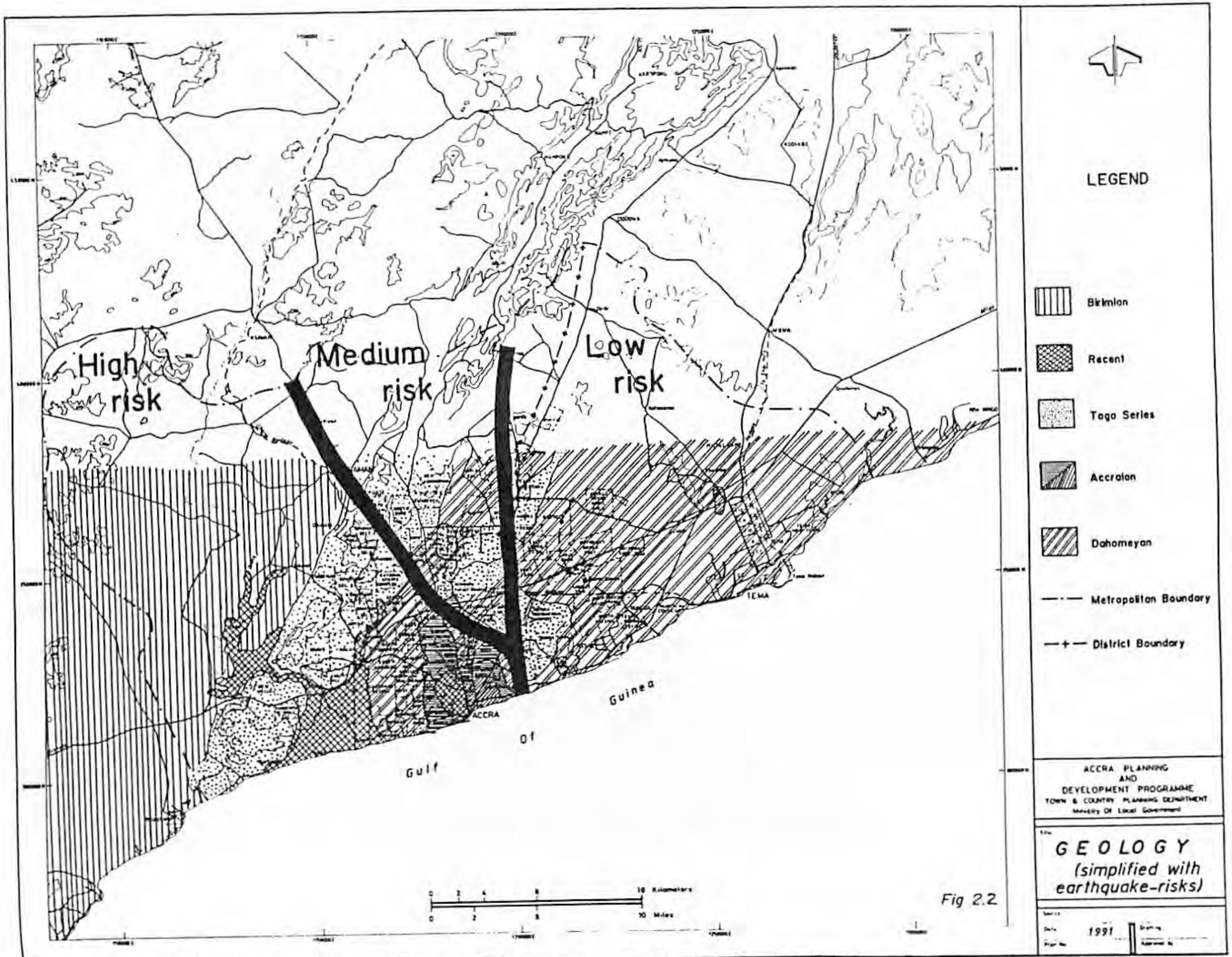

High risk
Medium risk
Low risk
LEGEND
Birimian
Recent
Togo Series
Accraian
Dahomeyan
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles

Fig 2.2

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

GEOLOGY
(simplified with
earthquake-risks)

Date 1991

Sheet, gully and wind erosion are prevalent in the metropolitan area. Sheet erosion occurs mainly on the steeper foothill slopes where the natural vegetation cover has been removed and poor farming practices have been adopted. Gully erosion occurs along all major drainage channels throughout the metropolitan area - especially where there are marked changes in topography. Wind erosion is confined mainly to coastal and dune areas where its combined effect with wave action has been severe. The accelerated erosion which has taken place in all drainage catchments has caused major problems with siltation in low lying areas and compounded the effect of flooding. The situation is likely to deteriorate further as the urban area expands and natural vegetation cover is lost.

Coastal erosion is a serious problem in the metropolitan area. Research indicates that parts of the coastline are retreating at the rate of 0.5 metres per year. Government has spent in excess of 1 billion cedis in the last decade to protect parts of the coastline and in most cases these measures will be short term. On coastal beaches bad landuse practices such as the cutting down of coconut trees, removal of beach sand and urbanization have accelerated this natural process.

(c) Building Resource Materials

Several sites in the metropolitan area have or are being used for quarry stones, clay, sand, gravel and ornamental stone. Mallam and Shai Hills were used for winning rock for major construction projects such as the Weija, Kpong and Akosombo dams and Tema Port. There are several other suitable sites where rock for construction can be quarried easily in the Greater Accra Metropolitan Area - especially in the hills west of Amasaman. The resources of light construction materials such as sand and fine gravels are limited and sporadically located. Considerable damage has been done to the environment where these material have been excavated. Most fine gravel and sand will have to be drawn from areas north or east of Accra in future or alternatively crushed from rock at the quarry sites. Clay deposits are limited and sporadically located. Laterite deposits for use in road construction and as local building materials are abundant but current extraction practices are having a destructive effect on the environment.

2.1.3 Climate

Accra lies in the coastal Savannah zone. There are two rainy seasons. The average annual rainfall is about 730 mm which falls primarily during the two rainy seasons. The first begins in May and ends in mid-July. The second season begins in mid-August and ends in October. Rain usually falls in intensive short storms and gives rise to local flooding where drainage channels are obstructed.

There is very little variation in temperature throughout the year. The mean monthly temperatures range from 24.7°c in August to 28°c in March with annual average of 26.8°c. As the area is close to the equator, the daylight hours are practically uniform during the year. Relative humidity is generally high varying from 65% in the mid- afternoon to 95% at night.

The predominant wind direction in Accra is from the WSW to WNW sectors. Wind speeds normally range between 8 to 16 Km/hr. High wind gusts occur with thunder storm activity which pass in squalls along the coast. The maximum wind speed record in Accra is 107.4 km/hr (58 knots). Strong winds associated with thunder storm activity often cause damage to property by removing roofing material.

Several areas of Accra experience micro climatic effects. Low profile drainage basins with a north- south orientation are not as well ventilated as those orientated east west. Air is often trapped in pockets and an insulation effect gives rise to a local increase in air temperature of several degrees. This occurs in the Madina, Accra New Town, Sports Complex areas. Such areas are also prone to higher pollution levels. Along the Akwapim Hills the wind velocity increases and this gives rise to slightly cooler temperatures along the foothill slopes.

2.1.4 Vegetation

(a) Terrestrial Vegetation

There is evidence to suggest the vegetation of the metropolitan area has been altered in the more recent past century by climatic and other factors. Much of the metropolitan area was believed to have been covered by dense forest of which only a few remnant trees survive. A climatic change combined with the gradient of the plains and cultivation has imposed vegetational structures similar to those of the southern shale, Sudan and Guinea Savannas all of which lie north of the Accra plains.

There are three broad vegetation zones in the metropolitan area which comprise shrub land, grassland and coastal lands. Only the shrub land occurs more commonly in the western outskirts and in the north towards the Aburi hills. It consists of dense clusters of small trees and shrubs which grow to an average height of five metres. The grasses are a mixture of species found in the undergrowth of forests. They are short, and rarely grow beyond one metre. Ground herbs are found on the edge of the scrub. They include species which normally flourish after fire.

The coastal zone comprises two vegetation types, wetlands and dunes. The coastal wetland zone is highly productive and an important habitat for marine and terrestrial - mainly birdlife. Mangroves, comprising two dominant species, are found in the tidal zone of all estuaries and lagoons. Salt tolerant grass species cover substantial low lying areas surrounding the lagoons. These grassland have an important primary production role in providing nutrients for prawns and juvenile fish in the lagoon systems. Protection of the coastal wetland zone is very important to the long term sustainability of the fishing industry which the Ga population of Accra depend upon.

The dune lands have been formed by a combination of wave action and wind. They are most unstable bu stretch back several hundred metres in places. There are several shrub and grassland species which grow and play an important role in stabilizing dunes. Coconuts and palms grow well in this zone, providing protection and an economic crop. Most of the coconuts were planted in the 1920's but it is estimated that over 80% of those plantations have disappeared as a result of felling, disease and coastal erosion. The los of these trees is one of the principal reasons for the severity of erosion in some areas.

In addition to the natural vegetation zones, a number of introduced trees and shrubs thrive in the metropolita area. Neems, mangoes, cassias and avocados and palms are prominent trees on the Accra landscape Introduced shrubs like bouganvillia are also very prominent. Achimota Forest and Dechidaw Forest nea Afienya north of Tema, are the only forest reserves in the GAMA. These are being damaged from residential encroachment, bush fire, sand collection and illegal tree harvesting.

Most of the open spaces in Accra are used for the cultivation of food crops like corn, okro, tomatoes and other vegetables. Fertilizers and insecticides are used in these areas. Constant felling of the trees, bad farmin practices and annual burning has altered the vegetation from "dry forest" and greatly depleted the fertility the soil.

(b) Aquatic Vegetation

Apart from mangroves and salt marsh grasses which grow in the intertidal zone, sea grasses or attached algae also occur mainly in rocky areas and wave cut platforms. These areas have increased as a result of erosion exposing the underlying bedrock - especially to the east of Tema. They have an important role in t coastal ecosystem because of their high rate of primary production in the provision of food and shelter f the survival of shrimps, prawns and many species of fin fishes. Ocean floor sea grasses are confined to a few sheltered areas of the coast line and the lagoons. The ocean floor regime is too unstable to support lar areas of seagrass.

2.1.5 Fauna

(a) Terrestrial Fauna

Different species of antelopes, squirrels, monkeys and reptiles live in Accra. Many animals such as the Togo hare, grasscutter, bush baby and bossman potto are found in Achimota forest and outside the urbanized area. Most animals have been pushed inland because of the rapid expansion of settlements in the metropolitan area. Many species of snakes (some venomous) and lizards are found throughout the metropolitan area. Apart from the above mentioned fauna a great number of domestic animals - donkey, sheep, goat, chicken are kept domestically in the metropolitan area.

To the north east of Accra on the Akosombo Road lie the Shai Hills. There is a small game park covering several of these isolated hills. Several species of monkeys, ground foraging animals and birds inhabit this area. The Akwapim Hills also provide sheltered habitats for many bird and animal species. The two areas are sparsely populated and generally unsuitable for agriculture use. The long term prospects of species protection in the Akwapim and Shai Hills is good.

Metropolitan bird life is diverse and in spacious residential areas prolific. The many exotic trees planted in the inner city areas provide a suitable habitat for food and shelter, and the lack of predator species have enabled numbers to grow. Over 120 indigenous, migratory and exotic bird species have been counted in the metropolitan area. Wetland species occur mainly in the Densu delta and Sakumo I & II lagoons. Sakumo II lagoon hosts 10 species of birds of international importance and an equal number of national importance. These lagoons are important wild bird and fish breeding habitats of international significance and are intended to be designated as Ramsar sites under the Ramsar Convention to which Ghana is a signatory.

(b) Aquatic Fauna

The open lagoon systems support a wide range of crustacean, mollusks, gastropods, predatory and bottom feeding fish. The lagoons are important breeding grounds giving adequate protection against larger predator species and a continual supply of nutrients and organisms for food. The habitat of many of the lagoons is or has been modified by development and increasing levels of pollution. Some species in the lagoons - in particular Korle lagoon - are no longer suitable for human consumption. Protection of the water quality and vegetation in the lagoons is important to the long term sustainability of aquatic fauna along the coastline.

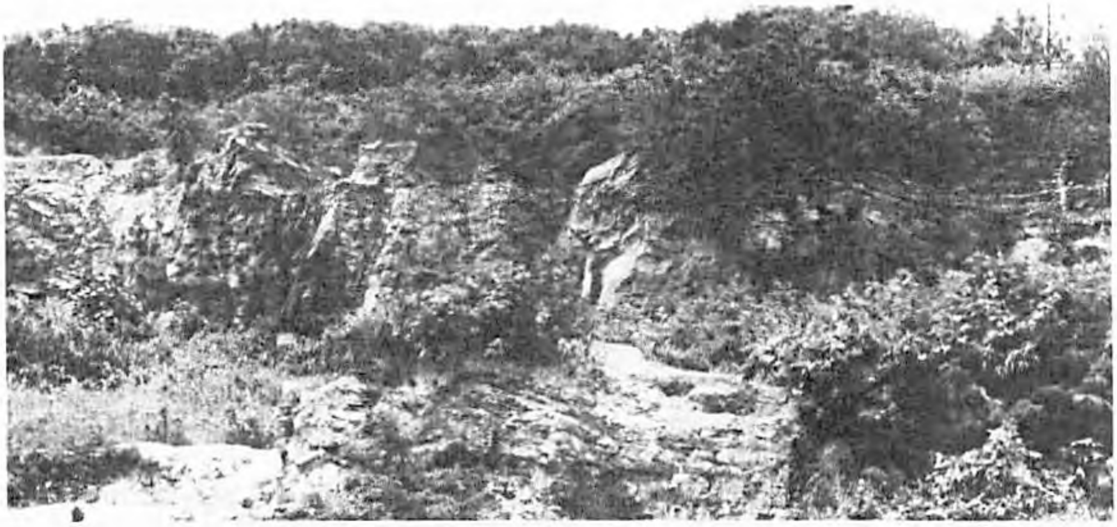
The ocean supports a wide range of pelagic and bottom feeding fish. Common species are grouper, mackerel, cassava fish, African lookdown, sole, shark and trigger fish. Stocks of off shore species have not been depleted mainly because fishing techniques result in a significant loss of smaller fish from nets. Evidence suggests that on-shore species are nearing exhaustion caused by excessive catches of juvenile and small fish. The loss of this resource will have a substantial impact on the indigenous population of Accra whose livelihood is dependent on fishing.

Weija reservoir, the marshes at the mouth of the Densu River, the Sukumo lagoon near the Panbros salt industry constitute the most important fresh water wetlands for aquatic fauna. Apart from harboring a variety of important commercial fish species like tilapia and catfish, they also act as breeding grounds for animals which are adapted to the characteristic coastal Savannah vegetation.

2.1.6 Water Quality

Analysis of surface water run off in the metropolitan area indicates that except for the lower Odaw River and Tema Stream catchments, water quality is satisfactory. Ground water tests show most trace elements in the form of lead, cadmium, zinc, manganese and cromium exceed WHO limits. Water pollution is most acute in the Odaw River, Korle and Chemu lagoons which collect substantial quantities of organic (sewerage) and industrial wastes. Water quality in other lagoons is still satisfactory although there is evidence of deterioration.

COASTAL EROSION AT TEMA



STONE QUARRYING AT ACHIMOTA

POLLUTED KORLE LAGOON

ENVIRONMENT

2.1.7 Air Quality

With the exception of the industrial area along the Odaw River and Tema, air quality in the metropolitan area is good. Minor incidents of localised pollution from automobile fumes arise during certain climatic conditions but these are insignificant compared to those registered in some developed countries. During the months of December to February, the effects of the Harmatan (fine wind blown dust from the Sahara region) causes loss of visibility and some health problems. These are seldom prolonged. Odour levels arising from decomposing rubbish and sanitary wastes are high in inner city areas, especially, along the drainage system and in the region of the night soil dump at Korle Gonno.

2.1.8 Noise Pollution

Noise pollution is a problem at the southern end of the airport in the Cantonments areas. The main take off flight path passes directly over this residential area. Aircraft noise levels exceed internationally accepted standards over residential areas. There is little that can be done to abate aircraft noise in this area which will become more intense as aircraft movements increase. Quarrying operations - especially at Malam give rise to shock waves and vibration. All quarrying activities involving blasting will ultimately have to be excluded from urbanized areas.

2.2 ENVIRONMENTAL CONSTRAINTS

There are very few physical features, other than the Akwapim Hills, isolated rock outcrops and the coastline which constrain the development of Accra. However, there are other environmental factors which, if not considered carefully in the planning process for development, are likely to impact adversely upon the city and its economic and social well being.

Flooding, earthquakes, coastal storms and high winds are all natural hazards which constrain the location and form of development within the metropolitan area. In this respect new urban development below the 1 in 50-year predicted flood level is undesirable - likewise development within 100 metres of the coast line. Development and major infrastructure on or along earthquake fault lines should be avoided. Areas of land subject to impeded drainage and unstable soil conditions are a major constraint upon development. Figure 2.1 shows the environmental constraints in the metropolitan area.

The lagoons systems are important habitats for bird and marine life. Intensive urban development in close proximity to these areas results in higher levels of pollution, which in turn, will result in the loss of an economic resource. Protection of sensitive ecological habitats imposes constraints on land use, - especially, intensive urban development.

Similarly, freshwater systems constitute the source of water for domestic, industrial and agricultural activities in the GAMA. Wastes from these activities may limit the use of the water sources as a result of contamination by organic and chemical pollution.

Some manufacturing industries produce gaseous and wind-borne particle by-products and odours which are hazardous to human life. The siting of noxious and hazardous industry imposes constraints on both the natural and manmade environment by increasing soil and plant toxicity levels. Special consideration must be given to the predominant wind direction in siting hazardous industries, and adequate buffers provided which exclude intensive man related activities. This particularly applies to future land use east of the Tema industrial area. Various environmental hazards in the metropolitan area are shown in Figure 2.1.

The mineral deposits of the metropolitan area play an important role in the economic growth of the area. Since the potential value of quarry stone, clay, sand and gravel deposits as an aggregate resource depends upon the accessibility of the deposit and the distance of the deposit from the point of use, the deposits within a reasonable distance from developed areas are the most useful. Such areas should not be encroached upon.

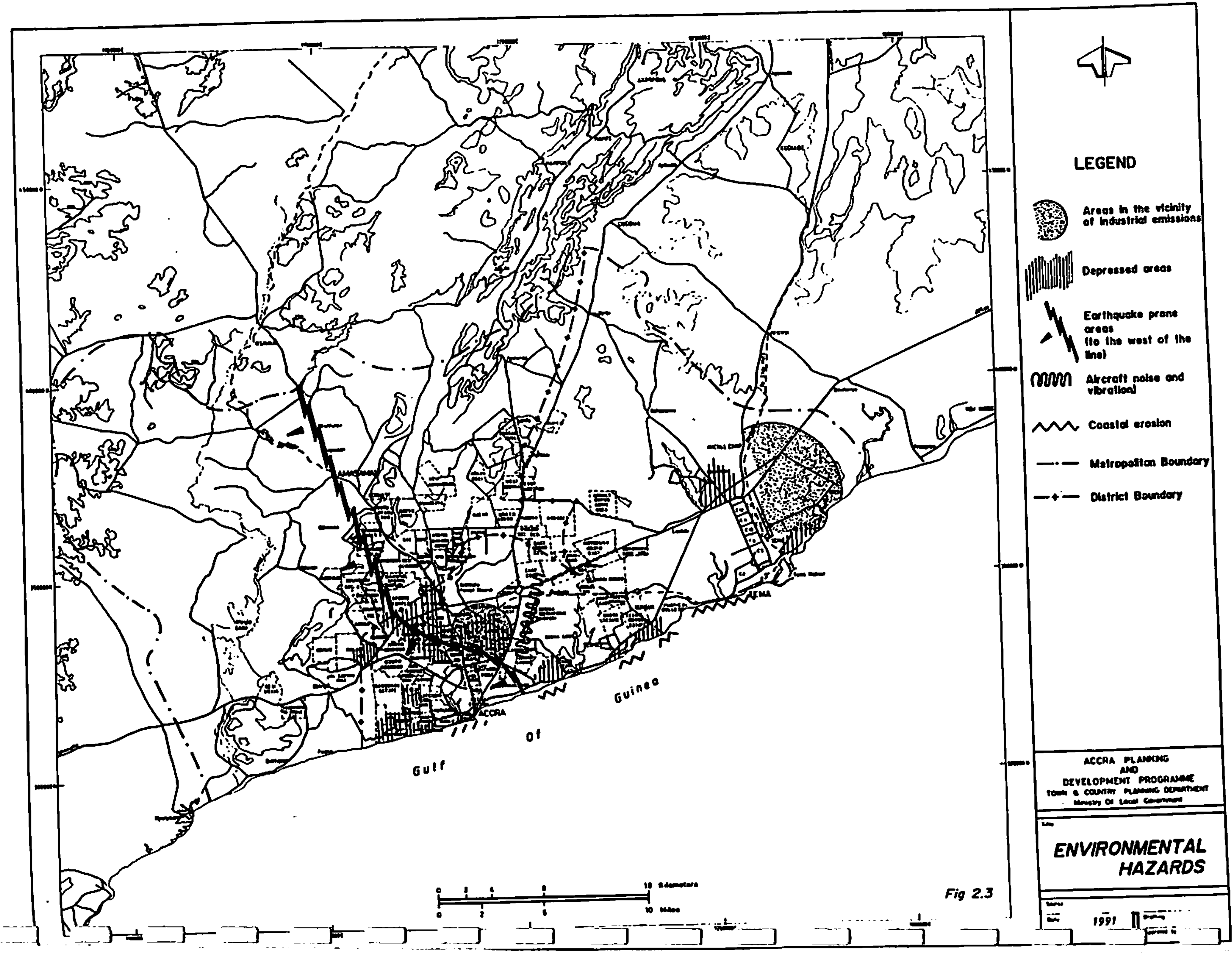

LEGEND
Areas in the vicinity of industrial emissions
Depressed areas
Earthquake prone areas (to the west of the line)
Aircraft noise and vibration)
Coastal erosion
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf Of Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles
1991

Fig 2.3

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

ENVIRONMENTAL HAZARDS

Urbanization places considerable pressure on the resources of the natural environment at the urban fringes and the hinterland. The cutting of trees, soil erosion, quarrying for sand and stones etc result in the degradation of the environment and leads to greatly increased construction and rehabilitation costs later.

2.3 OPPORTUNITIES FOR ENVIRONMENTAL IMPROVEMENT

The past urban development practices have been extremely damaging to the natural and urban environments. Because of the continuing concentration of population, industrial activities, congestion, human and untreated industrial waste and effluent, further degradation of the natural environment is inevitable. There are simply not enough funds and resources to reverse this process in the short term. Nevertheless, much can be done to mitigate some of the worst effects of urbanization and to restore severely polluted areas to more acceptable quality levels.

There are a number of measures which can be taken to improve water quality in the metropolitan area. The widening of the entrances to the Korle and Sukumo II (near Tema) lagoons will improve tidal flushing and enhance water quality. Civil works will enable more polluted wastes to be channelled around the heavily urbanized lagoons to discharge at the estuaries. This will avoid large concentrated amounts of organic matter being discharged into the confined lagoons and will bring about the long term enhancement of water quality. Dredging and clearing of the estuaries will lead to improved flushing and storm water discharge.

Flooding is a serious problem in low lying areas. Measures can be taken to create flood retention basins in areas as yet not urbanized. Such basins also have the advantage of creating silt traps and help to reduce the rate of down stream siltation and flooding. In the short term flood retention basins provide water for crop irrigation. Improvements to local drainage systems by community initiated projects will reduce constricted flood flows which give rise to local flooding.

The coastline is one of the most neglected parts of the metropolitan area and much of it is used as a receptacle for disposal of waste. Opportunities to enhance and protect this environment, through the establishment of a coastal erosion zone free of development, tree planting and improve waste disposal exist. Coastline restoration will also generate significant leisure and recreational opportunities.

Environmental education is a priority for improving the public awareness to protect, maintain and, where possible, restore the natural environment. Ignorance is the main cause of environmental degradation and this can only be counteracted by creating an awareness for improved environmental management practices by individuals and the benefit this has on individual communities.

While planning has the potential to improve environmental conditions, it will be ineffective unless it is relevant and beneficial to the community it serves. In this respect, environmental planning and management must recognise the potential of local communities to prepare and implement plans using local resources, backed and guided by technical support.

Chapter 3

ECONOMIC DEVELOPMENT

3.1 ECONOMIC DEVELOPMENT OF GAMA

The study of GAMA's economy helps to provide: (a) information about the local economy that will assist government officials and planners in arriving at a series of goals and objectives; and (b) quantitative estimates of future employment and population. Quantitative employment and population forecasts are intended to serve as an overall guide to the formulation of land use plans, transportation, open spaces, schools, hospitals, and other facilities.

With roots in physical planning programmes of public housing and urban renewal, social welfare planning has emerged as an independent concept at the city level. In GAMA social welfare activity shows in a number of voluntary associations as well as in the Department of Social Welfare of the Ministry of Mobilization and Social Welfare. Welfare in its broadest sense is one of the general objectives of economic planning. More specifically, economic planning is aimed at many of the key problems associated with what is directly implied by social welfare in GAMA. These key problems include employment opportunity, assistance to a variety of welfare programs such as juvenile delinquency, abandoned children, rehabilitation, etc.

Increased industrialization, improvements in transportation and communications, mechanization of agriculture, and the increased importance of agglomeration economies have contributed to the present size and shape of GAMA. These changes have in effect made GAMA's economy both regional and national. Its immediate influence extends far beyond the administrative borders of Accra, Tema, and Ga, or even the borders of Greater Accra Region.

Since economic activity in GAMA (urban or regional sense) is affected by other centres or regions (especially where GAMA's industries derive their raw materials) and is ultimately linked to the national economy, GAMA's economy must be examined in terms of its linkage with the national economy. That is, the present and future economic positions of GAMA are dependent on what share of the national total of goods and services it produces, and on its capacity to expand existing productive activities and to develop new productive resources relative to the capacity of other urban centres, locally and internationally, capable of engaging in similar activities.

As in most urban areas of developing countries, the economy of GAMA is made up of two sectors: the forma and the informal sectors, both of which have been separately discussed and analysed.

3.2 THE STATE OF THE ECONOMY

In order to understand the present state of the economy of GAMA, it is important to look at some of the recent developments in the national economy of Ghana. These developments have had immediate and long term impacts on the performance of the economy of GAMA.

3.2.1 The National Economy

In 1983, the Government introduced an Economic Recovery Programme (ERP) in an effort to redress the deteriorating economic conditions of the country. The ERP's policy package was aimed at removing th serious cost/price distortions prevailing in the economy and realigning relative prices in favour of productiv sectors. The result has been a dramatic turn around of the economy with most of the key economic indicators showing positive growth trends. Inflation and high interest rates have, however, remained unacceptably high, seriously affecting investment in manufacturing.

Gross Domestic Product (GDP) is projected to increase at around 5.0% per annum through to the year 2000, with 2.0% per capita growth over the same period. Agricultural contribution to GDP is expected to increase by an average of 2.4% per annum through to 1995 *(See Table 3.1 below)*. The actual growth rate until the end of 1990 was 1.9% per annum, due to the negative growth rate (-2.4%) in 1990. Employment will also decrease from 3,799,802 in 1990 to 3,475,000 in 1995. Industry, which in 1990 represented about 14.1% of GDP, will be the fastest growing sector, growing at the annual rate of nearly 9% through 1995. There will be 2,234,417 jobs in industry (87% in manufacturing) in 1995, an increase of 67% over the number in industrial employment in 1990. The service sector's contribution to GDP in 1990 was about 42.5% decreasing to 39% in 1995. However, it is expected to grow at a rate of 6.2% till 1995. The number of people working in the service sector will increase from 2,378,324 in 1990 to 3,044,658 in 1995, an increase of 28%.

Table 3.1 Actual and Projected Sectoral Economic Conditions for Ghana

	GROWTH RATES			GDP DISTRIBUTION			EMPLOYMENT*		
Year	AGR	IND	SER	AGR	IND	SER	AGR	IND	SER
1985	0.6	17.7	7.5	50.3	12.7	37.0	3,330	1845	1,571
1986	3.3	7.5	6.5	49.5	13.0	37.6	3,441	926	1,695
1987	0.0	11.5	9.4	47.1	13.8	39.1	3,441	1,024	1,934
1988	3.6	7.3	7.8	46.1	14.0	39.9	3,572	1,116	2,108
1989	4.2	4.2	5.8	45.9	13.9	40.2	3,714	1,214	2,247
1990	-2.4	4.0	8.8	43.4	14.1	42.5	3,800	1,337	2,511
1991	2.4	5.4	5.2	43.7	16.6	39.7	3,549	1,471	2,511
1992	3.3	9.8	4.5	43.0	17.4	39.6	3,539	1,617	2,648
1993	2.6	10.8	4.2	42.2	18.4	39.4	3,521	1,802	7,774
1994	3.0	10.4	4.2	41.4	19.4	39.2	3,503	2,007	2,906
1995	3.4	10.3	4.2	40.8	20.4	38.9	3,475	2,234	3,045

Source: Ghana: Structural Adjustment for Growth, World Bank, 1990
** in thousands of jobs*

3.2.2 Prices and Wages

Inflation in Ghana, as measured by the annual average change in consumer price index (CPI), fell from 31.4 % in 1988 to 25.2 % in 1989 and rose to 37.3 % in 1990. In Accra, it rose sharply to 41.4 % in 1990 after falling from 31.2 % in 1988 to 27.8 % in 1989. The largest rises in inflation were in food, furniture and furnishings and transport and communications where they were over 20 percentage points higher than the 1989 inflation rates. The increases reflect the national trend where food prices increased by 40 %, a result of lower production of root crops and increased transport costs. Petroleum prices rose by a cumulative 266-326 %, reflecting the pass through of higher international prices, as well as increases in excise taxes. The average per capita earnings in 1986 was 7433 cedis per month (7333 and 7956 cedis for the public and private sectors respectively). If this is projected at the same growth rate of inflation, the average growth per capita earning for 1991 will be 23,400 cedis per month. Earnings have actually lagged far behind the inflation rates.

3.2.3 The National Public Investment Programme

The National Public Investment Programme (PIP) reflects the need for more investment in infrastructure, over 30% of which was allocated for GAMA in 1990. Out of the total 20.7 billion cedis, about 90% of the budget was for Accra District. The decrease in investment in the productive sector (industry, agriculture, land, and natural resources) from 22% to 14% of the total investment budget indicates Government's policy of privatisation of the industrial sector. The high investment in the social sector (25%) was the result of heavy concentration of social service delivery systems in GAMA.

3.2.4 Savings and Investment

Although investment in Ghana is estimated to have increased from 11% of GDP in 1988 to 16% in 1990, the share of resources allocated to investment is still low. The 5% GDP growth projection will require that gross investment rises to 19.5% in 1993. The bulk of this investment is expected to come from private investment which is projected to rise from 8.6% of GDP in 1990 to 10.0% in 1993. In contrast, public investment is projected to grow to 8.9% of GDP in 1993, up from 7.4% in 1990.

Private investment is increasing while that of the public sector is decreasing. National savings stagnated at about 8% of GDP in 1990. Public savings have declined from a peak of 3% of GDP in 1987 to less than 2% of GDP in 1990, mainly due to the impact of lower international prices and higher producer prices for cocoa on Government's tax revenue. On the other hand, private savings have increased as per capita incomes have risen. This trend slowed in 1990 because of lower economic growth.

3.2.5 Taxes

In order to safeguard real incomes in the face of high inflation, the personal income tax schedule was changed in early 1991 to raise the minimum exemption, widen brackets, and to lower the top marginal rate from 55% to 25%. In addition, most major allowances, previously untaxed, were consolidated into taxable basic wages. The combination of both measures is expected to be revenue neutral with respect to personal income taxes.

3.2.6 Household Expenditure

The average household expenditure on food and non-food items in 1990 was 307,615 cedis per annum, and ranged from a low of 175,790 cedis for the households in the poorest 20% of the population to a high of 379,322 cedis for those in the wealthiest group of the population. Nationally, as much as 66% of all expenditure was on food, the proportion being the highest for households in the first expenditure quintile (69.8%) and lowest for those in the fifth (richest) expenditure quintile level (61.8%). The average household in Accra spends 56.6% of its income on food and 42.9% on non food purchases; but in other urban areas the corresponding rates are 49.8% and 38.8% respectively *(Table 3.2)*.

Table 3.2 Distribution of Average Household Expenditure By Locality and Type (Percent)

TYPE OF EXPENDITURE	ACCRA	OTHER URBAN	RURAL	COUNTRY
Food Purchased	56.6	49.9	35.0	42.4
Home-Produced Food	0.5	11.4	36.5	24.0
Non-Food	42.9	38.8	28.5	33.6
Total	100.0	100.0	100.0	100.0

Source: Quarterly Digest of Statistics, March 1990

3.2.7 The Economy of GAMA

The Greater Accra Metropolitan Area (GAMA) with a total population of 1.7 million in 1990, representing only 11 % of the population and occupying 1520 square kilometers or 0.6% of the total land area of Ghana, has easily the most diversified economy in the entire country, contributing 15-20 % of the GDP. GAMA accounts for 10 % of the total employment in Ghana with 540,000 persons working in all of the three sectors of the economy. The metropolitan area controls almost 18 per cent of the total employment in manufacturing industry in Ghana, 31 % in the construction industry, 22 % in the wholesale and retail trade, 30 % in transportation, storage, and communication, and 56 % in finance, insurance,and real estate.

Within GAMA itself, the largest single employer in 1984 was the wholesale and retail trade subsector, accounting for 171,000 people, or 32% of the total employment in the GAMA region. Community and social services employed 122,000 people (23%), manufacturing 104,000 persons (19%), and agriculture accounted for nearly 62,000 people (11%). Women comprised 49% of the labour force, concentrating primarily in the service sector, especially wholesale and trade.

Unemployment was 8 % (3% for Ga and 9 % each for Accra and Tema) of which 55% were men. GAMA had a very young population with 41.5% under the age of 15 in 1990.

3.3 AGRICULTURE

The smallest of the three sectors, agriculture employs nearly 62,000 persons or 11% of the labour force of GAMA, compared with 61% of that of the nation. Fishing is the largest subsectoral activity, employing about one-third of the agricultural labour force. Other activities include horticulture (which provides raw materials for a small but growing group of agro industries), poultry, hunting, forestry and logging.

3.3.1 Fishing

The fishing industry is the most important subsectoral activity where 10% of the catch is exported, the rest is nationally consumed. The main types of fish range from red fish, red bullet, herrings to sardines, tuna, yellow fish, and grouper. There are also significant quantities of shrimps, lobsters, and sole. The industry is characterized by extreme seasonability (June-September) especially in the case of herring and sardines. As a result of lack of cold storage facilities, prices tend to drop during the peak fishing season, resulting in under-exploitation of the fishing resources.

The bulk of the marine catch during the season is by the small canoe fishermen who have little or no link with credit institutions to support the expansion of their businesses. Their operation takes place close to the shore throughout the year, and there is a clear indication of depletion in the near future unless strict control measures are taken. There is a strong modern fishing subsector located in the Tema fishing harbour, the bulk of which is owned by private companies and one state fishing corporation. Inland fishing in GAMA is under developed in the irrigation dams of Weija, Ashiaman, Dawhenya, and in the lagoons and rivers of the area.

3.3.2 Livestock

The bulk of commercial poultry farming in Ghana is located in GAMA. Poultry production is constrained by high cost of feed. The GAMA area also has a number of domestic animals such as sheep and goats which depend on the natural vegetation for feed. In addition to a few large scale cattle farms, the bulk of cattle raising in GAMA is by small livestock farmers. There are a few commercial farms raising pigs both for direct consumption locally or for further processing into ham, bacon, etc. However large quantities of meat and various dairy products are imported from neighbouring countries and abroad to supplement local production.

3.3.3 Crops

Horticulture is the second largest agricultural activity outside the fishing industry. This is practised mostly by families, often without the benefits of modern methods of production. Apart from the variety of vegetables grown within Accra and Tema such as okro, garden eggs, tomatoes, carrots, cucumber, cabbage, cauliflower, lettuce, etc., rural GAMA produces a large amount of red pepper and pineapples which are beginning to enter the non-traditional export market. The expansion of production of these fresh fruit and vegetable for export is hampered by the lack of adequate cold storage and warehousing facilities in the metropolitan area. There is therefore the need to emphasize the development of on-farm and local wholesale storage facilities if GAMA is to take advantage of its location as the gateway to the outside world to enter the international markets with these fresh crops.

GAMA is drained by several rivers, six principal drainage basins and eleven flood prone areas. The irrigation strategy would focus on the development of small schemes and make optimum use of existing irrigation facilities. Because the return on investment in agriculture, in the form of research and extension services and feeder roads, is likely to be very favourable, such activities should hold a high priority in the allocation of public resources.

3.4 INDUSTRY

3.4.1 Structure of the Industrial Sector

GAMA is the most industrialized area in Ghana, contributing over 10 % to the GDP. Over 50 % of the manufacturing activities, representing over 60 % of value added, are located in the area. There were in 1984 about 2700 industrial units out of which only 20 employed over 500 persons, 39 had between 200 and 499 employees, and another 39 with 100-199 employees. Seventy five percent (75%) of the jobs were in small scale industries, while 91 % of the industries employed 30 persons or less (30 is the upper limit for small scale industries).

3.4.2 Manufacturing

Manufacturing which presently comprises ten subsectors represented in 1984 about 85 % of the industrial activities. Nationally, it is expected to maintain an aggregate annual growth rate of between 9 and 10 % by 1990. It has the potential to contribute to future economic development. Manufacturing in GAMA faces two central problems of resource unavailability and distorted policy environment. These are manifested in two key characteristics of the industry: (1) it is overextended: its foreign exchange requirements are very high; full capacity production exceeds the domestic market in some subsectors, notably textiles; processing capacity often exceeds the availability of local raw materials; and direct public sector holdings exceed what it can manage effectively and profitably, and (2) efficiency varies widely.

3.4.3 Industrial Employment

In 1984, there were nearly 134,000 persons working in various industries, this represented 25% of the total employment of GAMA and over 90% of the industrial jobs in the Greater Accra Region (GAR). Manufacturing employed about 104,000 or nearly 80% of the industrial employment (Table 3.3). GAMA therefore accounted easily for about 18% of total employment in the manufacturing sector in Ghana. Female employment in manufacturing was over 53 %, the majority of whom were self employed, particularly in the service sector. Construction, the second largest industrial employer, has a brighter future in the reconstruction of GAMA.

Table 3.3 Industrial Sector Employment

SUBSECTOR	GA	ACCRA	TEMA	TOTAL
Manufacturing	7,503	75,431	20,630	103,584
Gas, Water	367	3,185	643	4,195
Electricity	71	1,774	366	2,211
Water Works & Supply	296	1,411	277	1,984
Construction	1,581	16,694	1,834	20,109
Mining & Quarrying	412	1,000	75	1,487
Total	10,230	99,495	23,825	133,550

Source: GAR Demographic and Economic Characteristics, 1984 GSS

3.4.4 Developing GAMA's Manufacturing Capacity

The potential for developing the manufacturing industry in GAMA can be assessed from the supply and demand sides, both of which involve national resources on the basis of which they were established. On the supply side, Ghana is endowed with natural resources (agricultural land, forest resources, mineral resources) and human capital that, if efficiently exploited, can provide a strong base for GAMA's manufacturing sector. These include:

(a) Agro-Industries

The country has agricultural land that is potentially capable of producing an agricultural surplus that can sustain GAMA's agro-industries (food, and vegetable oil processing, beverages, and tobacco) as well as the textile subsector. In spite of the potential, agricultural raw materials for important domestic industries continue to be in short supply.

(b) Wood Processing

Given its resources, Ghana is capable of providing adequate raw materials for wood processing enterprises which feature prominently in GAMA. Forests cover about one-third of the country's total area and these products accounted for about 5% of GDP in 1984. Forest products are the third highest earner of foreign exchange (8%), behind cocoa and minerals. It is possible to process wood beyond logs and sawn timber for foreign markets. Smuggling of timber and inadequate port facilities and transportation, and shortages of equipment and spare parts have contributed to the decline in production for export.

(c) Minerals Extraction

Ghana is rich in minerals, chiefly gold, followed by diamonds, manganese and bauxite. Aluminum production is one of the basic industries of GAMA. Considerable reserves of limestone and iron ore deposits remain to be tapped to support the construction industry, which is expected to play a key role in the reconstruction and development of GAMA. Natural resources such as quarry stones, clay, sand and gravel, and ornamental stones are mined in different locations of GAMA, providing the growing construction industry with some of the essential local building materials.

(d) Population and Markets

On the demand side, GAMA's manufacturing sector has substantial potential for development. The country's population is relatively large (estimated in 1990 at 16 million), although currently, depressed, demand could not absorb full-capacity production of manufactured products. Prospects for exporting manufactured products would increase with continued recovery and adjustment as higher productivity and exchange rates make them more competitive. Development of ECOWAS would expand the regional market to some extent. Areas in which GAMA has reasonable prospects of producing for the world market include forest-based industries, furniture, mineral based industries and agro-industries, with some possibilities in the West African regional market for textiles and cement.

(e) Constraints of the Manufacturing Sector

In spite of the potential, the manufacturing sector is constrained by a number of factors including an unfavorable international economic environment, and a distorted domestic incentive and policy framework which has had an adverse effect on the manufacturing sector. Foreign exchange availability has been reduced by the slowdown of world economic conditions; drought has cut back crop production both for export and domestic processing. Manufacturing has been hard hit by high interest rates (25-30%) which prohibited investment in plant and equipment whose utilization rates were already very low due to shortages of raw materials and foreign exchange. Problems of management, organization, skilled manpower, capital, etc. have further aggravated the situation.

3.5 SERVICES

The service sector includes transportation, wholesale and retail, financial services, governmental and private services. Nationally the sector contributed 37% of GDP in 1985, increasing to 43.4% in 1990. Its contribution will decrease slightly to 38.9% in 1995. The decrease is due to the slow down of governmental services which are expected to decrease from 12.5 to 11% between 1985 and 1990, and to 9.6% in 1995. All the other subsectors will either increase or remain at the 1990 levels. Nationally, in terms of sectoral growth rates, the service sector will continue to decrease from 7.5% in 1985 to 4.2% in 1995, representing a general trend experienced also by other sectors (Table 3.1). In general, the growth rates for all subsectors are expected to more or less stabilize after 1990.

3.5.1 Structure and Characteristics of the Service Sector

The commercial activities are characterized by a few large and medium size enterprises engaged in import, export, wholesale, distribution, and retail businesses and a myriad of small scale traders, suppliers, transporters, and retailers. Commerce is the largest and most visible subsectoral activity. The large firms are functionally related to the small enterprises. Although these enterprises (which include UAC group of companies, UTC, SCOA, and GNTC) account for just a fraction of the labour employed in the commercial subsector, their turnover is about one- half of the total in the subsector.

In the middle are small stores, and market stall owners who also depend to a large extent on the wholesaling functions of the large scale commercial units. A few of them obtain their supplies directly from the industrial establishments within the metropolitan area and from abroad. These, together with the large units, account for between 70 and 80 per cent of the value of the total turnover of the commercial activities.

At the bottom of this functional hierarchy are the street vendors. In terms of numbers employed, this group accounts for about 70% of those engaged in commercial activities. By virtue of ease of entry, the flexibility of self employment, and the need for little or no literacy requirements, women tend to dominate the subsector.

Because of trade liberalization, the commercial activities are booming, attracting more and more entrants into the market where 55% of the goods traded are imported. As a result, there is stiff competition which tends to reduce profit margins, thus inhibiting business expansion.

The wholesale and retail trade business is run by women. Ghanaian women are well known for their skills and hard work. Although banks consider women creditworthy with good repayment rates, the expansion of their businesses are constrained by the fact that 66% of them have no formal education, and 70% of them have incomes of less than 200,000 cedis annually. The expansion of their businesses is also limited by their reluctance to use banking services and access to credit. The traditional roles of women as agricultural workers and traders have left them with little or no experience in the more formal business environment. The commercial subsector is fragmented, consisting mainly of street vendors and small scale operators with ease of entry, low profit margin and high mortality rates. Growth in wholesale and retail trading is expected to taper off because of the shift in incentives away from trading activities.

3.5.2 Financial Services and Institutions

(a) Set-up

Ghana's formal financial system is dominated by an oligopolistic banking sector comprising the Bank of Ghana (the Central Bank), three primary commercial banks, some secondary banks, and a sizable number of rural banks. The three primary commercial banks are the largest financial intermediaries both in terms of their assets and network of branches. All the primary and secondary banks are either partially or wholly owned by the government. The three development finance institutions (the Bank for Housing and Construction, Agricultural Development Bank, and the National Investment Bank) have significantly increased their commercial banking in recent years. These banks, like many other banks in Ghana, face serious financial difficulties arising primarily from substantial non-performing loan portfolios.

(b) Banking Reform

During 1989 and 1990 the Government implemented a programme to strengthen the performance of the banking system, which, among other things, led to the creation of a Non-Performing Assets Recovery Trust (NPART) whose function is to realize the non-performing assets of distressed banks which were transferred to it. The programme also aimed at improving the regulatory framework, restructuring financially distressed banks, and improving resource mobilization and increasing the efficiency of credit allocation by the banking system. Government has taken measures to encourage the development of primary and secondary money markets. A stock exchange company was incorporated in early 1990 and started commercial trading in November 1990.

(c) Institutional Constraints

Although the government has taken several important measures to lay the foundation for a smoothly functioning banking system, there are a number of impediments to the use of the financial services in the economic development of GAMA. The sharp drop in growth of credit to the private sector (5% in 1989) reflected the impact of the Bank of Ghana's instructions to commercial banks at the beginning of the year to exercise restraint in their lending, given the large outstanding stock of non-performing assets. In addition, some banks were constrained from making loans because of the need to comply with higher capital adequacy ratios in the revised Banking Act. The net effect on borrowing has been high interest rates, ranging between 25 and 30 %, contributing to the slow down in manufacturing growth.

In spite of a significant tightening of monetary policy, inflation continued to accelerate during 1990, 37.2 per cent, resulting in negative real interest rates (Table 3.4) at which rate no investment can take place, leading also to a low rate of private savings which is expected to reach 9.4% of GDP by 1993. Public savings are expected to increase from 1.7% of GDP in 1990 to 5% by 1993, mainly due to higher mobilization of tax revenues.

Table 3.4 : Real interest rates, 1987-1991 in percentages

Short-Term Deposit	1987	1988	1989	1990	1991 Jan	1991 Feb
Rate (6 months)	13.1	-7.4	-5.6	-11.2	-8.0	-6.0
Maximum Lending Rate	-11.7	-1.2	-3.4	-5.1	-1.4	-0.9
CPI (12 Months Average)	39.8	31.4	25.2	37.2	37.0	36.2

Source: Ghana: Progress on Adjustment, WB 1991

The financial system will also be able to provide sufficient resources to finance private investment if funds are not preempted by government borrowing. In recent years, prudent fiscal policy has enabled the central government to reduce its demands on the banking system. The share of credit to government in the net domestic assets of the banking system has fallen considerably, resulting in government becoming a net creditor to the banking system in 1989.

(d) Other Problems

The contribution of the financial system to the economy also depends upon the quality and quantity of its services and the efficiency with which it provides them. Intermediation costs are very high. There are several reasons for this including inefficient operations of the banks, bad loans, high reserve requirements generating little or no return, high tax rates, and little competition. Over all, the banking system in Ghana is still relatively concentrated and lacks competition. It has also suffered adversely from generally low-level productive activities during the period of economic decline. Most of all, it lacks the confidence of the people.

3.5.3 Employment in the Service Sector

The service sector is the largest sector in terms of employment, comprising about 345,000 or 65% of GAMA's labour force, women comprising 53% of the total employment in the sector (Table 3.5). In the wholesale, re tail, restaurant and hotel businesses, 82% of the employees were women and 83% of them were self-employed in 1984. Men heavily dominate the financial, transportation and communication subsectors. In the GAR, for which statistical data were available, 58% of the labour force was nonsalaried, i.e. self employed or unpaid family workers, consisting of 37% for men and 78% for women. Public boards and the central government account for 23% of the employment in GAR and 25% in AMA.

Table 3.5 Service Sector Employment

SUBSECTOR	GA	ACCRA	TEMA	TOTAL
Wholesale, Retail, Restaurant & Hotel	11,837	135,145	24,220	171,202
Transportation, Storage, Communication	2,178	26,071	8,483	36,732
Finance, Insurance, Real Estate & Business	638	13,914	739	15,291
Community, Social & Personal Services	7,132	102,365	12,108	121,605
TOTAL	21,785	277,495	45,550	344,830

Source: GAR Demographic and Socioeconomic Characteristics, 1984 (GSS)

3.5.4 Redeployment in the Public Sector

The size of the public sector in GAMA is expected to decrease further in the coming years, in line with the restructuring of the national economy. Over 60,000 of public service employees and employees from state enterprises, most of them from GAMA, have been redeployed since 1987. This means that the local economy will have to generate additional jobs over and above the normal growth rate of the labour force, estimated at about 44,000 between 1990 and 1995. In 1984, 90% of the total employment in GAMA was urban. More importantly, 42% were employed in salaried positions, and of these almost 55% were in the public sector. Since direct public employment is scheduled to decline, opportunities for wage employment are likely to come from the private sector.

3.6 EMPLOYMENT PROJECTION AND ANALYSIS

The employment projection between 1984 and 1995 is shown on Table 3.6. During this period, employment will increase by over three-quarters of a million, which is about 140% in 11 years, or an average of about 67,200 new jobs will be created every year, of which 36,890 will be in the service sector, 28,820 in industry, and 1470 in agriculture. Although the number of people working in the agricultural sector will increase by over 16,100 persons between 1984 and 1995, the percentage distribution in 1995 will drop from 4.76% to 3.66% of the total population of GAMA.

The projections for industry and the service sectors are based on national growth rates. However, the growth rates of both sectors are expected to be higher than the national averages. As a result employment in both sectors is expected to be higher than the figures shown on Table 3.6. This was confirmed by the projection made using economic base models. The model projected that employment would increase by 776,090, which is 24,870, or about 3% higher than the projection given on Table 3.6

Table 3.6 GAMA Employment Projection

YEAR	AGR	IND	SER	TOTAL
1984	61,700	135,550	344,830	542,080
1985	63,660	165,370	382,830	611,790
1986	65,305	181,910	413,380	660,590
1987	66,950	201,920	471,260	740,130
1988	68,600	220,090	513,670	802,060
1989	70,250	239,900	549,630	859,780
1990	71,900	263,890	582,600	918,390
1991	73,080	290,780	617,560	981,420
1992	74,260	330,920	648,440	1,053,620
1993	75,440	367,320	680,860	1,123,620
1994	76,630	407,720	714,900	1,199,250
1995	77,810	452,570	750,650	1,281,270

Source: Accra Planning and Development Programme 1991.

3.7 EXPORT EMPLOYMENT

The export employment of GAMA is estimated to be about 186,000, or 35 % of the total employment in GAMA *(Table 3.7)*. The term export employment refers to the number of jobs created in GAMA as a result of markets outside GAMA. Of this, about 74,500 and 45,000 work in the community and social services and manufacturing sectors, respectively. On the other hand, the economy of GAMA is agriculturally dependent on the rest of Ghana and/or the world, employing over 298,300 persons in agriculture and mining and quarrying. This means that 6.8% of the agricultural labour force in Ghana works to feed GAMA.

The export employment provides useful information about the economic strengths of GAMA and hence the development of appropriate policies and strategies to consolidate, expand, and/or diversify its economy, which will be the subject of Chapter 2 Volume II.

Table 3.7 Export Employment

Manufacturing	44,989
Electric, Gas & Water	6,805
Construction	13,670
Wholesale & Trade	9,242
Transport & Storage	24,466
Finance, Insurance, etc	12,530
Community & Social Services	74,423

Source: Accra Planning and Development Programme 1991

3.8 INFORMAL SECTOR

3.8.1 Characteristics and Employment

The informal sector is characterized by its size and nature of employment, non-registration, lack of access to utilities, and the use of low level technology. In 1984, employment in the informal sector was estimated to be nearly 300,000 which is about 57 % of the total employment in GAMA, of which about 50 % was in the wholesale and retail trade *(Table 3.8 below)*.

According to Table 3.8 the informal sector employed nearly 56 % of the total labour force of GAMA in 1984. The largest sectors contributing to the informal sector's high rate of employment were wholesale and retail trade (149,125), manufacturing (65,097), and agriculture (41,470).

Table 3.8 Informal Sector Employment 1984

Sector	GAMA Total	Informal Sector	Female Employment		
			Total	Self	Share GAMA
Agriculture & Fishing	61,700	41,470 (68%)	16,769 (40.4%)	14,025 (83.6%)	27.2 0
Mining and Quarrying	1,487	552 (37%)	-	-	-
Manufacturing	103,570	65,097 (63%)	49,141 (75.5%)	41,357 (84%)	47.40
Construction	20,109	5,373 (27%)	-	-	-
Electric, Gas	6,406	-	-	-	-
Water Supply	1,984	-	-	-	-
Wholesale and Retail	171,202	149,125 (87%)	132,527(88.9%)	125,539 (94.7%)	77.40
Transport, Storage,and Communication	36,732	10,930 (30%)	107 (1%)	67	-
Finance, Insurance& Real Estate	15,291	738 (5%)	-	-	-
Community and Social Services	121,605	26,701(22%)	5,886(22%)	3,664(62.2%)	.05
Total	540,100	299,986(55.5%)	204,430(68.2%)	184,653(90.3%)	37.8

Source: Accra Planning and Development Programme 1991

3.8.2 Role of Women

Women dominate the wholesale and retail trade (89%) and manufacturing (76%), contributing significantly the overall majority employment (68%) in the informal sector. Women make up 38% of the total labour for in GAMA, 47% on manufacturing and 77% of the wholesale and retail trade. The most interesting aspect female employment in the informal sector was the high rate of self employment: 95% in wholesale and re compared to 86% for men; 84% in manufacturing and only 73% for men. The low participation of women the technical and professional fields explains their traditional roles and the level of education.

Table 3.9 Projected Informal Sector Employment AMA 1990 & 1995

	1990	1995
Agricultural & Fishing	49,937	60,756
Mining Quarrying	724	881
Manufacturing	78,524	95,536
Elec., Gas and Water	-	-
Construction	6,514	7,924
Wholesale & Retail Trade	179,846	218,809
Transport. Storage & Comm.	13,027	15,849
Finance Real Est. & Business	724	881
Community & Social Services	32,206	39,183
Total All Industry	361,863	440,260

The total employment in 1990 was 361,863 (Table 3.9 above), an increase of 21% since 1984. This is expected to further increase by 22% in 1995, when the employment of the informal sector will be 440,260, representing over 34% of the total labour force in GAMA, compared to 39% in 1990 and 56% in 1984. This shows a steady decline in the share of the informal sector despite the growth in the actual number employed. The high figure for 1984 may be due to the high influx of people who returned from Nigeria in 1983. On the other hand, the increase since 1984 in the number of people working in the informal sector is partly the result of the government's policy of redeployment in the public sector. The decline in the share of the total employment is due to a faster growth rate of employment in the formal, private sector.

3.8.3 Contribution to AMA

The informal sector's contribution to Accra Metropolitan Assembly's budget was 135.32 million cedis in 1989, which was 21.5% of the Assembly's total budget. The receipts for 1990 and 1991 were estimated to be 211 and 271 million cedis, representing, respectively, 21.7% and 15.5% of the total revenue of the District Assembly. The receipts from the informal sector represented in 1989 about 82% of the total revenue from licenses and fees, 47% in 1990 and 25% in 1992. The decline in the share of the informal sector's contribution is due to the improvement in the efficiency of tax collection in other areas, notably licenses and fees which increased from 166 million in 1989 to 1099 million cedis in 1991, and property taxes which also increased three-fold during the same period.

3.9 ISSUES IN ECONOMIC DEVELOPMENT

3.9.1 Formal Sector

(a) Inadequate Institutional Framework

Although Local Government Law 207 provides some autonomy for district assemblies, it is not sufficient to initiate or plan economic development programmes, or raise resources locally or internationally to finance local projects, which are now the concern of sectoral ministries. For GAMA to compete with other urban sectors, nationally or internationally, or affirm its place as the nation's capital, it needs to have an autonomous structure to fashion its own economic development plans, raise the necessary funds, through taxation or borrowing, provide fiscal or financial incentives to attract investment and hence expand its economic base.

(b) Conflicting Economic Objectives

There are conflicts in government policy of economic development; for example, the policy of trade liberalization which allows the importation of cheap or used cloths and other items is in direct conflict with the policy of developing local resource-based industries such as textiles, rubber, etc. Similarly, the policy of tight fiscal control and expansion of the manufacturing sector and the policy of privatisation are conflicting. While the existence of these conflicts are understandable, government needs to make its choices clear and consistent.

(c) 3.9.3 Shortage of Development Capital

The biggest constraint in the development of GAMA is the shortage of development funds. At present capital expenditure is financed by the central government or by surpluses generated on current accounts and, as such, the three District Assemblies do not carry any debt service burden. All capital expenditure project loans from international organizations and bilateral agencies are the responsibilities of the central government and not that of the individual local authorities. The projections of AMA's total revenue for 1990 and 1996 are 850 and 1,116 million cedis, including salary grants of 168 and 90 million cedis respectively from the central government. The expenditures for the same period are 571 and 823 million cedis, providing surpluses of 279 and 293 million cedis for capital expenditure. Tema's surpluses for the same period are estimated to be 66 and 500 million cedis, during which time its revenue will grow from 266 to 899 million cedis, with only 30 million cedis of salary grant from the central government. These surpluses are not enough for either Accra or Tema to finance their distressed infrastructure activities.

(d) Manpower Shortages

High turnover of managerial and technical personnel have led to lack of experience and continuity. The shortage of experienced and qualified manpower in the manufacturing enterprises will be critical in the coming years as industries struggle to increase their output levels. The divestiture programme which was started recently by the government should also go a long way to improving efficiency in the management of the state owned enterprises. The manpower pyramid of Ghana has been undergoing significant structural changes since 1960. The manpower pyramid in 1984 was far more top slim and bottom heavy as compared to the 1960s *(see section 6.26)*.

(e) Shortage of Local Materials

Manufacturing sector production has persistently been constrained by the limited availability of inputs, both local and imported. Although the strategy for industrialization was based on import substitution, the resultant structure of production was heavily dependent on imported raw materials and spare parts. Even some activities that were intended to be based on domestic raw materials, such as textiles, have become heavily dependent on imported raw materials. Drastic declines in domestic production of rubber, sugar, and tobacco, and stagnation in cotton and palm fruits have constrained production in processing industries.

(f) Industrial Capacity

Since the ERP, industrial capacity in GAMA has shown positive improvements though they are somewhat slow and skewed. Aggregate manufacturing capacity nationally moved from 43% in 1986 in domestic resource based industries to 58% in 1987, and from 25% in 1986 in import reliant industries to 35% in 1987. While manufacturing as a whole remains at 63% of its peak in 1977, several agro industries in GAMA have reached or are approaching their 1977 levels of output. The industrial capacity in 1990 was only 40%.

A variety of reasons contribute to the low industrial capacity. The economy did not and still does not generate sufficient foreign exchange to supply the sector's imported input requirements and the high costs of manufacturing production prevented the subsector from meeting its own foreign exchange needs through export earnings. The size of the domestic market in some cases is too small for efficient utilization of capacity especially given the sustained decline in real income per capita. Inadequate supply of domestic raw material has contributed significantly to reduced capacity utilization in the agro-processing industries.

(g) Management

Almost all of the small scale industries located in GAMA are owned by individuals or sole proprietors, whereas the medium and large scale manufacturing units are generally owned by the state, joint state/private organizations, and cooperatives. This has created excessive political interference in day-to-day operations and inadequate attention to broad policy making, financing problems due to inadequate working capital, poor project planning resulting in excessively large and capital intensive industries, often unsuitably located for political reasons, and shortage of technical and managerial skills. Furthermore, the high management turn over and the overlapping and hierarchical organizations controlling these organizations have been a problem of state enterprise.

(h) Supply of Utilities

Erratic supplies of electric power and water are persistent problems in GAMA, presenting major physical bottlenecks in economic development, especially in the industrial sector where constant supply of water and power are needed. Although both water and electrical power are abundant, the distributional systems are inadequate, inefficient, and obsolete.

(i) Lack of Good Communications Network

GAMA suffers from lack of good and reliable transportation and communications systems, despite improvements in the past few years. Due to inadequate maintenance, the paved roads suffer from varying degrees of distress. This and the network gaps here and there have made movement of people and goods very expensive. The condition of roads, railways, and ports need additional improvements *(see section 5.5).*

The telephone, postal, and other communication systems are in most cases defective and unreliable. Both local and international communications are difficult, impossible at times, time-consuming, and of poor quality. The capacity of the telephone exchange does not cover the metropolitan area *(see section 5.2.6).*

(j) High Cost of Financing

The oligopolistic structure of the banking system in Ghana, together with the high rate of inflation have led to interest margins, costs and profits which are high compared to other countries. Current interest rates range between 25 and 30 %. These adversely affect savings and borrowers for productive investment. The financial restructuring taking place at the Bank of Ghana is designed to strengthen the financial institutions and create an environment conducive for financial markets, including competition among financial institutions.

(k) Shortage of Commercial Space

One of the major constraints to the expansion of the service sector in Accra is the shortage of commercial space, especially in the CBD, where rents are extremely high. Congestion and parking problems in the various business or market areas, of the city including the CBD, have contributed to the high cost of doing business in Accra. These problems discourage business expansion. The strategy for business expansion needs to aim at the creation of more commercial spaces and the elimination of bottlenecks in the movement of people and goods.

(l) Land Markets

A variety of problems connected with the traditional and state holding and ownership systems, inadequate conveyancing and titling procedures, sub division, and the high rate of inflation have pushed land prices beyond what the large majority of GAMA residents can afford. This, in turn, has inhibited the real estate industry from providing much needed housing and commercial and office space in GAMA.

(m) Facilitating Investment

The Ghana Investment Centre provides some service to potential investors, but it is not sufficient. Conflicting policies among sectoral ministries, the number of agencies who have to be consulted or whose approvals are needed discourage potential investors from coming to GAMA.

(n) Export Promotion

Export performance of GAMA industries as a whole was very poor, with 80% of the units not in the export market at all. The weakness of the export market is due to the uncompetitive nature of most of the import-substitution industries. Neither the quality nor the scale of their operations permits them to compete in the international markets. Manufactured exports are dominated by aluminum, wood and cocoa products, cigarettes, cotton fabrics, garments, vegetable oils, and refined petroleum products. The potential for the manufacturing sector is high considering the natural resource endowments of Ghana.

3.9.2 Informal Sector

(a) Lack of Recognition

Despite its contribution to the AMA's economy, 82% of the total for license and fees, 22 percent of the total revenue in 1989, 40 percent of the total employment in 1990, the informal sector has neither a strong public support nor a recognition by governments, especially at the local level. Recently, the informal sector has become a receptacle for redeployees from the public sector redeployment and divestiture programmes. These sector needs to be fully and officially recognized in order to further enhance its contribution.

(b) Security of Tenure

Over 60% of the members of the informal sector operate in stalls, kiosks, and street-side open spaces. Most members are easy targets for on- going demolition and eviction since the majority of them occupy space illegally in the CBD, commercial thoroughfares, and the outlying business centres which are already too crowded. About 72% of those surveyed showed a strong preference for staying in the commercial districts since their activities were consumer oriented. Due to the fragility of the business, they cannot afford constant relocation. They need to be given permanent space, with access to utilities to operate their businesses.

(c) Lack of Regulations

The informal sector is characterized by high birth and death rates. A recent survey showed that a high proportion of the businesses last only a few years. This is partly due to the ease of entry into the business, which does not need any qualifications, resulting in very high competition and small profit margins. This, in turn, leads to no growth or development. There is a need for some kind of regulation of the sector, providing advice about these and other aspects of business as well as directing potential entrants to other activities.

(d) Inadequate Integration with the Formal Sector

At the moment, over 70% of the informal sector enterprises have no linkages with the formal sector in terms of supply of inputs in each others production activities. The relationship is also the same among enterprises in the informal sector, which is an attribute of undeveloped economies rather than that of the informal sector. This does not mean that the informal sector gets all of its inputs or finished goods from abroad. In fact, 74% of the enterprises surveyed obtain their inputs from GAMA, including (36%) from the formal sector. But this is in the form of finished products. Integrating the two economies can benefit the informal sector in many ways: technological diffusion; planning and scheduling; financial and resource management, etc.

(e) Need for an Organization

There is a high turnover of people operating in the informal sector due to excessive competition and ease of entry to the business, the members have no organization to protect their interests or to request assistance from government officials or agencies. The members find it difficult to operate without an organization in an atmosphere which is generally hostile to their presence.

FISHING LANDING PORT - JAMES TOWN

FISH SMOKING AT CHORKOR

ECONOMIC ACTIVITY

FISH MARKET AT JAMES TOWN; CAR PARK BEING USED AS MARKET

TYPICAL TRADING IN MARKETS

ECONOMIC ACTIVITY

Chapter 4

URBAN ENVIRONMENT

4.0 INTRODUCTION

This chapter examines some of the historical factors which have shaped the form and structure of the metropolitan area as well as various issues which have been taken into consideration in the development of a preferred structure plan for GAMA. The chapter covers population, urban development, land, housing and urban landscape. Each section is a summary of studies, reports, surveys, research and analysis undertaken for and by the Accra Planning and Development Programme to prepare the strategic plan. A list of reports and documents are given in Appendix 1 of this volume. Interested readers should consult these reports for more detailed information.

4.1 POPULATION AND DEMOGRAPHIC TRENDS

Population growth is one of the major forces driving the development of the Greater Accra Metropolitan Area (GAMA). The reasons for this relate primarily to its capital city status, and dominance as the leading manufacturing, trade, finance, medical and education centre in Ghana. There are many different characteristics of population in the metropolitan area in terms of ethnicity, age, structure, residency status. These factors have a significant impact on the location, structure, and socio-economic features of the urban population. This section of the reports summarizes some of these features and the impact they will have on the future development of the metropolitan area. Readers interested in obtaining more detailed information should consult the Demographic Studies and Projections for Accra Metropolitan Area prepared for the Accra Planning and Development Programme or the Ghana Statistical Service.

4.1 1 Past Trends

(a) Growth Trends

The population growth of GAMA has been very rapid with all the three districts experiencing average annual growth rates above 3 percent since the 1960 census *(see Table 4.1 & Fig. 4.1.1) The period 1960-70 was one of rapid industrialization and expansion in the building, manufacturing, and commercial sectors in major towns in Ghana. The primacy of Accra metropolitan area as an administrative, educational, industrial, and commercial centre in attracting people from all over Ghana continues to be the major force for rapid population growth, with migration contributing to over 35% of the population increase. The population of GAMA is estimated to have increased at an annual growth rate of 4.5% since the last census in 1984.*

Table 4.1 Population of GAMA 1960, 1970 and 1984 Censuses

District	Population 1960	1970	1984	Annual Growth Rate 1960-70	1970-84
Accra	388,396	636,667	969,195	5.1	3.1
Tema	27,127	102,431	190,917	14.2	4.5
Ga	33,907	66,336	132,786	6.9	5.3
Total	449,430	805,434	1,292,898	6.0	3.5

Source: Ghana Population Census 1984

(b) Population Density

The gross density of population for GAMA in 1984 was 10.03 persons per ha compared to 6.23 persons per ha in 1970. The highest densities were recorded in Accra district with an overall average of 69.3 persons per ha followed by Tema district with 11.34 persons per ha. Ga district had the lowest overall average density of 1.54 persons per ha.

Most of the residential neighbourhoods, especially the low and medium income areas intensified in population densities between 1970 and 1984 despite the physical expansion of the urbanised parts of the metropolitan area.

The highest densities of population exceeding 250 persons per ha, occurred mostly in the dominant immigrant areas such as Ashiaman, (which had the highest density of 84.6 person per ha.), Accra New Town, Nima Sabon Zongo, Chokor, Sukura, Mamobi and Old Dansoman; and in the oldest parts of Accra such as James Town, Ussher Town and South Labadi. These neighbourhoods are already facing problems of poor housing, inadequate sanitation, lack of basic infrastructure and services and accommodates the bulk of the urban poor.

In contrast most of the well serviced prestigious residential areas such as Cantonments, Ridge/West Ridge, Ablemkpe, Ringway Estate, Dzorwulu and Airport had very low population densities ranging between 17.5-40 persons per ha even though intensified between 1970 and 1984.

4.1.2 Factors Influencing Population Change

There are four factors which affect population change:

(a) Age-sex Distribution

Ghana's population is a very youthful one with 47.1% of the population under the age of 14. This rate is not expected to decline in the foreseeable future - short of a change in the pro- natalist tendencies among Ghanaians and an improvement in the impact of family planning - which has so far been limited. Table 4.4 gives the age and sex distribution for Accra and the country in 1988.

Table 4.2 Age and Sex Distribution of Population

Age Group	Accra			Ghana		
	male	female	both	male	female	both
0-14	22.0	22.0	44.0	24.1	23.0	47.1
15-44	21.4	23.5	44.9	18.3	20.7	39.0
45-64	5.9	3.8	9.7	4.7	5.7	10.4
64+	0.9	0.5	1.4	1.9	1.6	2.5
Total	50.2	49.8	100.0	49.0	51.0	100.0

Source: Ghana Living Standard Survey 1988.

The rate of immigration from other regions to the metropolitan area accounts for the high concentration of population in the reproductive age group of 15-44. This is not unexpected since migration itself tends to be age specific. This concentration of population in the reproductive age group coupled with fairly high fertility levels and lower death rates underlie the high inter- census increases in population in GAMA.

With the crisis of the mid 1970s and the exodus of population to neighbouring West African countries, the sex structure of the population of the metropolitan area changed in favour of females who are less mobile. The 1984 census showed that males accounted for 49.5% of the total population. The overall dominance of males in the population has however been re-established with the males now accounting for 50.2% of total population. This has been a consequence of the return of over a million Ghanaians from neighbouring countries since 1983.

(b) Fertility

The Greater Accra Region has the lowest fertility rate in the country. The fertility rate has declined from 5.08 to 4.54 per 1000 between 1982 and 1988 for women between the ages of 15 and 44. The National fertility rate also declined from 6.33 to 6.11 during the same period. The mean number of children born (surviving and deceased) to women in GAMA aged 15-49 was 6.2 which was the lowest for all regions. The mean number of children ever born to women between the ages of 15 and 49 nationally was 6.92.

A field survey conducted for the APDP suggests that the interest in small to medium sized families is generally shared by all income strata with few variations by class. This may be due to the widespread diffusion of knowledge of modern family planning practice, coupled with the strains and stresses of catering for large families given the high cost of living in the metropolitan area. The same survey indicated a very high level of acceptance of family planning - although skewed in favour of education. Over 95% of university education families practice family planning as compared to 61% without any schooling. Overall, an average of 88.4% of those interviewed in Accra and Tema practiced family planning. The correlation between income and family planning is not as strong as education.

(c) Morbidity and Mortality

Better access to health care for infants, children and pregnant mothers in the metropolitan area is reflected in the overall low mortality levels. The infant mortality rate for 1978-87 for Accra was 58 per thousand and the child mortality rate 49 per thousand - the lowest in the country. National infant and child mortality rates were 81.3 and 78.9 per thousand respectively. Both infant and child mortality are higher in the rural areas of GAMA. During 1978-87 period approximately 87 per 1000 children in rural areas died before reaching their first birthday. The under-five mortality rate is about 24% higher in rural than urban areas.

The mortality levels for Ghana and Greater Accra, as measured by expectation of life at birth for the period 1978-87 show that the region enjoyed about 11% lower mortality than that of Ghana. Since the base mortality level for projecting the national population was assumed to be 51.79 years, GAMA is assumed to be experiencing an expectation of life at birth of 57.46 years. When split into male and female expectation of life at birth, males will live 55.56 years while the females will live 59.32 years. The average life expectancy in GAMA by 2010 is projected at about 66 years (64 for males and 68 for females). The consequence of the combination of fairly high fertility rates coupled with low mortality levels is that natural growth rate continues to play an important role in the population dynamics of the metropolitan area.

(d) Migration

Migration has had a significant impact on the socio-economic characteristics of the metropolitan area. The reasons and pattern of migration are complex, but rural poverty, lack of employment opportunities, expectations of an improved lifestyle and financial gain, education and family reasons cause people to migrate. There are 3 categories of migration which have an impact on population change in the metropolitan area.

(i) Inter-Regional Mobility

Migration into GAMA seems to be related to the level of economic activity and the distance to the home area. For both 1960 and 1970 censuses, about 96% of males and about 98% females as a proportion of the total number of males and female migrants came from Southern Ghana (southern includes all regions except northern and upper regions and the Greater Accra Region (GAR) itself). By contrast northern and upper regions of Ghana has about 20% of the population of the country, but its percentage share of total migrant to GAR averages about 3%. The main origins of migrants into GAMA are: Eastern, Volta, Central, Western, Ashanti, Upper, Northern and Brong Ahafo Regions in descending order of importance.

Although natural increase has made a significant contribution to population growth in GAR, the trend between 1960 and 1984 has shown an increased level in migration as a factor of population growth. The percentage share of total population of Greater Accra Region born in the region itself was 64.2% in 1960, declining to 56.6% in 1970 rising to 64.3% in 1984. The current level of migration into GAMA is estimated at 25,000 per annum. There is every indication that migration, as the contribution to population increase, will remain between 30% and 35%. The overall percentage of the population represented by migrants will continue to decline.

(ii) Inter-district Mobility (within Greater Accra)

There is significant inter-district mobility within the Greater Accra Region to one or the other of the three districts within GAMA. Urban centres within GAR experiencing the most rapid out migration to Accra, Tema and Ga District are: Ningo, Prampram, Akorle, Kodiabe, Ada, Asene, Asutuare and Dodowa, all of which are in Dangbe East and West Districts - which are the two districts not included in the definition of GAMA. Although Accra's fast growth has been sustained, the emphasis shifted disproportionally to Tema District between 1960 and 1970 with the development of Tema new town and port. Tema experienced a rapid increase in population through migration from all parts of the country and GAR - in particular Accra. Ashiaman, north of Tema, was the construction camp for the new town and this attracted a large number of migrant labourers mostly from Ga rural which is now Ga district. Its inter-census increase in population was only 1.8%.

Between 1970 and 1984, there was a shift in relative importance of the various districts in terms of population movements. The significant shift was to Ga District which became the second fastest growing district in GAR after Tema. This pattern is reflected in the development of entirely new residential areas outside the Accra Metropolitan Assembly boundary within Ga District. These developments are still taking place along the main transportation axes radiating out of Accra and Tema. Madina which existed as a small settlement in 1960 had a population of over 28,000 by 1984. Other significant areas of urban expansion in Ga district include: Mallam, Bortianor, Weija and MacCarthy Hill in the western direction and Dome, Ofankor and New Achimota on the Accra-Kumasi road.

(iii) Inter-Residential Mobility

Surveys conducted for the APDP indicate that residential mobility is low with over 57% of the surveyed population having lived only in their current dwelling and 24% having lived in 2 houses. Cultural, employment and income factors have a major bearing on the low level of mobility. However, many inner city areas are becoming so densely populated that current occupancy levels cannot be maintained. A rise in mobility levels are expected in future. Mobility rates are highest in the migrant areas of Accra such as Nima/Mamobi. Important reasons for population relocation would seem to be change of employment and movements related to social factors. The housing crisis with unstable tenancies and high rents in the inner city is also contributing to the movement of people within GAMA. Amongst the higher income groups, the reasons for moving to newer areas are the desire to own a home, more space and a move towards a nuclear family.

4.1.3 Projections

Various methods for estimating the population growth rate and projecting the population for GAMA over periods of time to the year 2010, based on different assumption, were used in the Demographic Studies and Projections for Accra Metropolitan Area. After careful analysis and based on available data one of the methods, the Ratio and the United Nations growth difference method, was chosen as giving relatively more reliable estimates.

From the estimates the average rate of growth in the population of GAMA for the period 1985 to 2010 is expected to range between 4.1% and 4.6% per annum. Assuming there are no factors which might interfere with current trends growth rates are expected to decline steadily over the next 20 years from the 1990 estimate of 4.6% to 4.1% per annum. This decline is expected because of Government's economic policies,

Fig 4.1.1 GAMA POPULATION GROWTH TRENDS 1960-1990
(By Districts & Total)

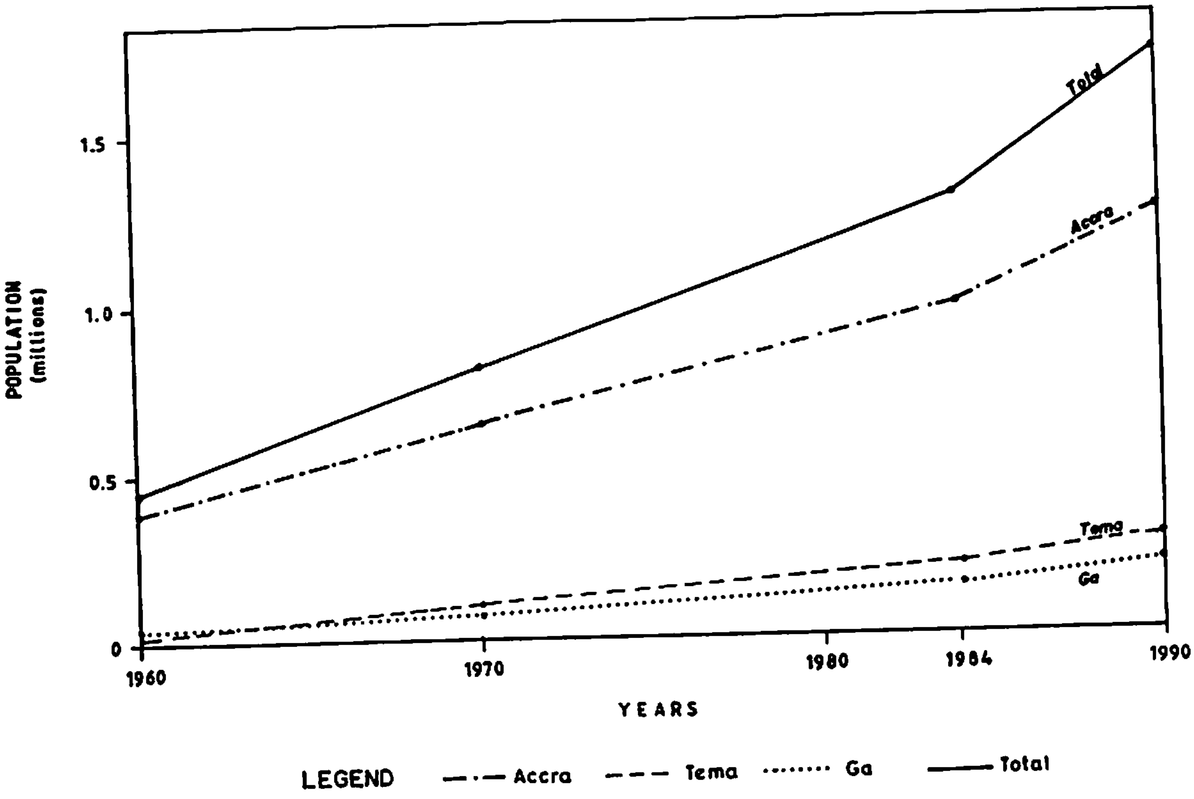


Fig 4.1.2 GAMA POPULATION PROJECTIONS 1990-2010
(By Districts & Total)

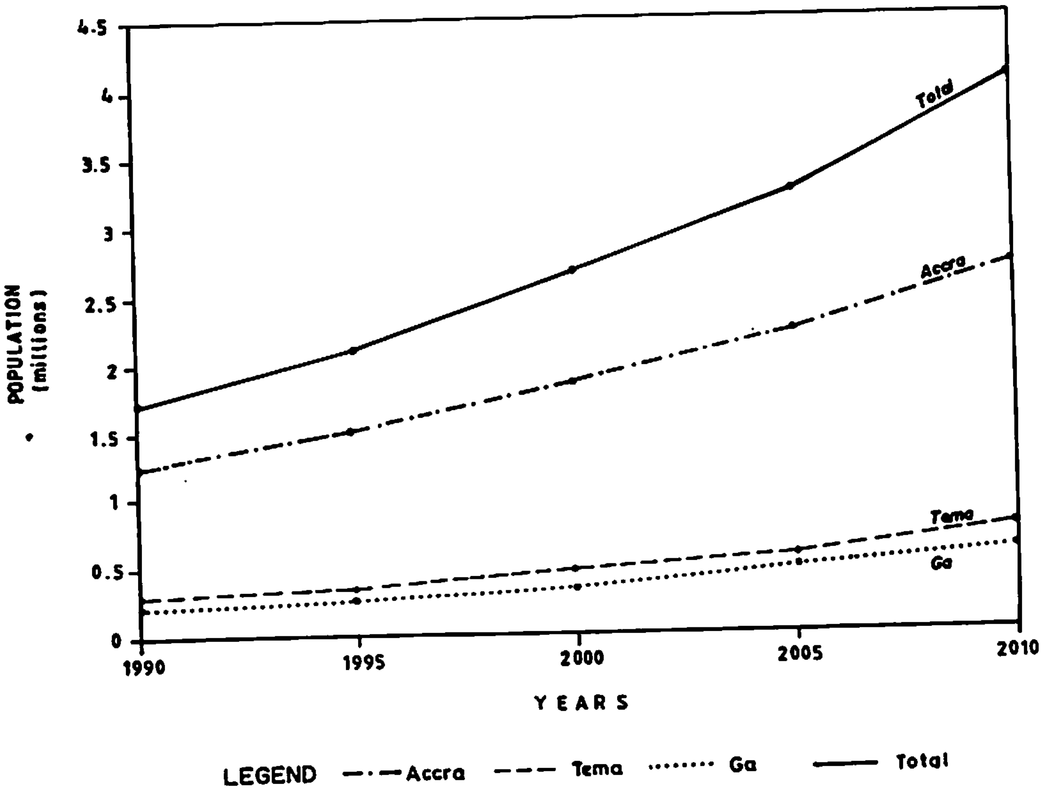
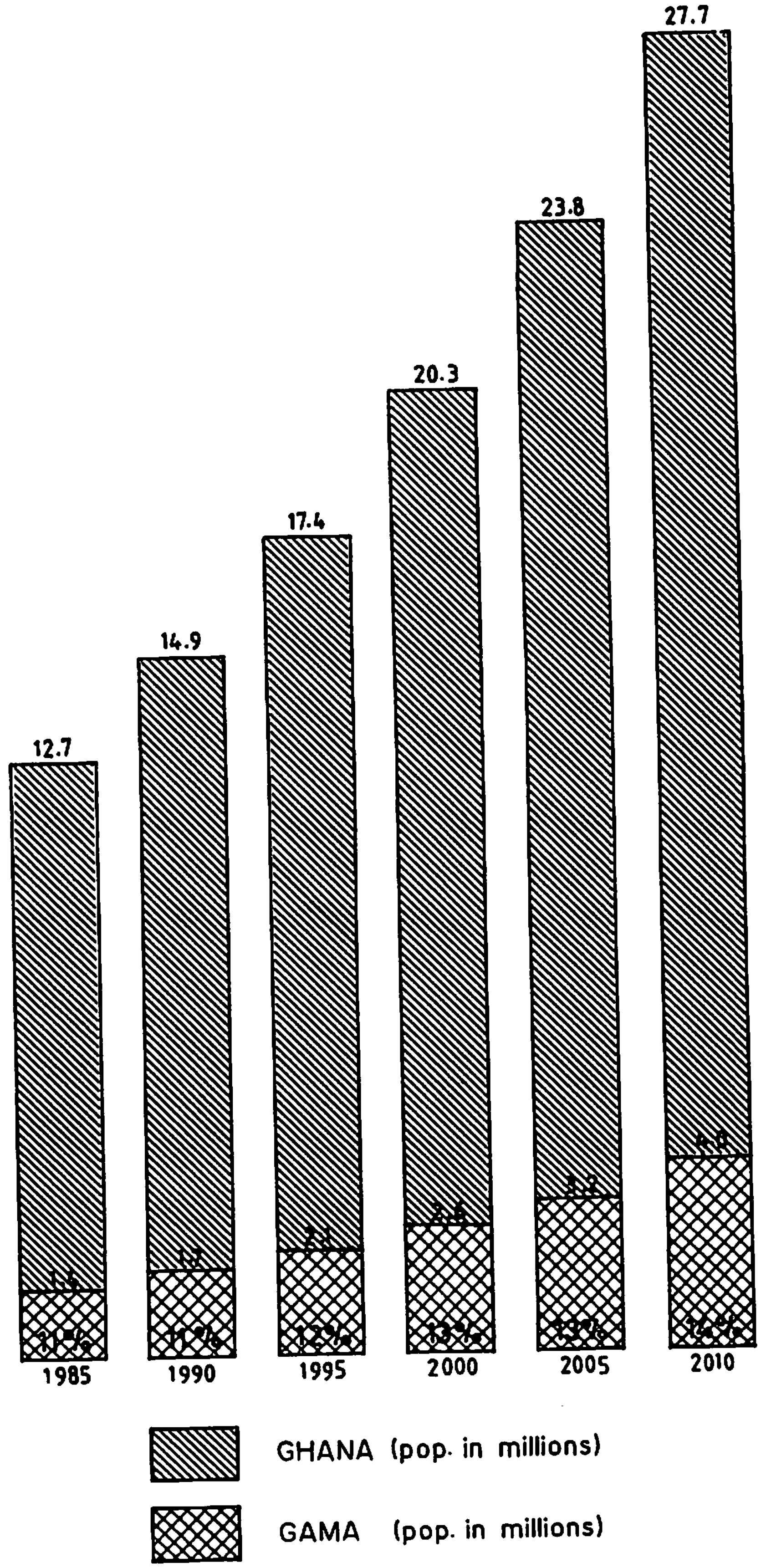


Fig.4.1.3 PROPORTION OF GAMA POPULATION IN TOTAL COUNTRY 1985-2010



decentralization and birth control policies which are expected to reduce both the natural birth and migration rates. However the infrastructure already built in GAMA will for a long time make it a more attractive place for under and unemployed rural people as well as public servants, national and international investors. A reasonable average growth rate for the period is difficult to choose, but to be on the conservative side a rate of 4.4% per annum is assumed as the average growth rate for the period. The natural growth rate will be in the order of 2.8% to 3.2% with the balance made up from migration.

In terms of actual numbers a range of population projections for five yearly intervals from 1990 to 2010, based on different assumptions of fertility, mortality and migration is given in Table 4.3.

The preferred estimates are those with medium variant assumptions. From this the population of GAMA was estimated at 1.7 million in 1990 and is expected to reach 4.06 million by 2010 (about 15% of estimated total population of Ghana - See Fig 4.1.3)

Table 4.3 Population Projections 1990 - 2010

Year	Low	Medium	High
1990	1,708,000	1,708,000	1,708,000
1995	2,122,000	2,126,000	2,126,000
2000	2,637,000	2,650,000	2,659,000
2005	3,247,000	3,289,000	3,325,000
2010	3,951,000	4,065,000	4,169,000

Source: Demographic Studies and Projection Report, APDP, 1990

The percentage of the population of Ghana who will live in Tema and Ga districts is expected to increase significantly in future. The rate of increase in population growth in Accra metropolitan area will continue to decline, as population levels in some inner city areas are stablizing and the available land for new development within the district boundary is used up. The policies of the structure plan will have an impact on population growth in all three districts but this is not expected to take effect until after the year 2000. Projections of each district's population up to the year 2010 is given in Table 4.4 (See Fig. 4.1.2)

Table 4.4 Population Projections for Districts in GAMA 1990-2010

District	1990	1995	2000	2005	2010
Accra	1,243,300	1,513,500	1,842,800	2,230,900	2,686,200
Tema	268,200	350,800	459,000	547,000	772,300
Ga	196,500	261,700	348,200	461,100	606,500
Total	1,708,000	2,126,000	2,650,000	3,239,000	4,065,000

Source: Accra Planning and Development Programme 1991

4.1.5 Issues Affecting Population and Planning.

(a) Rate of Population growth.

The rapid urbanization taking place in the metropolitan areas is beyond the capacity of agencies and organizations to provide the resources necessary to satisfy the demand for land, housing, employment welfare and community services. No country has successfully prevented the migration of people to urban areas, and at best some have slowed it down by policies of decentralization or strict control on movement. Unless strategies are adopted to reduce the natural birth and migration rate within GAMA standards of living will decline and an increasing proportion of the population will remain below the poverty line.

(b) Reducing Overcrowding

The density of population in areas like Ashiaman, Accra New Town, Nima and James Town have reached unacceptably high levels and steps must be taken to stabilize further increases in population in these areas if social unrest and serious health problems are to be prevented. Such areas must be given special attention to improve housing and environmental conditions. It must also be recognized that forced relocation of people - especially Gas - from densely populated areas will meet with resistance, so that new innovative approaches to upgrading and re-housing people in the inner city will be required.

(c) Population Monitoring and Research

The shortage of reliable information on population and demography makes it very difficult to monitor change or to make projections for planning and other purposes. Census information is not kept in a manageable form and this creates problems with analysis. Inconsistencies in enumerator area boundaries create difficulties in comparing information between censuses. Census maps are either unavailable or unreliable for the 1960 and 1970 enumerator areas. There is a need, therefore, to ensure that more reliable census information is available for the metropolitan area and that census data is updated on a more regular basis so that changes in the population can be monitored more closely in future.

4.2 URBAN DEVELOPMENT

4.2.1 Historic Pattern of Development

Three historical events shaped the development of Accra before Independence: the arrival of the Gas from 'Niger Country' in the 16th century; the building of castles, forts and trading posts along the coast; and the transfer of the administrative capital of the Gold Coast from Cape Coast to Accra in 1877.

(a) Indigenous Settlement

There is some disagreement over who were the original inhabitants of Accra - the Kpeshie, the La or the Gua. On the arrival of the Gas all four tribal groups became integrated. Accra began as a series of coastal fishing villages encompassing the area of James Town, Ussher Town and Osu. Labadi, was a separate entity and more agricultural in nature. The fishing villages of Teshie and Nungua were also established further east. Today the separate groupings, customs, habits and traditions of the old settlements remain as ethnic enclaves within the metropolitan area.

(b) Commerce and Trade

European merchants began trading along the coast in the 17th century. They constructed forts and trading posts; first by the Dutch (1650), the Swedes (1657) and the British (1673). These forts remain as Ussher Fort, Christiansborg Castle and James Fort. Accra came under the control of the British in 1868 with the takeover of Fort Crevecoeur (Ussher Fort). In 1877 Accra became the capital of the Gold Coast. It grew rapidly with increased trade which accelerated with the improvement of the port facilities and the construction of a small jetty and break water in 1906. The development of the rail and road transportation network in the 1920s consolidated the position of Accra as the seat of government and trade. In the 1920s there was a boom in cocoa trade, which brought prosperity to Accra. The country attracted European, Asian, Syrian and Lebanese merchants, who opened up shops in the town. Socio-economic policies pursued by the colonial administrations, and to some extent by independent governments of Ghana, have favoured the Accra-Tema area and this accelerated the process of urbanization. Figure 4.2 shows the historic development of Accra.

THE GROWTH OF THE CITY

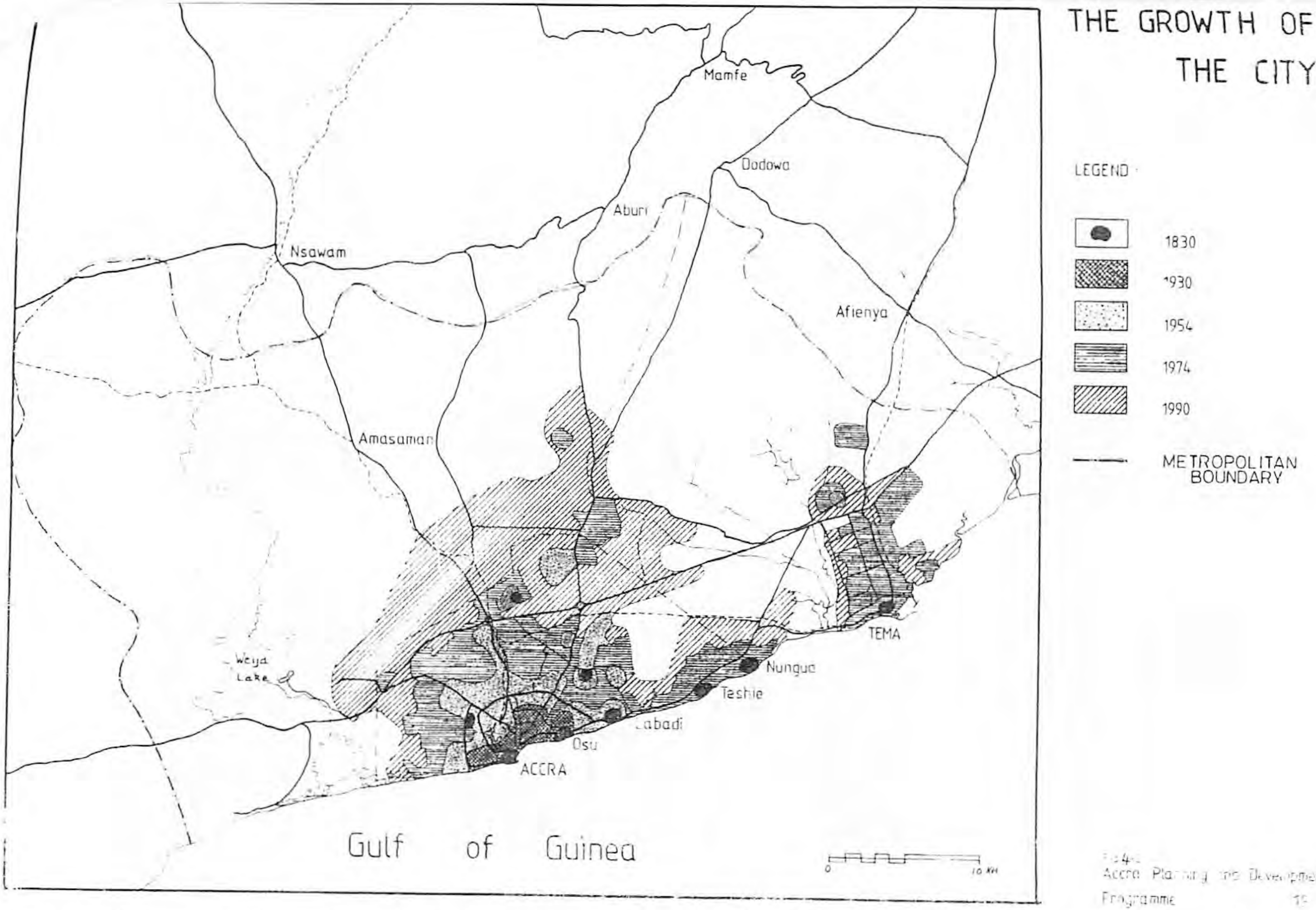

LEGEND
● 1830
▨ 1930
▨ 1954
▤ 1974
▨ 1990
— METROPOLITAN BOUNDARY
Mamfe
Dodowa
Aburi
Nsawam
Afienya
Amasaman
Weija Lake
TEMA
Nungua
Teshie
Labadi
Osu
ACCRA
Gulf of Guinea
0
10 KM

Fig 4.
Accra Planning and Development Programme 15

(c) The Establishment of Accra as the Capital City

The decision by the British government in 1877 to relocate the capital of the Gold Coast from Cape Coast to Accra was one of the most important factors in the history of the city. The shift in location of the colonial administration centre meant most of the activities supporting the government also relocated. Thus trade, transport and warehousing, which were the main thrust of the country's development, became headquartered in Accra. If the capital had not been relocated, Accra would be much smaller than it is today. Its role as the centre of government is one of the most powerful driving forces behind its development.

4.2.2 Urban Structure and Land Use

(a) Metropolitan Structure and Form

The structure and form of the metropolitan area has been shaped by events in its history, transportation network, land acquisition, commerce, industrial investment, infrastructure, development of Tema township and implementation of town planning schemes. These factors are discussed below.

(i) Transportation Network

The regional traffic routes along the Aburi-Dodowa, Accra-Tema, Nsawam and Winneba roads have had a major impact on the physical form of the metropolitan area. The city has developed in stages along these road corridors. Development has not been uniform and many factors have influenced both the rate and form of development along each corridor. For example, the Aburi corridor which commences from Independence Avenue leading to the airport, University of Ghana at Legon, Madina and thence to Aburi is a ceremonial route. The Nsawam corridor which commences at Nkrumah Avenue is a commercial and service industry corridor with intense development along many parts of the route within the urban area. The major road network, and the lateral roads such as the inner ring road and motorway have had a major influence on the structure of the city.

(ii) Land Acquisition

As the city expanded, large areas of land were purchased and acquired between the main traffic routes for urban development by Government . The city, until the 1939 earthquake, developed in a concentric manner, but the rehousing of a substantial number of homeless people on land acquired in Korle Gonno started a pattern of acquisitions that accelerated the development of the city in a westerly direction between the Winneba road and the coast. A similar thrust occurred later with large acquisitions in the Ridge, Cantonments and Airport areas. Government was primarily instigating the development process until the early 1970s mainly because of the disputes among traditional landowners and lack of capital for development. Since government has withdrawn from the role of principal developer, the development pattern between the road corridors has become erratic and haphazard.

(iii) Commerce and Industrial Investment

The development of the port at Accra had a major influence on the landuse pattern in the CBD. The port was surrounded by an extensive warehousing and loading zone. The railway siding area was the principal transfer centre for the transportation of imports and exports to the rest of the country. With the development of the port of Tema most of the functions of the port were relocated. The port, however, was the catalyst for the development of the Central Business District (CBD). The CBD had a well defined structure with a large number of trading and business houses. The High Street and Nkrumah Avenue contained most of the country's major department stores and business headquarters. Kojo Thompson road and the area surrounding the old Selwyn Market developed as the small merchant and trading areas.

The CBD has dominated the pattern of commercial development in the city. This has been due partly to the poorly developed inter city transport system which has in turn restricted the opportunity for decentralization of business activities. The entire transportation system is centrally orientated because the lateral and orbital links in the road system are poorly developed or missing. As a result passengers travelling from one part of the city to another, often take the opportunity to do business in the CBD. While this strengthens the role of the CBD it also creates unnecessary congestion. While the CBD could easily satisfy the day to day business needs of the population in the 1960s it cannot continue to accommodate the day to day needs of the metropolitan population in the 1990s.

Industrial development also had an influence on the structure of the city. All major industrial areas have been planned and this had a major impact on large scale industrial investment and subsequent employment. The industrial areas have had a significant influence on the location of supporting service industries and informal sector business activity - especially around the periphery of the industrial area.

(iv) Infrastructure

The provision of infrastructure services influenced the property market and development pattern. It has been less influential in stimulating the development process than would be expected. Most areas with good infrastructure services are well designed with generous plot sizes, better quality housing and environmental conditions. Areas without adequate infrastructure within the inner city are dense, with poor housing and environmental conditions. Upgrading of infrastructure services has in some cases improved the environment and to a small extent created a more defined structure. Most of these improvements are micro scale changes but incrementally they will lead to changes in the overall structure of the inner city area.

(v) Drainage

The six principal drainage basins in the Metropolitan area determined to a large extent the structure and shape of the metropolis. These have influenced the location of various land uses, human activities and open spaces. The basins will exert further influence on the structure because of the need to prevent flooding along the basins.

(vi) Tema Township

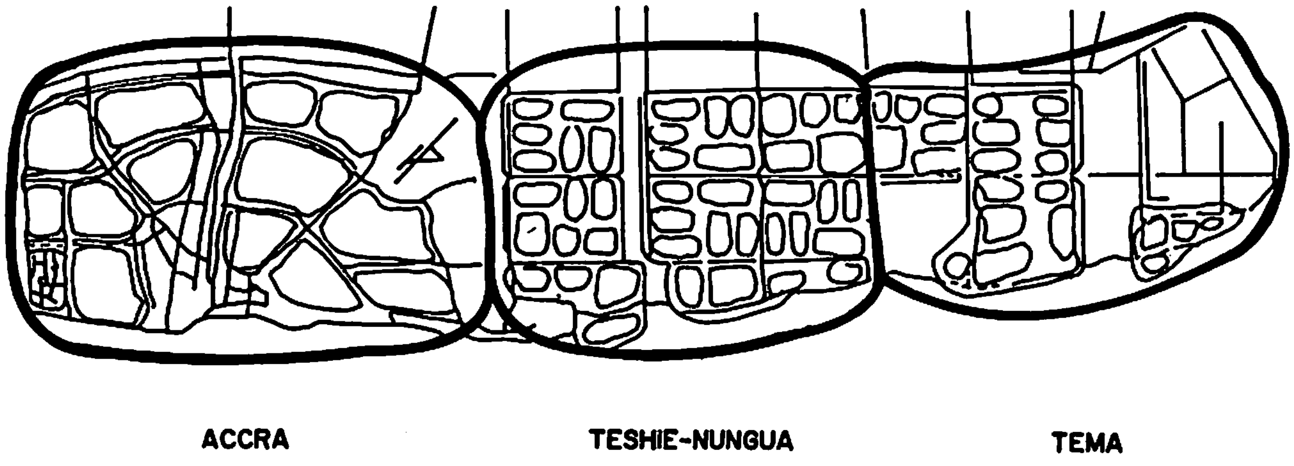
The construction of the port with a new town and a number of large scale industries at Tema has brought about the most significant change in the structure of the metropolitan area. It changed many of the functions of Accra and created a competitive growth centre. Unlike Accra, the plan for Tema has been followed. The structure and form of Tema has a well defined urban pattern - although important links with the Accra road network still have to be constructed. The creation of Tema provided fresh opportunities for investment, especially in industry which has been the driving force behind the city's rapid development. The two development pole metropolitan structure is in place and the objectives of the 1961 Master Plan to promote a development corridor between the two cities is well under way to being achieved.

(vii) Town Planning Schemes

The first town plan for Accra was prepared in 1944, followed by a more comprehensive plan in 1958, which provided an overall framework for the development of Accra. Only a few elements of that plan have been implemented and urban development has continued to spread beyond the plan boundaries in an uncontrolled manner. In 1961 a Master Plan for Accra-Tema metropolitan area was prepared by Doxiadis Associates, aiming at formally merging Accra and Tema with a third centre at Nungua and an industrial belt along the motorway *(see fig 4.3)*. Currently, there are over 100 area planning schemes covering different parts of the metropolitan area. By and large planning and development controls (with the exception of Tema Township, and some government housing projects) have been ineffective and have not had a major influence on the structure and form of the metropolitan area.

(b) Existing Land Use

The area of GAMA is approximately 152,000 ha. The major part of urban development falls within semi-circular area bounded by the district boundary of Accra from Mokwe Lagoon in the east up to the railwa track near Ofankor and then following the hills downward to the Densu river. Within this area are locate



ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPT
Ministry Of Local Government

Title

CONCEPTUAL PLAN
OF THE ACCRA-TEMA
METROPOLITAN AREA

Source
DOXIADIS ASSOCIATES 1961

Date 1991
Drafting

Plan No
Approved by

Fig 4.3

major vacant lands where considerable future development will take place giving a more consolidated form to urban development. Immediately outside the built up area are scattered developments which continue to join the rural part of the metropolitan area.

The landuse pattern of the metropolitan area has been shaped by many factors, some of which are the function of the area as an administrative, business, commercial and industrial centre, land ownership and its administration as well as development control and implementation of planning schemes. One other contributing factor to haphazard and fragmented development is the availability of land and the many indigenous settlements around which physical development has taken place. The existing landuse plan *(Fig. 4.4)* represents the distribution of the various zones in the metropolitan area, and the network of transport routes connecting them.

The population of GAMA in 1990 was estimated at 1.7 million people, 85% of which reside in the urban area and 15% in the rural areas. A total of 41,120 ha is occupied by 1,445,000 people in the urban area. This gives an overall population density of 35 persons per hectare of developed land.

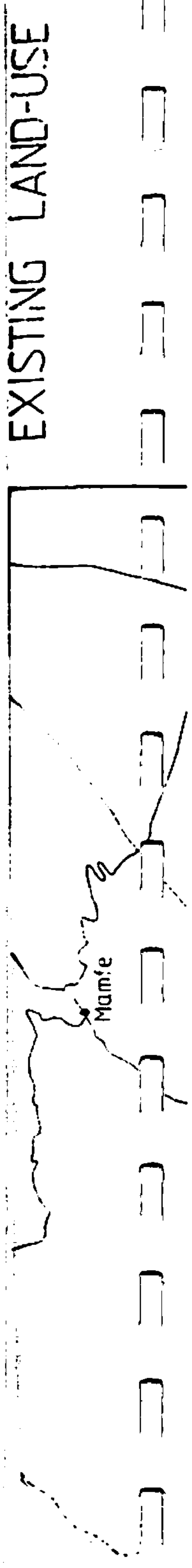
Table 4.5 Land Use in GAMA.

Land Use		Hectares	% Res.	% Urban	%Total
Residential	Class I	3,330	13		
	Class II	6,930	26		
	Class III	5,070	19		
	Class IV	6,400	24		
	Fringe	4,620	18		
Residential Total		26,350	100	64.0	
Commercial		1650		4.0	
Civic and Cultural		130		0.3	
Institutional/Special Uses		4,280		10.5	
Industrial		2,690		6.6	
Defence		1,640		3.9	
Transport facilities		1,460		3.6	
Major Roads		920		2.2	
Open Space		2,000		4.9	
Urban Total		41,120		100.0	27.1
Rural Total		110,880			72.9
Total		152,000			100.0

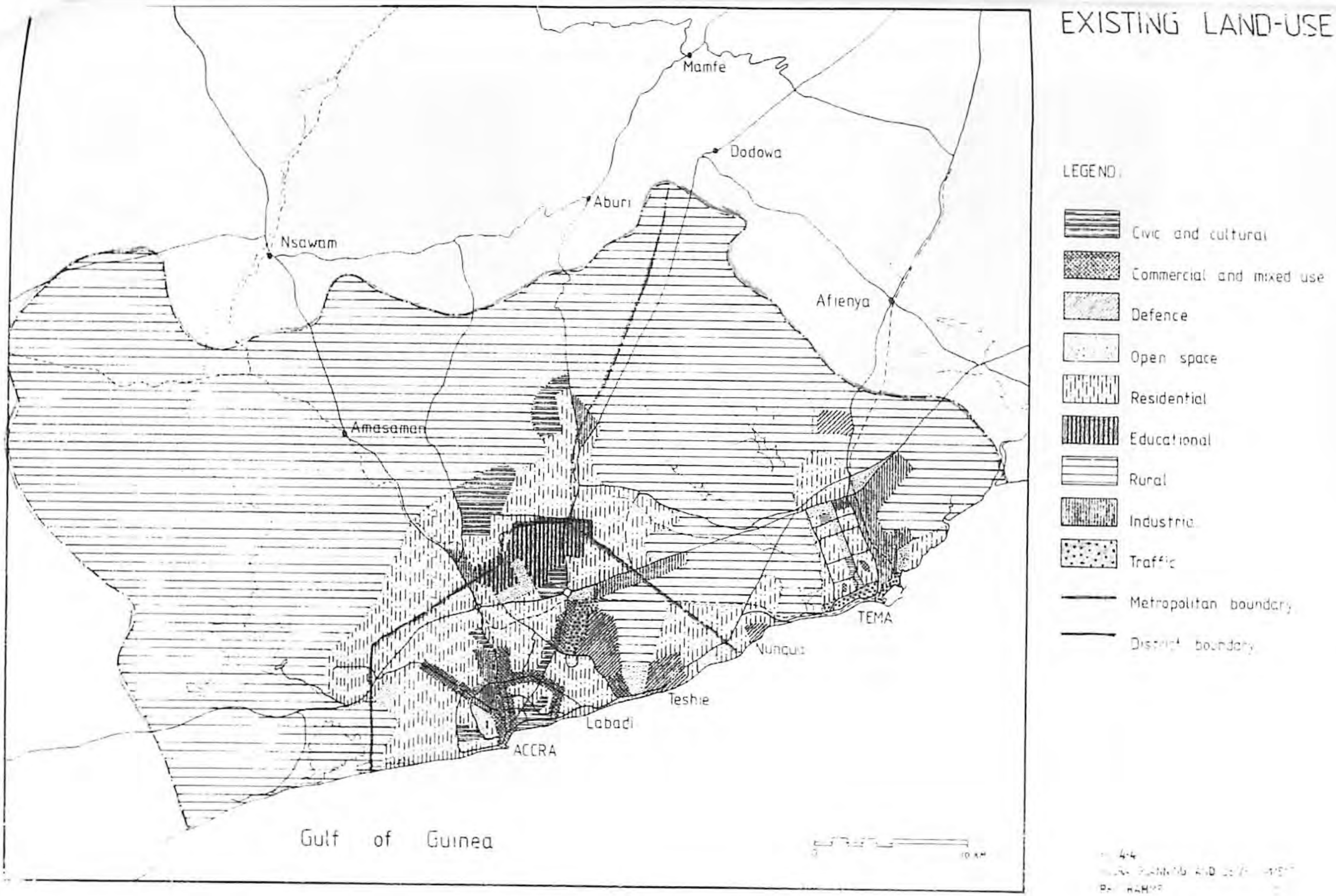
Source: Accra Planning and Development Programme (1990)

The estimated area as shown in Table 4.5 include zoned space fully developed and others under various schemes which are partially developed. The area under residential use is about 64.0%. This figure als embraces other uses like schools, small scale commercial and industrial uses, minor roads and drainag basins.

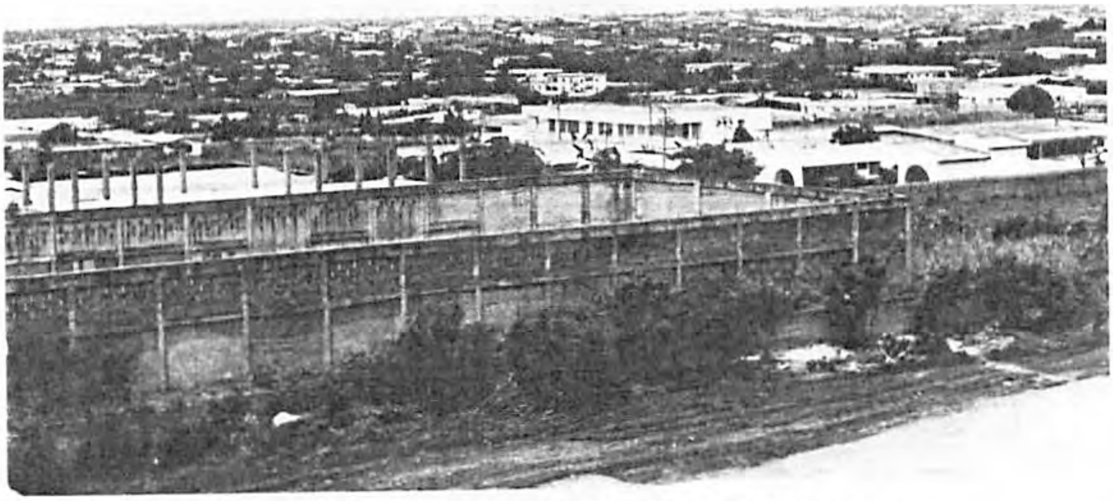
Institutional and special uses refer to Health, Education and emergency services. All these take up 10.5% o the urban land. Health facilities include Korle Bu, Ridge, 37 Military and Police Hospitals; education faciliti include University of Ghana, Achimota, Greenhill and the Secondary Schools located in Accra. The elemen



EXISTING LAND-USE


Mamfe
Dodowa
Aburi
Nsawam
Afienya
Amasaman
Nungua
TEMA
Teshie
Labadi
ACCRA
Gulf of Guinea
0
10 KM
LEGEND:
▤ Civic and cultural
▩ Commercial and mixed use
▨ Defence
░ Open space
▥ Residential
▥ Educational
▤ Rural
▩ Industrial
░ Traffic
Metropolitan boundary
District boundary

4.4
URBAN PLANNING AND DEVELOPMENT
PROGRAMME



SCATTERD DEVELOPMENT ON THE URBAN FRINGE

KWAME NKRUMAH CONFERENCE CENTRE AND THE SURROUNDINGS

NCR
K.C. LIMITED
STRACO

COMMERCIAL DEVELOPMENT ALONG KWAME NKRUMAH AVENUE

KWAME NKRUMAH CIRCLE

URBAN DEVELOPMENT

NEW HOUSING - FLATS AT SAKUMONO

INDUSTRIAL BUILDING AT TEMA

URBAN DEVELOPMENT

tary schools are considered under residential uses. Emergency services include fire service and police stations.

Industry which is the third largest land use with 6.6% covers mainly the established industrial areas at the Ring Road West/North Kaneshie, northern outskirts along the Nsawam road, the South Motorway industrial zone and the Tema industrial area. Civic and Cultural comprises mainly the Ministerial area around Victoriaborg, libraries and museums. These take up 0.3%.

Commercial activities mainly in the central area, around the Kaneshie market and Tema Centre take up 3.4%, however other small commercial activities take place along all the major roads which are not included in this figure. Open space and green areas take up 2,000 ha or 4.8% of the total area. These comprise wooded green areas, lagoons, water courses, small parks and gardens outside houses.

The percentage of area under road is significantly low only 3.5%. This is because only the major roads were considered. All minor roads were considered under residential use.

(i) Accra Central Business District

The Accra Central Business District *(Fig. 4.5)* is defined to be the area bounded by the Ring Road and the sea. It contains the main commercial centre and the ministerial area which accommodates public offices. The area is a complex development embracing various commercial, administrative, social and recreational activities in combination with high density indigenous residential areas as well as low density old residential areas. It contains some of the largest traditional markets in the metropolitan area.

The CBD of Accra requires special attention because the area which comprises less than 5 percent of the land coverage of Accra city contains majority of all the professional, commercial, industrial, social, government and recreational activities which attract people not only from the Metropolitan Area but from all over the country which makes the area the focal point of the transport system.

The CBD of Accra has gone through a lot of deterioration. Lack of planning control and enforcement measures have resulted in incompatible landuses giving rise to severe traffic congestion, overtaxing of engineering services and deplorable environmental conditions.

Attempts have been made in the past to co-ordinate development and upgrade the CBD without much success. There has been no review of the 1958 Master Plan which covered the development of the central area. A traffic management plan has been prepared - but this did not address future changes in land use in the CBD or explore alternative non engineering approaches to lessening the problems of traffic congestion. The Accra Metropolitan Assembly does not have the resources or expertise to prepare an overall plan to guide redevelopment and investment in this area.

The growth in the metropolitan area over the next twenty years will increase activity in the CBD. However, the decline in the level of services in this area requires measures to be taken to protect existing investment from further deterioration. A plan is required to determine the land use structure of the CBD and the infrastructure required to service it. The plan should include funding for its execution, and incentives to attract the corporate sector to invest in redevelopment and urban renewal schemes. Unless the CBD is rejuvenated, the city will never be able to generate the revenue it requires to pay for the services and the improvements it needs.

LAND USE IN THE CBD

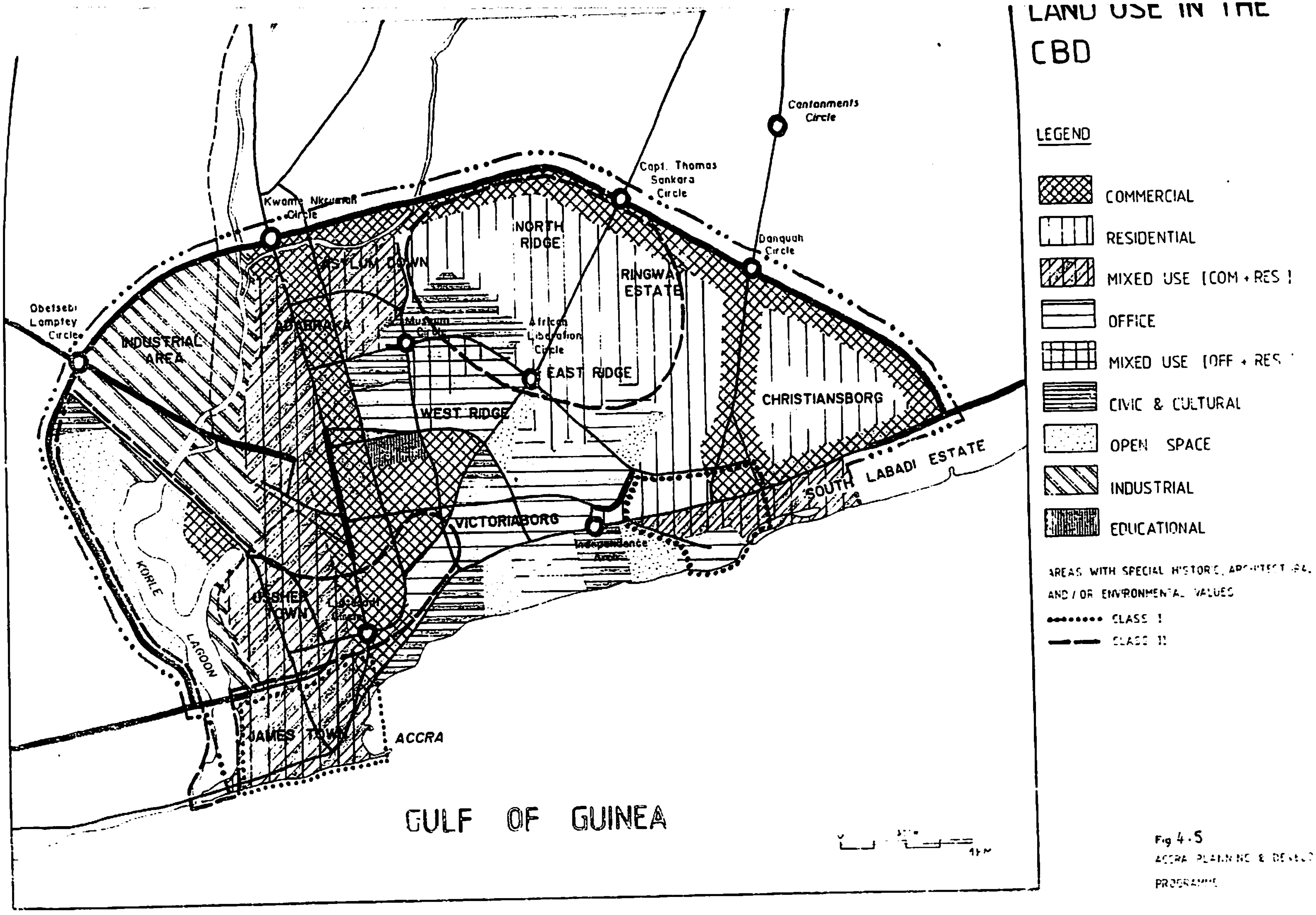

LEGEND
COMMERCIAL
RESIDENTIAL
MIXED USE (COM + RES)
OFFICE
MIXED USE (OFF + RES
CIVIC & CULTURAL
OPEN SPACE
INDUSTRIAL
EDUCATIONAL
AREAS WITH SPECIAL HISTORIC, ARCHITECTURAL AND / OR ENVIRONMENTAL VALUES
CLASS I
CLASS II
Cantonments Circle
Capt. Thomas Sankara Circle
Kwame Nkrumah Circle
Danquah Circle
Obetsebi Lamptey Circle
Museum Circle
African Liberation Circle
NORTH RIDGE
RINGWAY ESTATE
ASYLUM DOWN
ADABRAKA
INDUSTRIAL AREA
EAST RIDGE
WEST RIDGE
CHRISTIANSBORG
SOUTH LABADI ESTATE
VICTORIABORG
Independence Arch
KORLE LAGOON
USSHER TOWN
Lagoon Circle
JAMES TOWN
ACCRA
GULF OF GUINEA
0
1 KM

Fig 4.5
ACCRA PLANNING & DEVELOPMENT PROGRAMME

ENTRANCE TO MAIN LORRY PARK - TUDU

INTER-CITY LORRY PARK NEAR NOVOTEL

CBD

COMMERCIAL STREET - PEDESTRIAN TAKING OVER STREET

PEDESTRIAN PAVEMENT ALONG KWAME NKRUMAH AVENUE

CBD

Table 4.6 Proportion of Business Activities in the CBD

Business Activity	Total No. of Enterprises	CBD	% in CBD
Retail Stores & Stalls	4,165	1,846	44.3
Wholesale and Distributors	359	172	47.9
Transportation Services	1,002	222	22.7
Finance and Insurance	383	203	53.0
Professional Services	548	259	47.2
Consumer and Personal Services	2,441	522	21.3
Government and Utility Services	355	173	48.7
Markets	22	2	32.0
Recreation and Services	145	46	31.7
Service Industries	916	238	25.9
Welfare and social Services	535	130	24.3
Light Industry	248	63	25.4
Total	11,119	3,876	34

Source: Study on Subregional Business Centres 1991

(ii) Tema Town Centre

The 1961 Master Plan for Tema made detailed proposals for a 63 ha town centre north of the new port. The plan made provision for administration and commercial offices, a cultural centre, shops, a transportation centre - including a rail terminal, warehousing, hotels and apartment buildings. The centre was to service a population of over 300,000. At the time it was recognized that it would take some time to construct the town centre and that provision should be made for a small shopping centre 1 km north of the town centre in Community 1. Several stores, commercial and financial services and a small market were constructed. Several office blocks and a hotel located on the Greenwich meridian were constructed. The latter is now used for office accommodation.

The Tema Town Centre has been very slow to develop and many of the proposals included in the plan at the time were too ambitious. The failure of Tema Development Corporation to curb the development of Community 1 shopping area has resulted in a very heavily congested centre. Surveys carried out for the study on subregional business centres indicate that between 2% and 3% of expenditure on consumable produce and products in the metropolitan area goes to Tema. On a population prorata basis, Tema contributed to about 15.5% of consumable expenditure in GAMA. There is, therefore, a substantial loss of expenditure to Accra CBD partly because Tema does not have a sufficient range of business activities, it is congested and many people living in Tema, but working in Accra, purchase their daily consumable items near their place of employment.

The failure of Tema Town Centre to develop into a strong competitor centre to Accra can be attributed to various factors. Many of the underlying assumptions on the development of Tema have changed and there is, for some reason, a negative attitude or lack of confidence towards investment in the Town Centre. The reasons for this should be investigated and a strategy devised to stimulate its development into a major subregional business centre. The results of the investigation may require a review of the plan for the town centre.

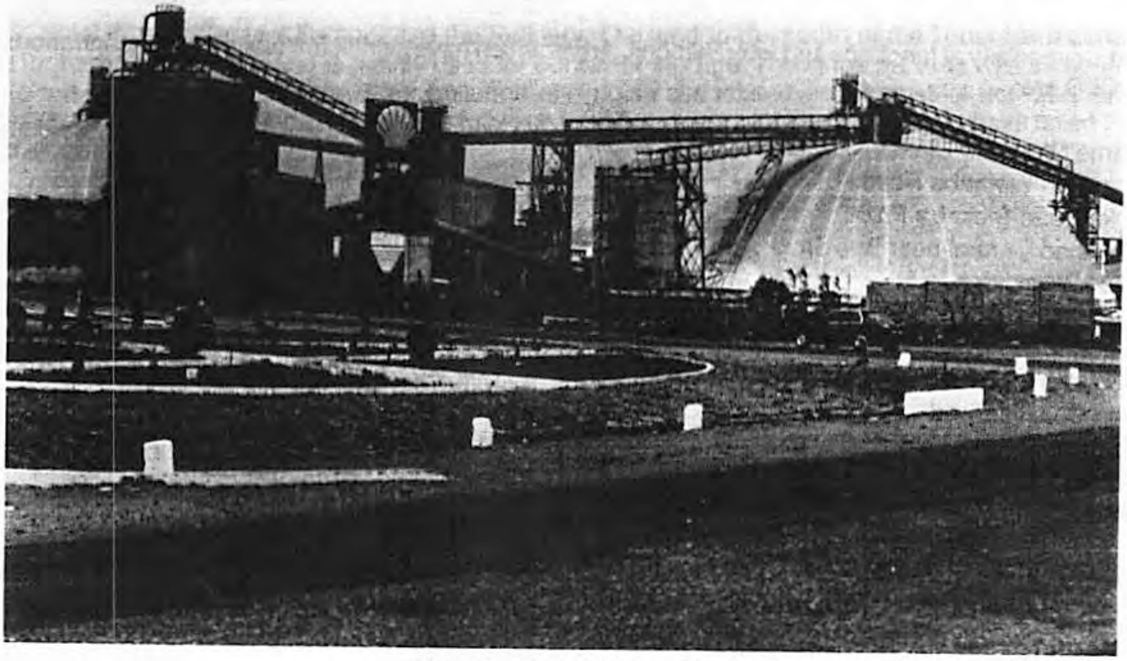
(iiii) Business Centres and Markets

Unlike the Accra CBD and Tema Town Centre, where business activities are well defined, business activities in the areas outside the CBD are scattered. Commercial activities have developed along most of the main

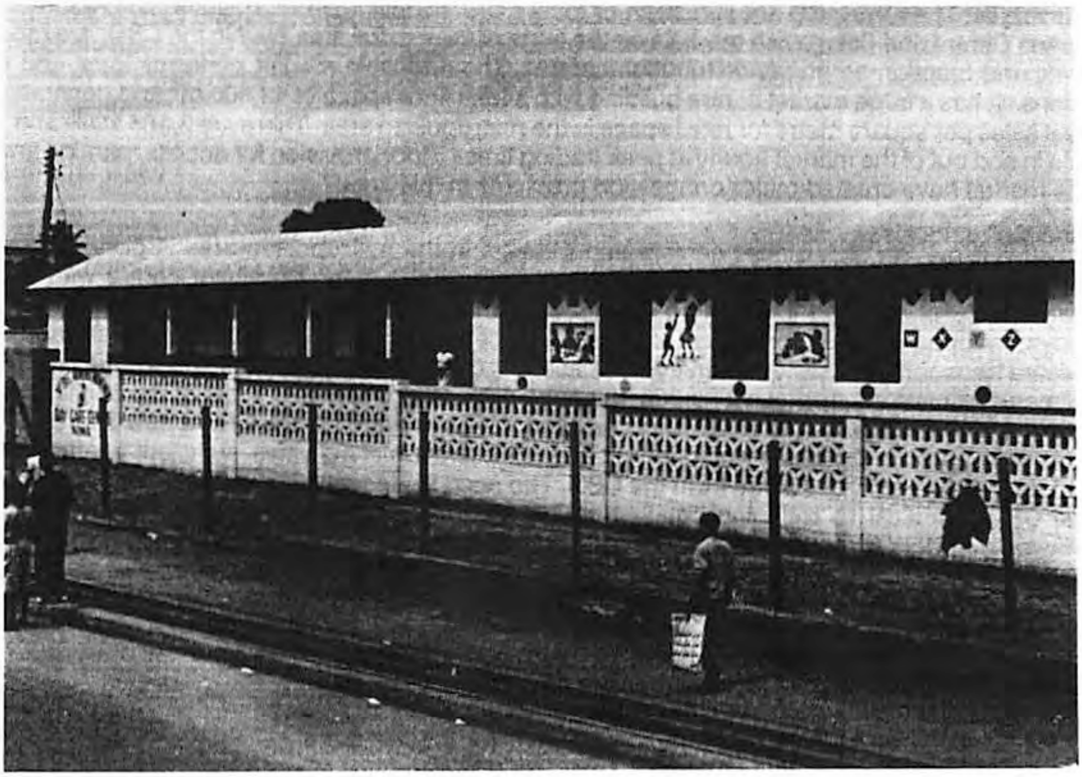
MARKET SCENE

PORT OF TEMA

TEMA TOWNSCAPE



INDUSTRIAL BUILDING



SCHOOL BUILDINGS

TEMA TOWNSCAPE

roads, especially at junctions and intersections. Areas which have significant business concentrations outside the CBD are:

Kwame Nkrumah Circle- Nsawam Road
Kaneshie - Winneba Road
Abeka Road (near La-Paz)
Ring Road Central near Bus Stop
Nima Highway
New Town Road
Labadi Road
Guggisberg Avenue
Tema Coastal Road
Ashaiman
Madina
Cantonments Road

These centres generally accommodate retail shops, supermarkets, pharmacies, banks and forex bureaux and restaurants. Many are also close to local markets and transport terminals. Because the centres are unplanned, traffic congestion and waste disposal create problems.

In addition to the business centres there are 24 markets in Accra (16 outside the CBD) seven (7) in Tema and three (3) in Ga district. Only Kaneshie, Mallam Atta and Tema market deal in both manufactured goods and consumables. The remaining are suburban or local markets dealing in food stuffs. The Amamomo, Timber, Yam, Arts Centre and Salaga fish markets on the edge of the central area (within the CBD) are more specialist markets and function as goods distribution centres. The Kaneshie market performs local and subregional functions. It has a large market centre building with a total floor space of 43,000 m^2 and generates one of the highest sales per square metre for retail space in the metropolitan area. There are 3,365 stalls and over 25,000 people in and out of the market hourly at peak trading times. Poor provision for access, parking and unloading for the market have created major congestion problems in this area.

The overall provision of business centres and markets in the metropolitan area is poor. There is no clear hierarchy of business and market centres in Accra. The CBD is the dominant centre with traffic surveys indicating 74% of person trips starting or finishing in the CBD. The reasons for this relate to the lack of employment opportunities, convenient retail and service industries in outer suburban areas and the centrally orientated transportation system. Surveys indicate 75% of informal sector employment, such as petty traders, craftsmen and hawkers (representing 300,000 people) use the CBD daily. Most of the services provided are day to day convenience items. These services need not be provided in the CBD if new subregional business centres were established which would attract an agglomeration of activities, sufficient to attract informal and day to day trading activities away from the CBD. The need to decentralize many of the day to day functions of the CBD is critical to reducing congestion in this area, but more significantly to provide more local employment opportunities, thereby reducing travel times, energy costs and demands on the public transport system.

(iv) Industrial Land Use

Accra's industrial uses are concentrated in three areas: the Ring Road West Industrial Area, the northern outskirts industrial sector along the Accra-Nsawam road and the south Motorway Industrial Zone. There are small pockets of industries near Dzorwulu, Labadi and Odaw. Most of the inner city industrial areas are fully developed but there is a substantial number of vacant plots on the south motorway estate. There has been no overall grouping of industry into general, service, toxic or hazardous zones. This has unfortunately led to cases of incompatability between industrial land uses. Stricter zoning control should be applied to use classification.

In Tema, over 2,000 ha of land to the east and south of the main residential area is allocated as the main industrial zone. These areas contain the largest manufacturing industries in Ghana including Volta Aluminium

Company, Steel Works, Cement Factory and the Refinery. The land to the south of the Tema town centre is set aside for harbour functions and is mainly used for container storage. The industrial area was strategically located to avoid the adverse effects of air pollution and noise associated with industrial activities on the residential areas. Most of the industrial area is fully serviced but many of the access roads have fallen into a state of disrepair.

(v) Transportation

The actual space given over to roads and transportation terminals is not easily calculated as many are not demarcated on the ground and there is no uniformity in the right of way in the tertiary road network. The Airport is the largest single transportation terminal in the metropolitan area, followed by the port at Tema. The Accra central railway station and Tema are the only railway terminals. There are a large number of trotro, bus and taxi terminals throughout the city. The principal stations are:

Nkrumah Circle
Neoplan Station
Tema Station
Central Railway Station
Omnibus
Novotel
Kaneshie
Central (inter regional services)

At most of the major road intersections there are transfer points for more localized travel. Most bus and taxi stations are poorly developed adding to congestion around intersections. Most residential areas have small taxi stations many of which have very poor access. Issues affecting the transportation system are discussed in detail in Chapter 5.

(vi) Institutional Uses

The demand for institutional space in the metropolitan area is high as Accra serves national, regional and metropolitan interests. The CBD has a substantial area of land utilized for institutional purposes such as the seat of government, courts, ministries, state corporations and local government. Most of these are located in the Ministries area and along the High Street. Police, military, education and health facilities are scattered throughout the metropolitan area, with the largest institutions sited in and around the CBD and at the University of Ghana, Legon. Large areas of land are held by institutions like State Housing Corporation, the Military, Atomic Energy Commission and the University. Much of this land is either vacant or underutilized.

(vii) Open Space and Green Areas

Open spaces and green areas of various sizes are widely scattered and are 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 for refuse dumping such as the space along the Korle Lagoon at Korle-Gonno. All open areas comprising hills, ridges and reserves, together with river corridors, lagoons and foreshores within the metropolitan area should be protected and remain free of intensive development. They can also be used for water storage, flood protection, recreation and low intensity institutional or public uses.

4.2.3 Issues Affecting the Preparation of the Structure Plan

In preparing the structure plan for GAMA there are a number of planning issues which must be taken into consideration at the formulation stage. A number of these impose constraints on planning options. Factors which will have a particular influence on the future form of development in the metropolitan area are discussed below. Some of these are extensive issues which have been addressed elsewhere in this volume.

(a) Landuse Constraints

The drainage systems and wetlands are the most dominant features shaping the present and future development of GAMA. The study area is crossed by numerous rivers and streams flowing north- south with their outlets either into the lagoons or the sea. These features create natural boundaries between different development areas. Large parts of the metropolitan area are flood prone and further encroachment on these areas should be stopped - although reclamation of some low lying areas may be possible. Most of the coastline is eroding and development close to the seashore should be restricted.

The north-west hills and ridges starting at the coast west of the Densu River Delta and extending to the north-east to Dodowa and beyond impose a physical constraint upon development. Development upon these will create severe erosion problems and lead to downstream flooding. Development costs will also be expensive. There are 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 necessary to avoid these being polluted.

(b) Infrastructure Services

The existing transport system in the metropolitan area is a dominant structural feature. The road network in Accra currently has limited capacity to absorb increased vehicle numbers. Without some form of mass transit system and improvements to the network, the transportation system will become choked and economic development constrained. Similarly, the limited capacity to meet the demand for other engineering services such as water supply, sewerage and drainage, and telecommunications place constraints on urban expansion. These issues are discussed in considerable detail in chapters 5 and 6 on transportation and infrastructure services respectively.

(c) Economic Constraints

The ability to fund development to improve the economic base of GAMA and make it more self sustaining is one of the most significant factors in plan implementation. Major economic constraints include availability of capital, manpower resources, construction capacity, access to land and raw materials. These issues have been discussed in detail in Chapter 3.

(d) Social Constraints

Slowness to respond to social change is a constraint upon the development process. Cultural factors related to timeliness, public health, welfare, housing, energy consumption, savings and purchasing habits have a significant impact on the form and rate of development. The ability to manage change from a subsistence agriculture society to a modern industrial society requires improvements to education, information and decision making processes.

(e) Availability of Land

The ability to deliver sufficient land free of encumbrance and with good title is essential to keep the development process going. The availability of land is a major constraint on the development process in Accra. The many problems facing the land delivery system are discussed in Section 4.3 on Land. Developmen is likely to be directed into areas where encumbrances on land are least, however, this may not be the mos economic use of a precious resource. Tackling the issue on how best to use land will have a major impac on the form and location of development in future.

The industrial development strategy also places a heavy demand on land resources. In 1990, industr occupied 2690 hectares of land in GAMA. The future requirements estimated are an additional 4290 hectare by the year 2000 with a further 4100 hectares by 2010. These projected demands are based on the strategie aimed at achieving higher growth rates for both service and industrial sectors outlined in the economi development section.

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The space requirements for civic and cultural and defence uses are not expected to grow as fast as in other social service activities. However, to meet any possible demand for these uses, provision has been made in the institutional/special use, which should be maintained and protected.

The environmental management strategy requires the development of an open space and recreational area network throughout the metropolitan area linked to the regional open space network. This should be included in the development of the preferred land use plan and in determination of land suitability for urban development. Areas proposed to be designated as green belt or conservation areas are excluded from consideration as possible future urban areas.

(f) Legal and Institutional Framework

The extent to which the metropolitan area has been allowed to develop without effective land use planning and development control raises issues about the ability to manage urban development in future. If the current machinery used to manage urban development is not improved, development will continue uncontrolled and the problems confronting the metropolitan area will become worse and more expensive to solve. The implementation of the 1958 plan for Accra has proceeded slowly because of the weak legal and institutional framework. The physical development strategy for GAMA must address basic legal and institutional issues relating to the management of land development, planning control, construction and operation of the infrastructure services that enable the city to function properly.

(g) Metropolitan Strategy

The development of the metropolitan area will require a substantial increase in land. How best to meet this demand for land is an issue which must be resolved. There are several options, some of which will involve major changes in land administration and management practices, planning policy and a fundamental shift in the traditional way development has been undertaken over the past 30 years. This involves not only how to develop a metropolitan strategy that meets the needs of the population from the very limited resources available - but at the same time satisfies many personal aspiration, improved mobility, access to education and employment will be difficult to balance.

(h) Metropolitan Open Space Network

The need to provide breaks between urban areas is important to give some definition and structure to the metropolitan area. There are a number of opportunities to develop an open space network which will also enable many natural wetland areas to be preserved. The open land lying between Accra and Tema can be utilized for metropolitan scale open space enhanced by recreational, institutional, educational, research, scientific and cultural uses. A significant proportion of this land should be retained as open space and conservation areas for water storage and flood protection. The protection and appropriate size and use of open space areas is an issue requiring much considerations.

(i) Urban Consolidation

Significant opportunities exist for urban development through a process of urban consolidation. This would enable much of the under utilized capacity of services to be used and infrastructure expanded into unserviced inner urban areas at minimum cost. The redevelopment of the older residential areas will necessitate further study. The greatest opportunity for implementing urban consolidation measures in Accra will be in the central area. An increased number of dwelling units in the inner areas and additional commercial floor-space in the CBD would also provide scope for achieving other potential benefits of urban consolidation.

The large military enclave between Accra and Tema forms a barrier to the integration of urban development, but it is also one of the most valuable parcels of land in Accra suitable for urban development. The usefulness of locking up this and other institutional lands has to be examined as they have a profound effect on the cost of urban expansion, accessibility and mobility within communities - especially in the eastern and northern areas of Accra. A major road proposed in the 1958 Master Plan to serve as a central spine between the motorway and coastal road has not been constructed.

There are several low density residential areas in Accra like Cantonments, Ridge and Kanda which offer opportunities for residential redevelopment. On the periphery, there is haphazard development interspersed with large tracts of undeveloped prime land and substantial numbers of uncompleted residential buildings. The full potential of infilling and redevelopment in Accra is estimated at 18,000 housing units, including partially developed plots. The majority of the current housing deficit and the new residential development in the next 10 years could be met by infill development, redevelopment and upgrading.

4.2.4 Future Development Plan

For future development purposes the structure plan has to consider the overall need of land for development in the metropolitan area to the year 2010 and beyond. The total landuse requirements have been calculated on the basis of a population growth rate of 4.4% per annum, which will result in an increase of 2.6 million people by the year 2000, and 4 million by the year 2010. This population growth will place demands on the supply of land for new developments for housing, business, trading, industry, recreation, open space, institutional/special uses and other land uses that make up the urban environment of the metropolitan area. The calculations of land use requirements, as reflected in Table 4.7 have been derived from the various strategies prepared for economic development, urban development, social and community development, and urban management.

The largest land demands in the GAMA arise from housing. Assuming an average gross residential density for new development of 80 persons per hectare, the total area, required for the anticipated scale of growth is up to 42,000 hectares by 2010. However, the land under residential use is 26,350 hectares, therefore a further 15,600 hectares will be required for residential purposes alone.

Table 4.7 Summary of Land Use Requirements

Land Use	Area in Hectares		
	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	12,550
Urban Total	41,120	62,080	81,630
Rural Total	110,880	89,920	70,370
GAMA Total	152,000	152,000	152,000

Source: Accra Planning and Development Programme 1991

4.2.5 Alternative Structure Plan Concepts

Five alternative concepts have been prepared and evaluated for the future development of GAMA. There is sufficient land in the concepts examined to meet the needs of urban expansion in GAMA to 2010 and beyond depending on the concept. The hills, river courses and coastal wetland form natural constraints in all concepts. With the exception of one concept, new urban development is expected to extend out from, or be absorbed within, the existing urban structure. The five concepts considered as realistic options for the future development of the metropolitan area are:

(a) Urban Consolidation
(b) Multi City Structure
(c) Satellite Towns
(d) Twin City Structure
(e) Laissez-Faire

(a) Urban Consolidation

This concept involves the freezing or curtailing of peripherial urban expansion with policies designed to consolidate the existing structure of the urban area by utilising large areas of vacant land and plots, redeveloping selected older low density development areas in the inner city, a programme to complete over 8000 unfinished houses and infilling and upgrading of residential areas (see Figure 4.6). Tema would remain a separate entity with all land south of the motorway being developed at higher densities than proposed in the Master Plan. Expansion of Ashaiman would be constrained.

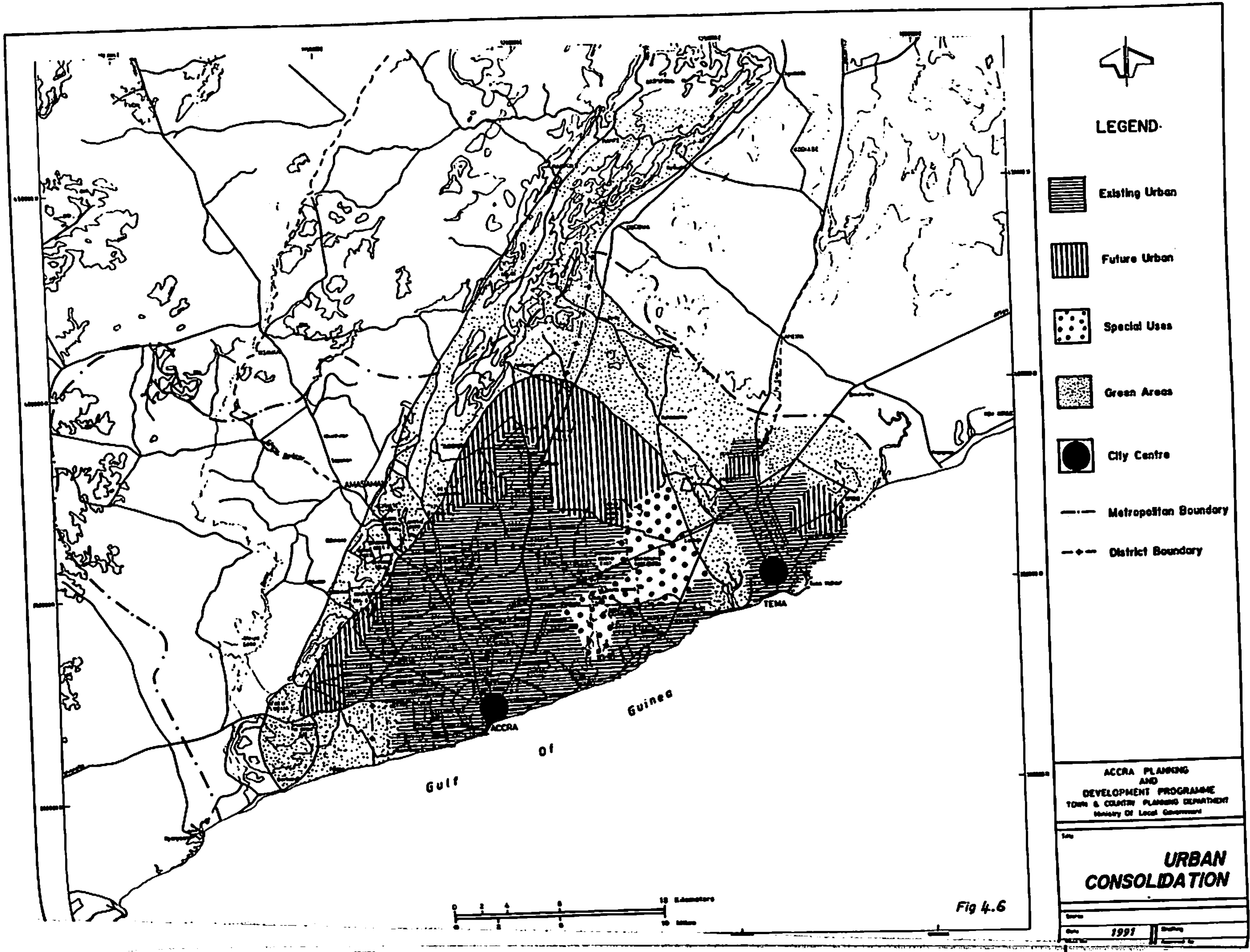
The concept will involve more intensive utilization of land within the urban area and higher residential densities. The concept would result in increased dominance of the CBD and development of other major employment centres within the metropolitan area and urban services. The concept has the advantage of directing investment and other resources into the improvement of existing services rather than extending the existing net work beyond the developed area. Land will be more intensively utilized, public services in established areas will improve, and public transport will be more cost effective. The strategy is economic in terms of resource allocation, capitalization of urban assets, the stimulation of investment and energy consumption.

The strategy has some disadvantages. It may lead to more congestion, overtaxing on some engineering services and environmental problems. Land values and rents will rise unless the demand for land and housing can be met, freedom of choice in living locality will be more restricted, and residents in peripheral urban areas will have to wait much longer for services. The strategy will also require a change in housing policy towards more intensive development such as flats, town houses and duplex dwellings. This may take time to be accepted by developers, home owners and investors. Finally the concept will require a strong development control mechanism and legislation to back it up before it can successfully be implemented.

(b) Multi City Structure

This concept seeks to establish several cities within the metropolitan area, each with its own business centre servicing populations of 250,000 - 350,000 *(see Figure 4.7)*. The city centres would be sited at strategic locations to ensure ease of access and convenience for the population using them. The strategy involves decentralization of business, industry, commerce and retailing from the two established centres of Accra and Tema and establishment of at least four more centres to serve some parts of the present and the future projected urban areas.

The configuration of the concept permits a broadening of the present development pattern that makes it less necessary to develop existing open land, especially in the water courses and wetlands that form part of the open space system. The extensive open space system would provide green areas or buffer zones between the cities within the metropolitan area giving it a more clearly defined structure.


LEGEND
▤ Existing Urban
▥ Future Urban
Special Uses
Green Areas
● City Centre
Metropolitan Boundary
District Boundary
ACCRA
TEMA
AMASAMAN
Gulf of Guinea
0 2 4 6 10 Kilometres
10 Miles

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

URBAN CONSOLIDATION

1991

Fig 4.6

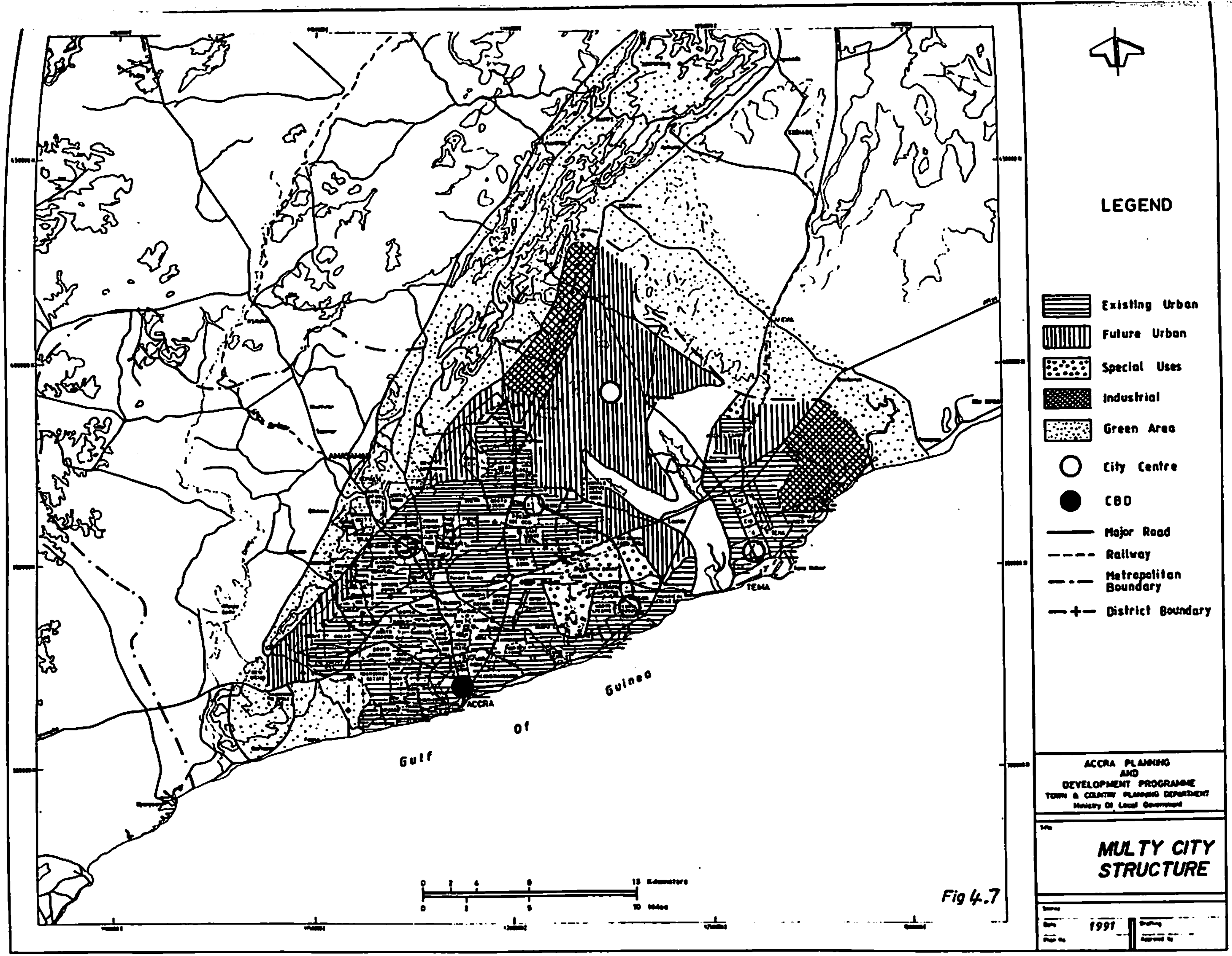


Fig 4.7

LEGEND
▤ Existing Urban
▥ Future Urban
Special Uses
▦ Industrial
Green Area
○ City Centre
● CBD
Major Road
Railway
Metropolitan Boundary
District Boundary
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
MULTY CITY STRUCTURE
1991
ACCRA
TEMA
Gulf Of Guinea
0 2 4 8 12 Kilometers
0 2 5 10 Miles

The advantages of this concept include: Reduction in traffic congestion due to creation of new employment opportunities closer to places of residence, reduction of pressure on urban services in the CBD and the urban population will be better serviced in its day to day consumer needs. Particular advantages would be gained in the transportation system - with improvements in intra - city services and reduced energy consumption. This concept has the disadvantage of job losses in the CBD - especially in the informal sector. Displacement of residents whose income are dependent upon the markets and other passing trade will occur, with many of these having to relocate to the emerging sub city centres.

The major difference between this concept and the urban consolidation is that multi centre development strategy involves a commitment to expanding the role of sub regional centres, and decentralization of functions and employment from the CBD and inner city areas. Higher housing densities would be planned around several nodes, with a network of open space structure between the urban development areas and major centres. The relocation of some of these inner city residents will give rise to pressure on available housing near the new centres. There will also be some resistance from established CBD businesses and market women to relocate, and this will require political and financial initiatives. Finance to develop such large town centres may be difficult to obtain.

(c) Satellite Towns

This strategy restricts urban development to existing urban limits and directs future urban development to potential growth centres within easy commuting distance of Accra. These satellite towns could be located at Dodowa, Amasaman, Kasua, Nyigbenya and Nsawam, etc., all situated on regional routes interconnected with one another. The new towns would each accommodate a population of between 150,000 - 300,000 *(see Figure 4.8)*. This concept is based on a regional solution in which Tema would function as one of the major satellites with its specific function as harbour and its related industrial activities. Accra would remain as the principal business centre for the metropolitan area but with its growth curtailed. The bulk of future employment generating activities would be directed to the satellite towns.

The principal advantage of the concept is that it would provide a fresh start. A better standard of living may be possible for residents living in these satellite towns. The strategy would give rise to a wider distribution of population in the region taking the development pressure off the current urban fringe area. The disadvantages are costs, the dependency on the metropolitan area for employment and services until the populations in the satellites reach a critical level where the towns are self supporting. It will be difficult to enforce a policy of constraint on the existing metropolitan area and the energy costs for commuting during the initial establishment period will be high. Furthermore, the kind of development structure required for this concept would create a very loose metropolitan structure and would require an altogether different system of transport and services.

There would be resistance from established CBD businesses and markets to relocation, or for industry to develop away from its support base within the existing metropolitan area. Political and financial initiatives would be required to attract business and this may require subsidies. The substantial finance needed to develop the satellite towns may be difficult to obtain. In the long-term, however, it may be a realistic option to develop subregional growth poles, but given the current resources of the metropolitan area, the concept is not realistic within the time frame of the plan.

(d) Twin City Structure

This concept was developed as the strategy in the 1961 Master Plan. Accra would provide one centre growth for the metropolitan area and Tema the other *(see Figure 4.9)*. While both cities have developed, th direction of growth has been more to the west and north in Accra than to east towards Tema, as was intende in the plan. Given the constraints on the development of Accra towards the hills, this strategy to merge Acc and Tema could be resurrected.

The concept has the advantage of strengthening the central business areas of Accra and Tema which wou be weakened, to some extent, by strategies involving decentralization. The concept seeks to protect t numerous water courses and major wetlands between Accra and Tema, but would allow some space to

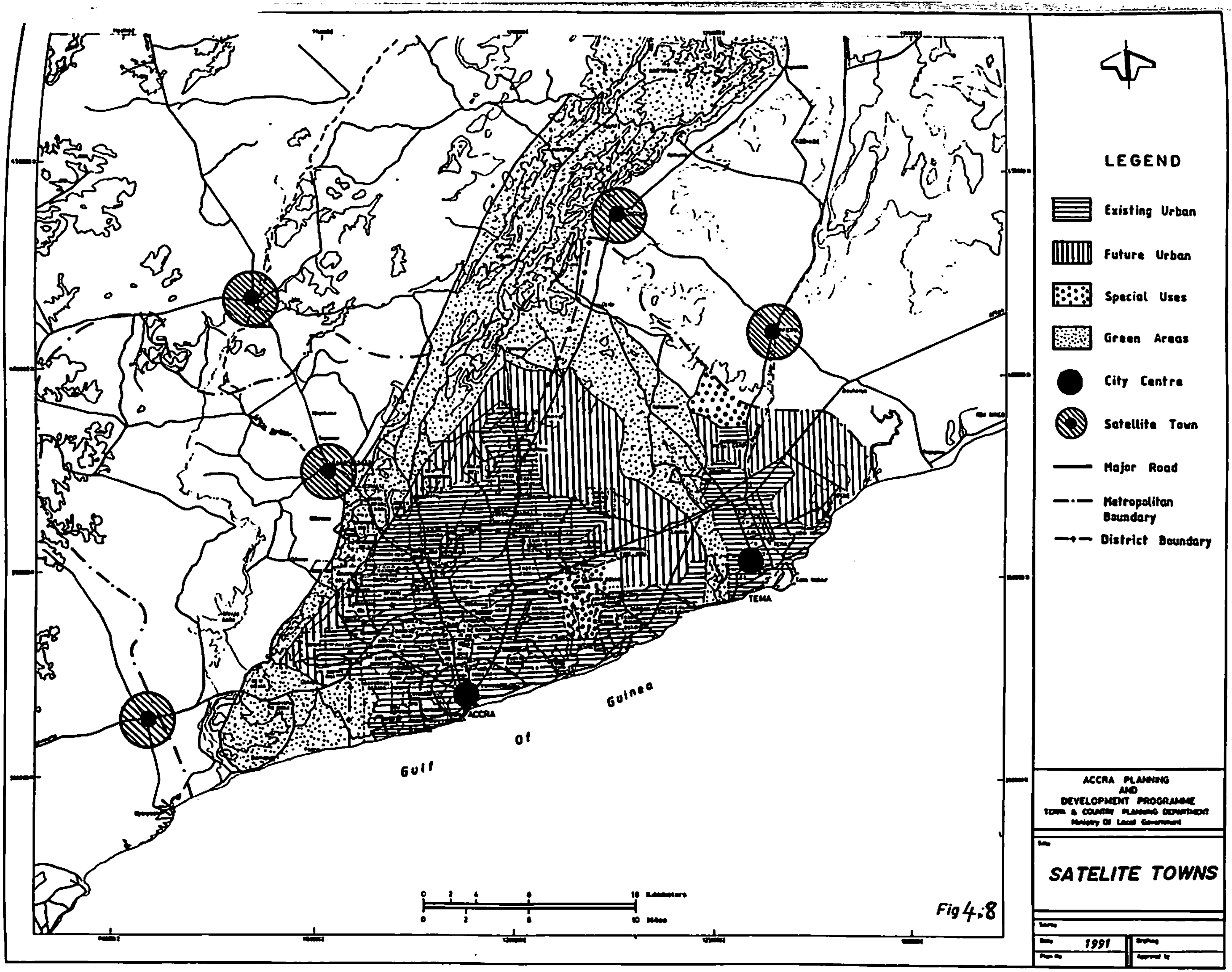
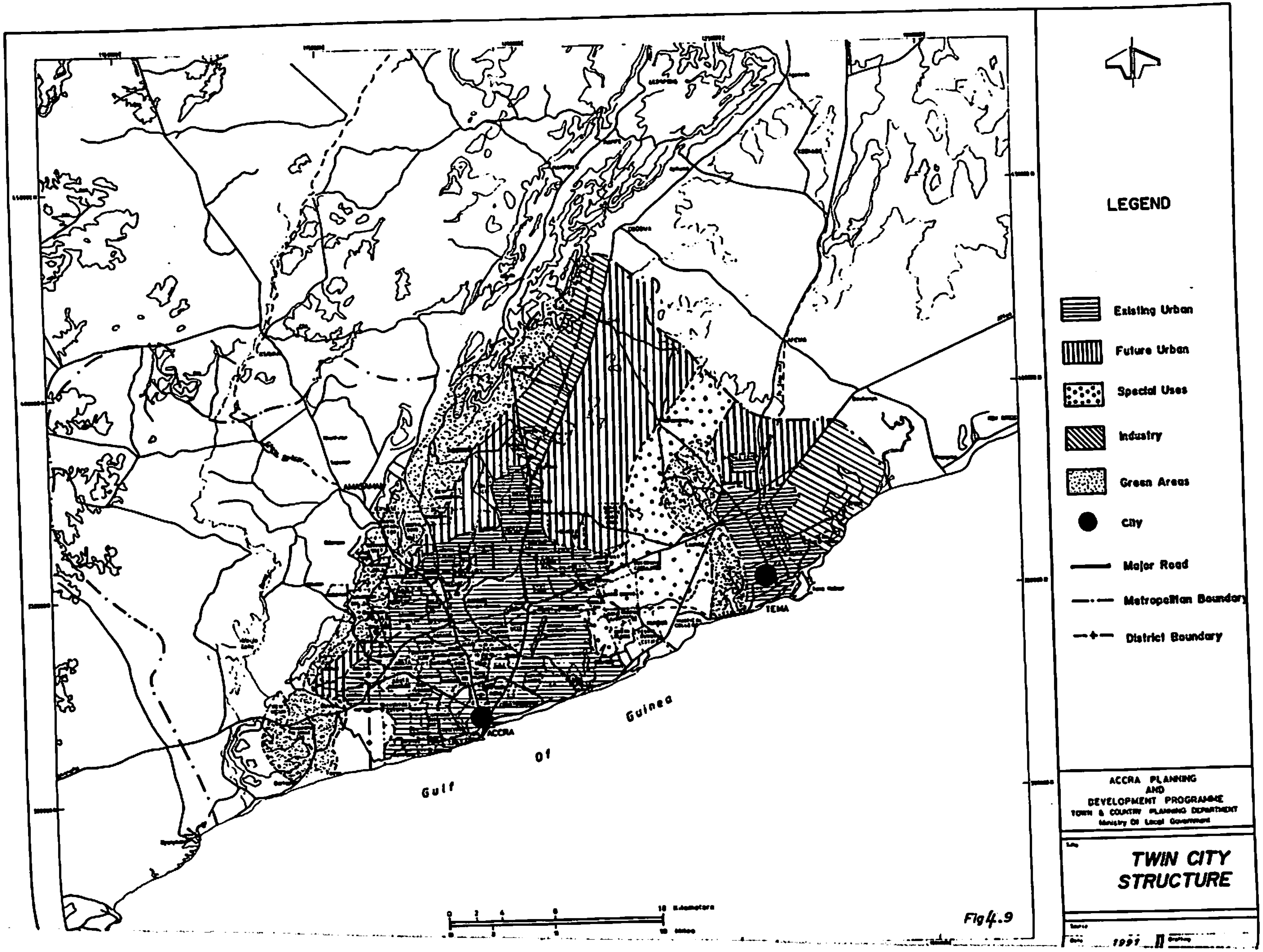

LEGEND
▤ Existing Urban
▥ Future Urban
Special Uses
Green Areas
● City Centre
Satellite Town
Major Road
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
SATELITE TOWNS
1991

Fig 4.8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▨ Industry
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TEMA
Gulf Of Guinea
0 2 4 6 10 Kilometers
10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
1991

TWIN CITY STRUCTURE

Fig 4.9

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utilized for common uses serving the two cities, e.g for metropolitan scale recreation, institutional, education, research, scientific and cultural purposes. Three major transportation corridors would link the two cities, the motorway, coastal route and central spine between the two - as proposed in the 1961 plan. A large industrial area expanding the existing industrial area is proposed east of Tema, and a smaller industrial area would be provided in the triangle formed by Aburi and Dodowa roads. The twin city strategy would also lead to healthy competition for development - although the economic base of each city would be different with specific functions in order to allow a balanced growth. The allocation of functions will be discussed later in the context of the preferred structure.

The disadvantages of the twin city concept are primarily economics and management. There are two assemblies and duplication of effort will continue to arise. Unless there is a mechanism for coordinated planning and development, citizens of Tema would utilize many of the services of Accra without paying for them. This would bring about lower levels of service in Accra, with Accra residents effectively subsidizing services provided to Tema residents.

The strategy is based on balanced metropolitan planning in which development in Accra and Tema will be coordinated and a functional relationship between the two cities established while maintaining their existing functions. The concept proposes to preserve the vast open land between Accra and Tema and utilize it for special uses at metropolitan and national scales.

(e) Laissez Faire

This concept is a continuation of the status quo. The cities of Accra and Tema would continue to expand unrestricted along the regional routes until natural or economic constraints prevent further expansion *(see Figure 4.10)*. The present transport system would have to be upgraded to serve some of the existing urban area as well as new expansion. An outer circumferential road would be needed to enable traffic to move more freely across the city north of the motorway.

The strategy would result in a continued haphazard landuse pattern and the cost to rectify some of the existing urban problems would become more expensive. It would result in development along all regional road corridors as well as infringement upon the major wet land areas where development is undesirable. The development would also encroach upon hills on the north-west side of Accra and encroach into the Weija catchment area. Such development would create erosion leading to down stream floods and siltation of drainage channels. The hills should be reserved for green belt and non urban uses to protect the urban environment from the problems associated with rapid surface water run off.

The Environmental Study of the Accra Metropolitan Area highlighted the poor quality of urban environment. If the present trends are allowed to continue, the situation would deteriorate resulting in even more inefficient use of land, longer delays in the provision of services, higher transport and energy costs due to the poor road conditions and congestion, and a substantial deterioration in living conditions. The only advantages to following a laissez faire strategy are that no change or modification to the present policies or proposals are needed, and development can be carried out with minimal control which may result in cheaper land and a spacious urban form - especially in the newer developed areas. The disadvantages of the concept outweigh the advantages, hence pursuance of this strategy would be unwise.

4.2.6 Proposed Structure Plan

An evaluation was made of each concept to determine a preferred concept which would be developed as the structure (land use) plan for GAMA. The criteria used in the evaluation were environmental and social impacts, transport efficiencies, administrative difficulties, cost effectiveness, flexibility to meet future projected needs, land economics and ability to provide the resources needed to implement the concept. It was clear from the evaluation that no one plan concept would be fully applicable or appropriate for GAMA. As a result, a mixed-concept consisting of urban consolidation, twin city, and multi city structure plan is proposed (see Fig. 4.11). Details of the proposed concept are discussed in Volume II.

Fig 4.10

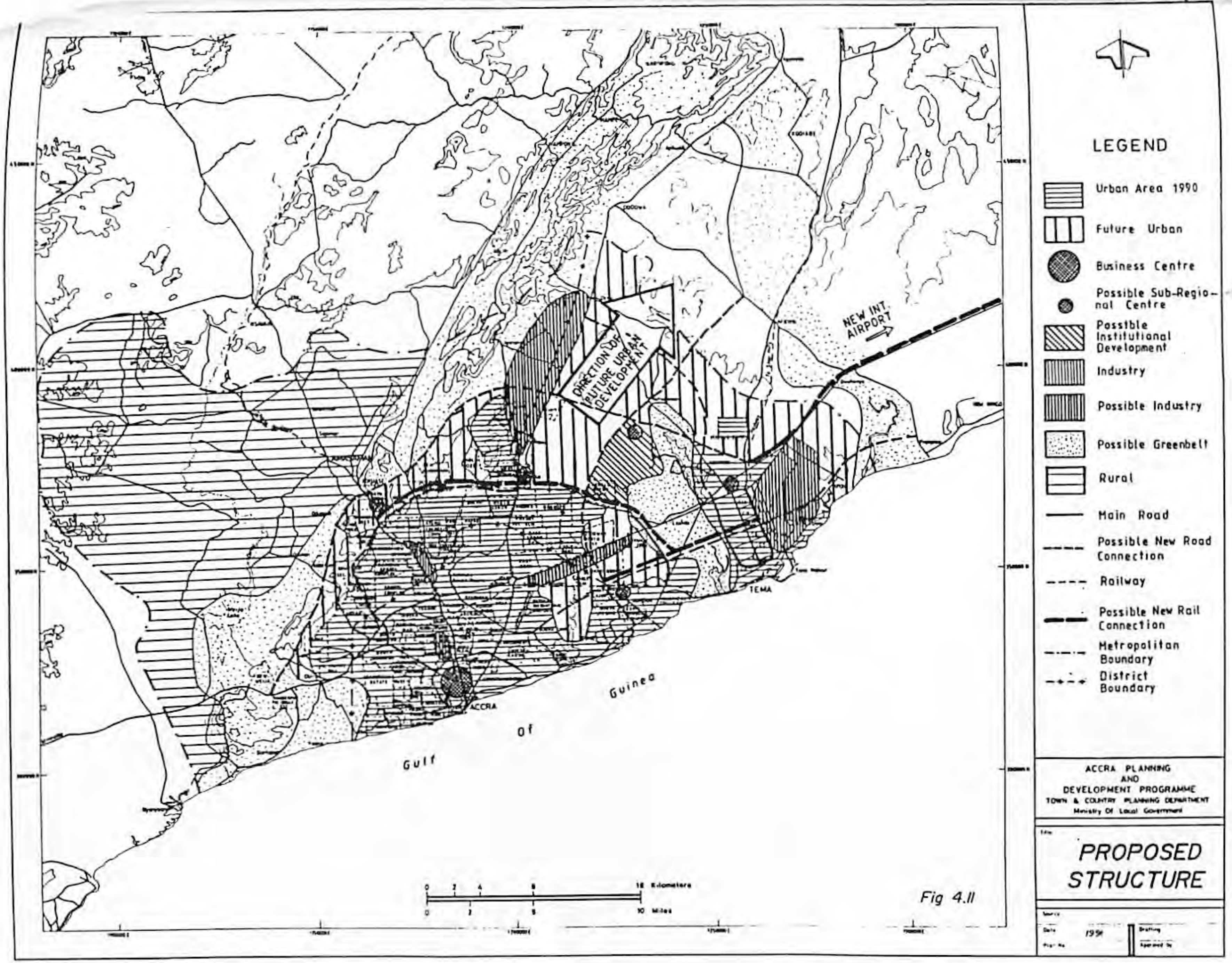


Fig 4.11

LEGEND
Urban Area 1990
Future Urban
Business Centre
Possible Sub-Regional Centre
Possible Institutional Development
Industry
Possible Industry
Possible Greenbelt
Rural
Main Road
Possible New Road Connection
Railway
Possible New Rail Connection
Metropolitan Boundary
District Boundary
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
PROPOSED STRUCTURE
1991
DIRECTION OF FUTURE URBAN DEVELOPMENT
NEW INT. AIRPORT
ACCRA
TEMA
Gulf of Guinea
0 2 4 8 16 Kilometers
0 2 5 10 Miles

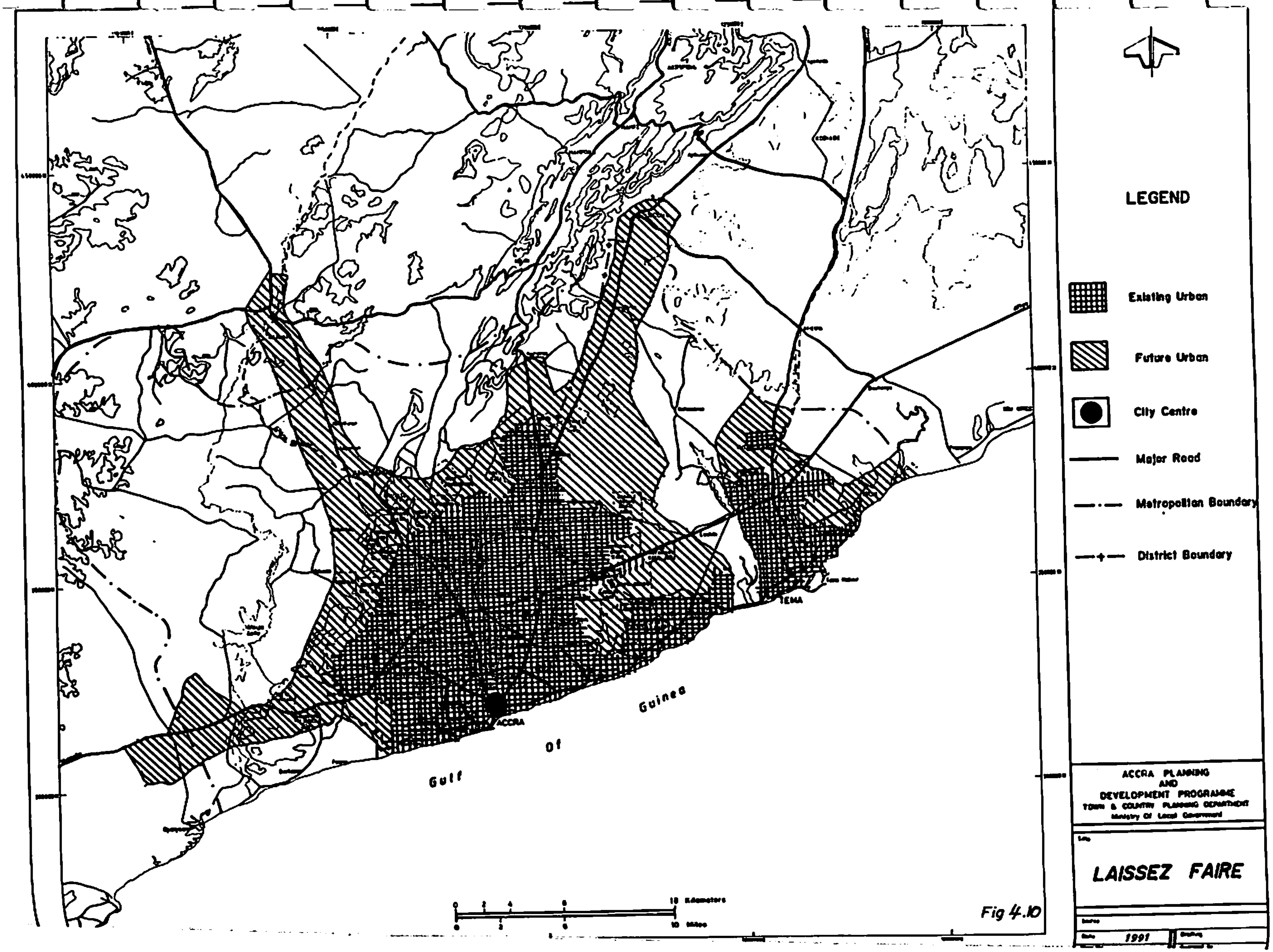

LEGEND
▦ Existing Urban
▨ Future Urban
● City Centre
Major Road
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf Of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
LAISSEZ FAIRE
1991

Fig 4.10

4.3 LAND

Land is the basic requirement for investment in urban development. Without a supply of land, it is difficult to provide the facilities society needs to function. Land is also a finite and valuable resource which is affected by numerous legal, cultural, physical and environmental constraints and interests. These, in turn, affect the accessibility to land, its use and the form and scale of development which can take place upon it. The availability of land, however, has a major bearing on the speed, scale and cost of development.

The difficulties in gaining access to land for development is a serious problem facing the metropolitan area and is proving a major impediment to investment. The existing land and real property market is very complex, and it lacks an efficient delivery system, security of tenure, a well organized market and capital. The lack of reliable statistics on sales, transfers and divestitures makes it difficult to establish trends in the market, and the value of land. This, in turn, makes it extremely difficult to project demand for land and to plan for infrastructural services. The following is a summary of the land and property market in the metropolitan area.

4.3.1 Existing Land and Property Market

(a) Land Ownership

There are four categories of land holding in the metropolitan area viz:

(i) Stool and Family Lands.

Most of the lands within the metropolitan area are vested in various stools and families at customary tenure, and the allodial title will usually reside in these stools and families who have the capacity to make land grants and grant leases. The indegenous Ga community holds most of the traditional land in Accra and this has been divided into numerous stools or matches - each with an elected chief. The chiefs have the authority to allocate land to families or individuals (by tradition all members of a stool are entitled to a plot of land). Families and chiefs also sell lease hold interests to other family members and persons of non Ga descent. The situation with the ownership and transaction of stool and family land is very complex with numerous disputes arising due to the lack of documentation and poor boundary definition of land in the past.

(ii) State Lands

There is an estimated 14,763 ha. of land in Accra within the metropolitan area currently held by the State. Thi represents 67% of the total land area of Accra. Prior to 6th March 1957, lands required for the public servic of Ghana (Gold Coast) were acquired under the Public Lands Ordinance (Cap. 134). Since 1962, land required for the public service are usually acquired under the State Lands Act, 1962. Government State Lands together with other public lands, are vested in the President in trust for the people of Ghana, but are manage by the Lands Commission, an extra-Ministerial body, on behalf of the State. Allocations of State and publi lands are made by the Lands Commission.

There is a system of deeds registration under the Land Registry Act 1962 whereby Deeds evidencing interes in land are registered. The Land Title Registration Law 1986 has been enacted to register propriety interes in land in declared areas. Under this law, title registration is being systematically extended to different par of the country. The objective is ultimately to supersede the Land Registry Act, 1962.

(iii) Vested Lands

Under section 7 of the Administration of Lands Act, 1962 (Act 123), stool lands may be vested in the Preside by Executive Instrument; the land will subsequently then be managed by the Lands Commission. Under t State Lands Act, 1925 (Amendment) Act, 1968, Stool lands may be acquired by the Government absolut on payment of a lump sum compensation.

Under the Accra-Tema City Stool Lands (Vesting) Order 1964 (E.I. 108) all stool lands not yet alienated in the Accra-Tema City Council were deemed vested lands. These lands were expected to be managed directly by the Lands Commission, however this has not been practicable. It is now sought to administer this Vesting Order to the letter. There are many problems in connection with the administration of vested lands, and these are dealt with elsewhere in these reports.

(iv) Private Lands

Although the concept at customary law was that stool land was inalienable, over the years the entire interest in such lands became readily saleable. Through this process of the sale of stool interests in land, large acreages of land in that category have thus acquired absolute or freehold titles.

The 1969 Ghana Constitution converted freeholds and leases for terms of over 50 years held by non-Ghanaians as at 22nd August 1969 to leasehold terms not exceeding 50 years. The 1979 Ghana Constitution repeated a similar provision. Thus, in a similar way, the freehold interest in stool lands were originally granteable, but the present policy of the Government is that plots of Stool and family lands can only be granteable on a leasehold basis.

(b) Title to Land.

After negotiating with a Stool, Family or Private landowner for the sale or lease of a parcel of land, the transaction will be reduced into the form of a document and executed by the vendor and purchaser, or lessor and lessee, as the case may be.

In the case of stool or family land affected by section 8 of the Administration of Lands Act, 1962, the concurrence or consent of the Lands Commission to the land transaction will be sought. (Private deeds or Land Title documents do not require the concurrence of the Lands Commission) After concurrence has been obtained, the document should be deposited with the Land Valuation Board for ad valorem stamp duty to be assessed and paid. After stamping, the document will be deposited at the Land Registry at Victoriaborg for registration under the Land Registry Act 1962. The effect of registration is to give actual notice to the whole world of the registration of the particular document: it does not confer any legality which the document did not possess before.

It is still possible to have a concession which is not on stool land but in an urban area validated under Cap. 136 by undergoing voluntary proceedings in the High Court at the place where the land in question is situated. If the lease is validated by the Courts, the lessee acquires an indefeasible title under the lease.

It should be noted that grants of land in Republic ownership confer indefeasible title. Also stool land dispositions concurred in by Government confer indefeasible title.

The Land Title Registration Law 1986 provides for the registration of various propriety interests in GAMA. The exercise is proceeding apace with work in Registration District 03 very far advanced. Eventually the whole of GAMA will be covered.

(c) Demand for Land

The total demand for land in the metropolitan area is impossible to determine accurately because of the lack of proper records. The Lands Commission and Tema Development Corporation are currently allocating less than 300 plots per year - some of these however are reallocations of land for which prior lease conditions have not been complied. The estimated sale of plots from stool, family and individuals is about 1,500 - some of which are existing and not newly created plots. The allocation of land by chiefs to the subjects of the stool for which drink money is paid is unknown but a retention of 10% of subdivided land by chiefs or families for traditional allocation and other miscellaneous purposes is common. The overall assessment of the annual number of newly created plots of land is currently believed to be in the order of 2,000 per annum.

The actual demand for land far exceeds supply. This situation has given rise to a substantial increase in the price for land and for rental property. Indicative land and rental prices are discussed below. In order to stabilize the land market, supply would need to increase by a further 1000 plots to 3,000 per annum. By the year 2000 this figure will reach 5,000. Given the constraints in the land delivery system, it is difficult to see the inflationary spiral in land prices abating in the foreseeable future.

(d) Price of Land

Reliable information on land prices in Accra is difficult to obtain, as documents officially submitted for registration seldom reveal the true price of exchange. Enquiries made of real estate agents and land developers have enabled some indicative prices to be obtained for the sale of land in different parts of Accra. These are set out below:

Table 4.8 Land Costs 1990

Commercial	CBD	-	30m /Plot of 0.4ha(1 acre)
	Nima	-	8m /Plot of 0.4ha(1 acre)
Industrial	City	-	8m /Plot of 0.4ha(1 acre)
Residential	Airport	-	20m /Plot of 0.2ha(0.45 acre)
	Cantonment	-	8.5m/Plot of 0.2ha(0.45 acre)
	East Legon	-	5m /Plot of 0.2ha(0.45 acre)
	Labone	-	7m /Plot of 0.2ha(0.45 acre)
	Gbawe	-	350,000 per plot of 0.25 acre
	North Teshie	-	750,000 " " " " "
	Abofu	-	3.5m " " " " "
	Ofankor	-	1.8m for plot of 100' x 100'
Long term Lease			
Osu (behind Ramona)		-	100,000 per/yr/plot of 0.11 acre.

Source: *Real Estate Agents 1991*

Land prices for commercial areas in Accra generally decrease from the town centre to the periphery. With respect to residential plots the situation is very dispersed and prices are more locality determined. Government plots have a resale price substantially higher than those of stool and/or private land. This is mainly because of the provision of infrastructure and services to government plots, they are zoned as first and second class areas, and they are not disputed. All these plots were originally acquired from the Lands Commission at almost no cost.

(e) Rental Property Market

Like land prices, information on rental property is very difficult to obtain. The following are indicative rents for property in different parts of the city.

Table 4.9 Rental Charges 1991

RESIDENTIAL	
Labone/North Ridge	$ 700 - $ 1,500/ month
Airport	$ 1,000 - $ 1,800/ month
Dzorwulu/E Legon	$ 250 - $ 600/ month
Asylum Down/Ringway	100,000 - 150,000 cedis/ month
Teshie/Nungua/Kaneshie	30,000 - 80,000 cedis/ month

Abeka/Odorkor(Rm & Chamb)	5,000 - 10,000 cedis /month
Chorkor/Osu/Labadi (Room)	1,500 - 2,500 cedis/ month
COMMERCIAL	
Inner city Commercial	15,000 - 25,000 cedis/m^2/year
Inner city Retail	33,000 - 50,000 cedis/m^2/year
Inner City Warehouse/Retail	25,000 - 30,000 cedis/m^2/year
Commercial, Osu	15,000 - 35,000 cedis/m^2/year
Abeka/ Kaneshie	2,000 - 5,000 cedis/m^2/year
INDUSTRIAL	
Industrial Area (Bldg. & Land)	2,500 - 5,000 cedis/m^2/year
Inner city (Accra)	4,000 - 6,000 cedis/m^2/year
Tema	10,000 - 15,000 cedis/m^2/year

Source: Real Estate Agents Year: 1991

In addition to the above, it is common practice for landlords to be paid goodwill money. The practice of asking for rental advances on residential property is common. This ranges from 1 year for foreign currency payments to five years on low income single room accommodation.

(d) Land Valuation

Until 1988, there had been no new valuation made of property in the metropolitan area. With assistance from the World Bank all properties in Accra and Tema have now been valued. The revaluation of urban property in Ga district will commence in 1992. There are over 76,319 properties valued in Accra and over 20,000 in Tema. Property is rated according to capital value i.e. replacement cost value and land use. The new valuation is to be used to adjust property rates for the metropolitan area.

(e) Ground Rent and Property Rates

In this country there are generally speaking two main types of imposts issuing out of land, viz: Property rates which are levied by District assemblies and Ground Rents which are paid to the Lands Commission in respect of leasehold properties leased by the Government. Ground Rents are also being reserved in stool and family land transactions and these are collectible by the Administrator of Stool Lands within the Lands Commission Secretariat. The property rate is assessed on the rateable value of premises which is the replacement cost of the buildings, structures and other development comprised in the premises after deducting the amount which it would cost at the time of the valuation to restore the premises to a condition in which they would be serviceable as they were when new. Ground rents issue out of land and are usually assessed at so much per annum even though the ground rent may be payable half-yearly (usually in advance). The ground rent represents the annual value or consideration for the tenant being allowed to put up his building or structure in accordance with the terms of the lease viz for 50 years, 75 years, 99 years etc. or as the case may be. In view of current inflationary trends, ground rents are being revived at 5 or 7 yearly intervals pursuant to changes in the lease agreements. It has been remarked that ground rents reserved in stool leases are hardly ever revived and that they should also be subject to periodic revision in the same manner as state lands. Again it has been stated that the collection of ground rents on both state and stool lands managed by the Government have been found to be unsatisfactory. This is a matter for the Auditor-General who is entitled to receive half yearly revenue returns, inter alia, on these lands.

4.3.2 Issues Affecting Land Development

The provision of land is one of the most serious issues affecting development of Accra. The current process for obtaining a plot of land for development is long and complex and fraught with difficulties. The land delivery system has reached a point where unless some of the bottlenecks in the system are cleared, the housing situation will deteriorate with serious social consequences. The formal and informal systems are delivering less than 3,000 plots per annum, well short of demand. Some of the major issues affecting land delivery are set out below.

(i) Protracted Litigations

The main areas of litigation before the courts relate to questions of proving title, boundary disputes (between allottees as well as between stool land owners), encroachments on vested land and problems arising from the preparation of site plans. There is an urgent need to simplify the procedure for handling litigation on land matters and to bring many stool and family lands onto the official titles registry. If this can be achieved for large land holdings, there is less likelihood of fresh disputes arising in the future. Figure 4.12 shows areas of land in the metropolitan area which are the subject of disputes.

(ii) Delays in Perfecting Title

There are six agencies responsible for perfecting title to land. The Land Commission is responsible for undertaking an economic examination of the consideration for processing the documents, the Town and Country Planning Department for checking that plans agree with approved layouts, Land Valuation for stamp duty, Internal Revenue for taxes to be paid, the Deeds Registry which registers the document, and the Survey Department which approves plans attached to any instrument of conveyance, leases, assignments or transfer. These agencies are under different ministries. In the absence of any coordinating process, the total period of time to perfect title is inordinately long.

(iii) Town Planning Schemes and Surveys

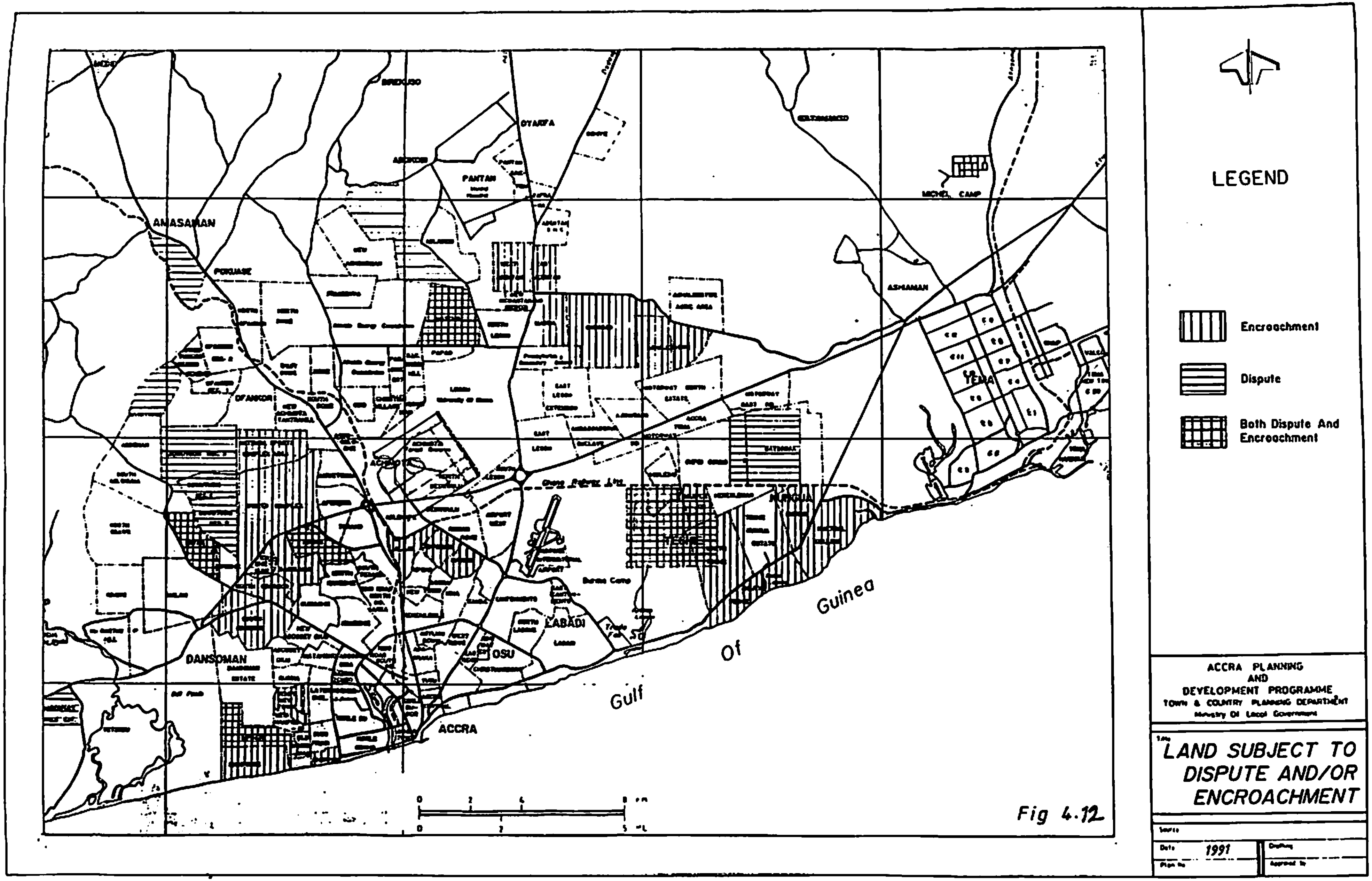
A major problem in Accra is the many instances where plans of subdivision bear no relationship to the Town Planning scheme for the area. Land owners engage people to prepare subdivision plans for their land and proceed to allocate plots before the scheme for the whole area is prepared by the Town and Country Planning Department and approved by the Planning Authority. The plots are surveyed and demarcated and sold without the approval of the Director of Surveys. Consequently, development has become haphazard and no provision made for adequate roads, infrastructure and community facilities. This exacerbates the problems of perfecting title.

(iv) Poor Record Keeping

Coupled with the problem of planning and subdivision is the lack of up to date maps and plans. The last maps of Accra were prepared from 1964 aerial photography. The Survey Department, Lands Commission and the district assemblies therefore have no reliable means of checking the extent of development other than by field inspections. Record keeping has been so neglected that it is impossible to know what has been happening in many areas. Where records have been kept, entries have been found to be incorrect because of lack of proper checking procedures. The lack of proper storage facilities for maps and survey plans has meant that many plans have deteriorated to the point of becoming unusable.

(v) Payment of Compensation

Government has acquired significant areas of land in Accra for development, but in many cases compensation money for this has not been paid. Stools and land owners feel aggrieved and have continued to develop particularly vested land - with complete disregard to the provisions of the law. They claim the land is still theirs because compensation claims have not been paid. The problem arises because Government will not pay compensation unless title can be perfected. Substantial areas of land are subject to stool and family land disputes. The State Lands Act 1962 (Act 125) provides for the setting up of a State Lands Tribunal to deal with these matters but for various reasons it is not functioning.


LEGEND
Encroachment
Dispute
Both Dispute And Encroachment
AMASAMAN
POKUASE
DANSOMAN
ACHIMOTA
OSU
LABADI
ACCRA
NUNGUA
TEMA
ASHAIMAN
MICHEL CAMP
PANTAN
OYARIFA
BROKUSO
OFANKOR
Gulf Of Guinea
0 2 4 8 km
0 2 5 ml
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
Date 1991

LAND SUBJECT TO DISPUTE AND/OR ENCROACHMENT

Fig 4.12

(vi) Uncertainty in Plans of Developers and Investors

The inefficiency and imperfections of the land delivery system gives rise to great uncertainty by developers and investors. Unless title is given by the State through the Lands Commission, there is always the risk that the land will be subject to a dispute. The perfecting of title on non State lands takes so long, that most developers are not prepared to run the risk of injecting substantial capital into housing projects. As the release of new government land per annum is very limited, opportunities for large scale development by the private sector are very limited. This is a major constraint on the housing industry.

(vii) Undeveloped Land held by Individuals and Institutions

A paradoxical phenomenon associated with the land delivery system in GAMA is that, in the face of an apparent shortage of land, there are large number of sites, some quite sizeable, which remain undeveloped by individuals and institutions. These consist of lands granted by stools, families and individuals and those granted to institutions like State Housing Corporation, State Insurance Corporation and Bank for Housing and Construction. The State Housing Corporation currently holds over 2,000 ha of valuable underutilized land in the metropolitan area which it does not have the resources to develop. There are currently in excess of 4,000 plots within the Accra metropolitan area which remain vacant and a further 6,880 with uncompleted structures. Many of these will never be developed fully and are thus a waste of a very valuable resource. Means of ensuring that this land does not remain idle must be sought.

(viii) High Land and Development Costs

The inefficiencies in the land delivery system have created a situation where there is a severe shortage of land which has given rise to rapid escalation in land prices. The shortage has also given rise to speculation in land as a hedge against inflation. Concurrent with high land values are high development costs. Factors contributing to this are costs of providing infrastructural services which must be recovered from users. Current infrastructure costs per new plots are in the order of 2,000,000 cedis at the fringes. For redevelopment areas this reduces to 1,000,000 cedis.

(ix) Low Value of Land in CBD

Much of the Central Business District comprises of many small land holdings in individual ownership. Most of these were residential properties which have undergone a change of use. While the rents commanded from small holdings in the CBD are high, the values of the property when compared to quality residential areas are low. The municipal rates collected on small holdings is also very low. There is little incentive, therefore, to redevelop in the CBD because of difficulties in amalgamating land, poor infrastructural services and congestion. As a result, property values in the CBD continue to deteriorate. Unless property taxes on small holdings are significantly increased in the CBD, forcing amalgamation of small holdings, redevelopment will not take place and the role of the CBD will become less dominant. The potential to expand the municipal revenue base of Accra by having a highly capitalized CBD will be lost.

(x) Municipal Problems with Redevelopment of Inner City Areas.

The provisions of the Local Government Law 1988, gives the AMA power to oversee the development of land within the city. AMA can use these powers to acquire land for car parks and road widening to remove congestion. However, there are inadequate powers for local government to acquire land for redevelopment, neither does it have funds to do so. Further, while the Local Government Law allows AMA to restrict development which does not comply with a plan, the lack of a plan for the CBD, effectively means that these powers are dormant. Development will continue to be ad-hoc until such a plan is prepared.

Further to the above there are over 250 ha of land in the inner city areas of Cantonments, Ridge and Kanda which have detached government bungalows sited on very large sites ranging from 0.4 to 1 ha. Many of these buildings require considerable maintenance if they are to remain habitable in future. The opportunities for better utilization of this land exist, but constraints of areas declared as security zones, relocation of civil servants and affordability of new development must be overcome.

(xi) Lands Commission and Land Title Registry

The Lands Commission and Land Title Registry play a critical role in the issue of title. The Commission is supposed to have established regional offices in order to speed up approvals. Currently it handles all applications for State Land in the country. As a result, it cannot handle the many applications it receives for land in Accra. Both the Lands Commission and Land Title Registry are short of trained manpower, and are without updated maps and technology to speed up the process of issuing title.

(xii) Real Estate Industry

Real estate is an important contributor to wealth generation. The industry is an important facilitator of property transaction, rental placement and development. There are a number of operators in the real estate market, but without proper guidelines and controls on their activities, a number of disreputable practices have arisen. The industry is still in its infancy but its development is essential if the real estate industry is to be serviced efficiently.

(xiii) Tema Development Corporation

Tema Development Corporation was established in 1952 (TDC Ordinance No. 35 of 1952) to construct the port city of Tema, 25 km east of Central Accra. The Corporation, until the late 1970's, was very successful in developing Tema new town. The perennial budget limitations of the Government of Ghana have in turn affected the ability of the TDC to generate internal financial resources for development. Since 1979, therefore, no significant grants have been made to it by the Government and its present development strategy is based on (i) the development of vacant in-filling plots within the established community estates, and the leasing of prepared sites to small private sector developers or directly to members of the public and (ii) encouragement of the activities of public sector and other private financial institutions which have the capacity to fund infrastructure and housing units eg. SSNIT, NTHC. For the infill sites the TDC, as a rule, requires 40-50% down payment and the residual cost payable over the construction cycle of about seven months. The present innovative approach seem to be showing results and there is intensive construction activity within Communities 9, 11, 13, 3 and 5. The Government of Ghana has recently commissioned a Study for the Re-organisation of the TDC and it is expected that the report of the investigation, already completed, will result in the corporation playing a more active role in the development of Tema than hitherto.

(xiv) Surveying

Only licensed surveyors can undertake the survey of subdivisions of land in Ghana. Like all the professions in Ghana, there is a serious shortage of surveyors, and, as a result, there are a substantial number of unqualified surveyors subdividing land for chiefs and family land holders. The survey regulations call for standards of surveying which under present circumstances are not affordable. This results in expensive surveying costs which for government lands are not recovered. There is a need to increase the number of surveyors, reduce the costs of field surveys and introduce new technology which will enable more land to be legally surveyed.

4.3.3 Opportunities for Improved Land Delivery

The ability of individuals to acquire land easily is essential to maintaining a strong real estate industry, especially for housing. The current land delivery system is incapable of meeting the demands of a city the size of Accra and must be overhauled. Opportunities exist to streamline many of the current administrative procedures through computerization. Land reform must be undertaken to ensure customary rights and heritage to land are protected under trust or legislative arrangements, that compensation claims are equitably settled, and mechanisms are put in place for disputes to be resolved without recourse to the courts.

The underutilization of land is a waste of a valuable resources. Opportunities to capitalize on redevelopment, especially in the CBD and inner city areas should be realized. The need for a strong development of a real estate industry is essential to streamlining the land delivery and property market. These and other opportunities can be realized, provided it is backed with a secure land tenure system and a confidence to invest in development.

4.4 HOUSING

4.4 .1 Introduction

The provision of shelter is a serious problem facing the metropolitan area. Housing for the majority of the population is grossly inadequate and the capacity to increase housing delivery in the short term is also very limited. The shortage of housing has given rise to very high occupancy levels, unaffordable rents, unstable tenancies and poor living conditions. These factors, combined with issues of land litigation, high cost of building materials, shortage of skilled manpower and infrastructure services, underline the seriousness of the problems facing housing delivery in the metropolitan area. The following is a summary of the existing housing situation and issues affecting the housing delivery system in GAMA. More detailed information on housing is available in the "Housing Needs Assessment Study" prepared for the Accra Planning and Development Programme.

4.4.2 Existing Situation

(a) General Characteristics

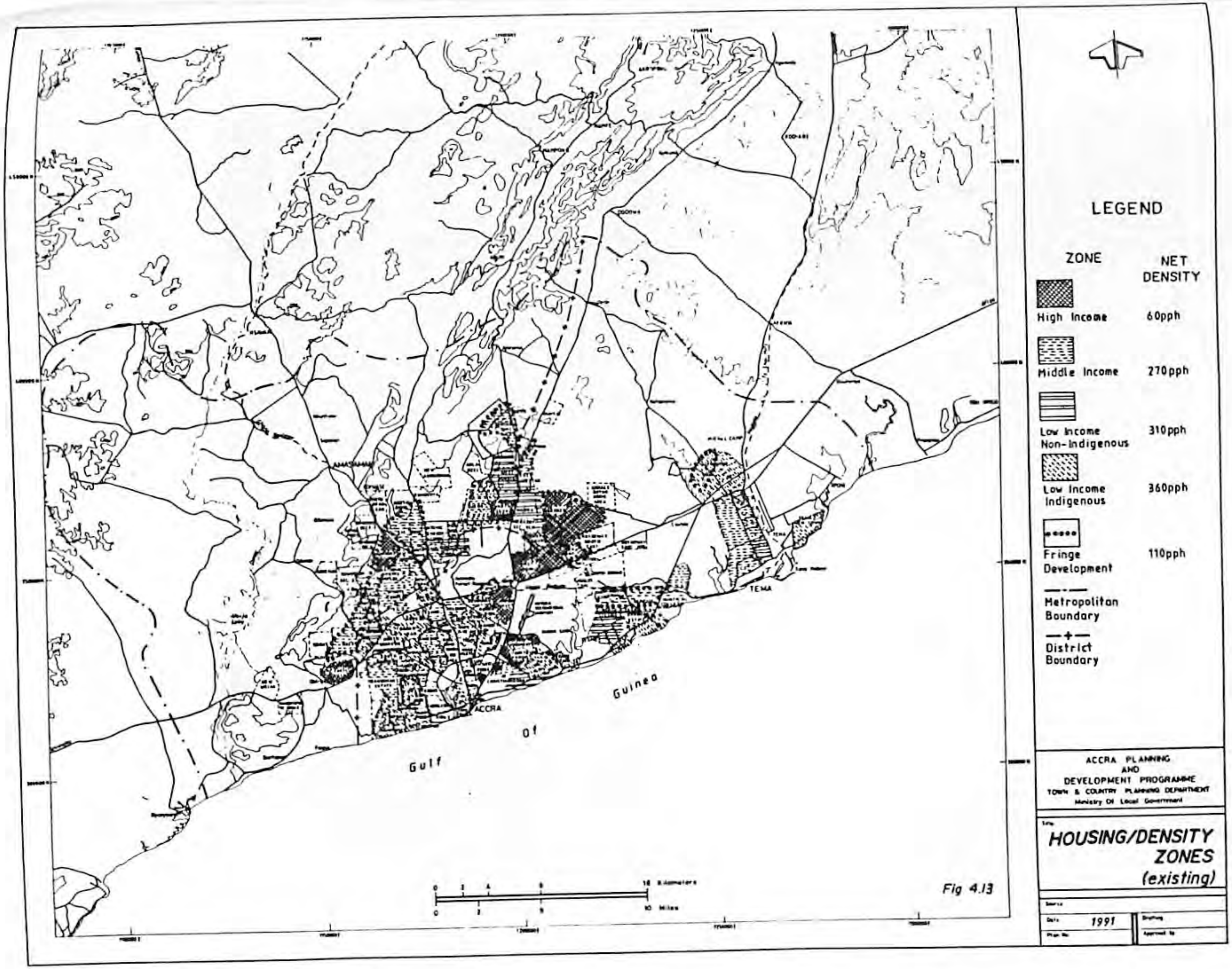
The general characteristics of housing in the metropolitan area may be put under three broad categories. They include: An inner city area comprising a mixture of very low density development with under-utilised service infrastructure on the one hand and an indigenous, low income and high density development with depressed conditions and over stretched infrastructure services on the other; a peripheral residential development which is haphazard, with barely sufficient infrastructure to support it; and thirdly large numbers of uncompleted houses and pockets of undeveloped land interspersing the fringe and inner city area developments - often the result of land litigations or the inability of the owners (individuals and organisations) to complete or develop them because of lack of funds.

Housing may be classified under three zones: the low income, middle income and high income zones *(see Figure 4.13)*. The low income housing zones may be divided into indigenous and non-indigenous (dominantly migrant) areas. The low income indigenous housing areas comprise Osu, James Town, Adedenkpo, Chorkor, Labadi, Teshie and Nungua. The low income non-indigenous zones include areas like: Sukura, Kwashieman, Odorkor, Bubuashie, Abeka, Nima, Mamobi, Madina, Ashaiman and Tema New Town. Altogether these areas accommodate about 58% of GAMA's population. Most of the informal businesses are located in the low income areas and they are the first place of abode for any new job seeking migrant in GAMA.

Almost all low income areas are built up with little room for expansion. This is particularly so in the indigenous areas of the inner city. Conditions are generally depressed with poor supporting social and engineering infrastructure. Buildings are of poor quality material such as mud, untreated timber and zinc roofing sheets for walling. The housing environment is characterized by haphazard development, under-provided housing infrastructure, poor drainage, erosion and high population concentrations.

The middle income areas house predominantly business, administrative and professional income families. Much of the housing has been provided by state, parastatal and private sector organizations and individuals. They include areas like Dansoman Estates, North Kaneshie Estates, Asylum Down, Kanda Estates, Abelenkpe, Achimota, Tesano, Dome (CFC Estates) and the various communities in Tema, except Community 6. Usually, these areas, unlike the lower income areas, are planned and have fair amount of infrastructural services. Building materials and general housing conditions are better quality. The middle income group comprises 32% of GAMA's population.

The high income areas provide housing for the remaining 10% of GAMA's population. They include areas like North and West Ridge, Ringway Estates, North Labone Estates, Airport Residential Area, Roman Ridge, East Legon and Tema Community 6. These areas are all planned and have well developed infrastructure with spacious and landscaped grounds in sharp contrast with, particularly, the low income areas. Building materials used, like the middle income areas, are usually sandcrete blocks for walls with aluminium/asbestos sheets for roofing.


LEGEND
ZONE
NET DENSITY
High Income 60pph
Middle Income 270pph
Low Income Non-Indigenous 310pph
Low Income Indigenous 360pph
Fringe Development 110pph
Metropolitan Boundary
District Boundary
ACCRA
TEMA
AMASAMAN
Gulf Of Guinea
Kilometers
Miles

ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

HOUSING/DENSITY ZONES (existing)

Date 1991

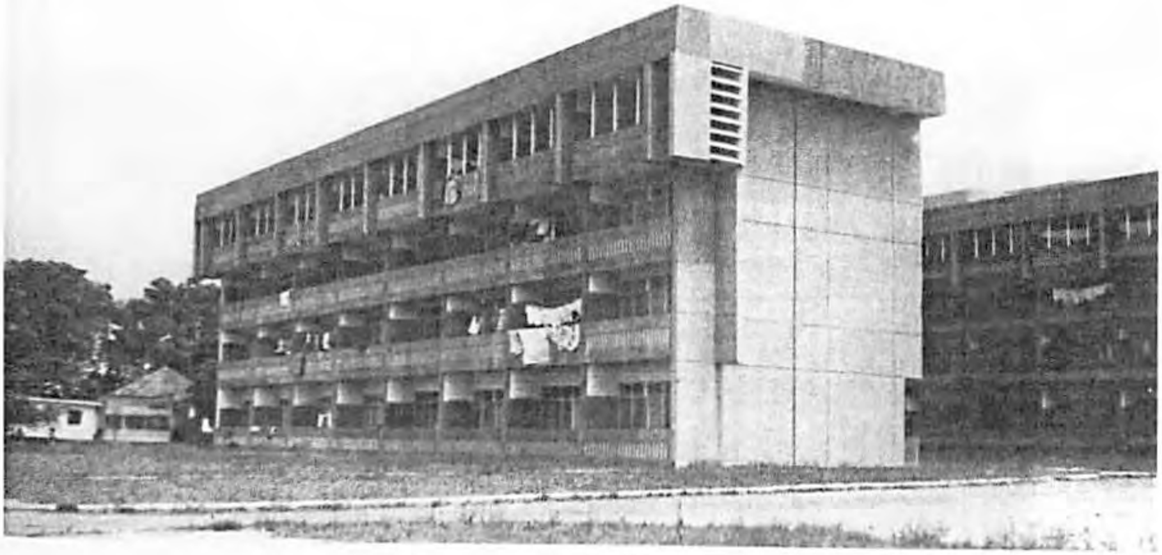
Fig 4.13

LOW INCOME HOUSING IN INNER CITY - JAMES TOWN

HOUSING IN THE INNER CITY - OSU

HOUSING

SEMI - DETACHED HOUSING IN TEMA



WORKERS FLATS IN TEMA

HOUSING

HIGH INCOME HOUSE - ACCRA

SCATTERED DEVELOPMENT (HOUSING) ON THE URBAN FRINGE

HOUSING

There are also high and middle income peripheral areas such as North and East Legon, Haacho, Adentan, Taifa and Mallam, where development of engineering infrastructure is not yet complete. These areas developed ahead of infrastructure and consequently lack almost all the services. Building materials used are similar to those in the middle and high income zones.

(b) Housing Stock

Reliable information on the housing stock is very difficult to obtain. Table 4.10 shows recorded units of housing in GAMA in the 1960, 1970, 1984 census, with the current estimate given for 1990 of 94,732 units. The total housing stock in GAMA has increased by 68,350 since 1960; this is equivalent to a rate of about 4.4% per annum. Further analysis of the table shows that actual delivery rate has been progressively declining *(see Table 4.11)*. The overall national housing production rate has also been declining.

Table 4.10 Housing Stock in GAMA 1960 - 1990

District	1960	1970	1984	1990 (Estimated)
Accra City	22,663	40,802	64,441	70,463
Tema	3,726	13,829	16,638	18,196
Ga	-	-	5,393	6,073
Total	26,382	54,651	85,472	94,732

Source: 1960, 1970, 1984 Census, APDP 1990.

Official records for GAMA show that in Accra an average of about 444 houses were constructed per annum between 1984-1990; that is, a 1% per annum housing stock growth rate over this period. Statistics for Tema and Ga are not available for the same period, however, growth rates of 1.5% and 2.0% or 250 and 108 houses per annum respectively have been assumed for the two districts. These take into account housing development activities of both the public and private sectors in the two districts. Much of the housing development has taken place on the periphery in the Odorkor, Dansoman, Darkuman, Kwashieman, Sports Complex, Achimota, Madina, Teshie-Nungua, Ashiaman and Tema New Town areas. The overall delivery rate for GAMA was less than 1,000 houses per annum during the period.

Table 4.11 Percentage Increase in Housing Stock (1960 -1990)

District	1960/70	1970/84	1984/90 *	1960/90 *
Accra	6.06	3.32	1.50	3.85
Tema	14.01	1.33	1.50	5.43
Ga	-	-	2.00	-
GAMA	7.55	3.33	1.53	4.35

* *Estimated*
Source: Accra Planning and development Programme (1990).

(c) House Types

There are six main house types found in GAMA. They include:

(i) Single Storey Traditional Compound House

This is indigenous Ghanaian architecture found throughout the country. In GAMA it accounts for about 52% of the housing stock. Conceptually, it groups between 10-30 rooms with kitchen and toilet facilities around an open court which is used as common living space for all households. The house normally has a main entrance at the front, used for circulation, and a back entrance which is only occasionally used. It is normally occupied by a number of households because of the room arrangements and the additional living space provided by the courtyard. It is found mainly in the indigenous, non-indigenous and middle income areas.

(ii) Multi-Storey Tenement

This is similar to the single storey compound house in structural and functional organization but different in the arrangement of rooms around the open court. The rooms are arranged two-three storeys up with the open court on the ground floor. The staircase is usually located within the courtyard and is constructed of wood or concrete. It has similar facilities as the compound house. This house type, like the former, is commonly found in the indigenous, non- indigenous, and middle income areas in GAMA. It accounts for about 10% of the housing stock in GAMA. The functional organization of this and the compound house type encourages high occupancy rates; thus increasing the demand on services and facilities in a house.

(iii) Bungalow House-Type

This house-type is designed for a single household. Houses of this type stand detached on predominantly large plots usually with landscaped or paved grounds in front and back-yard gardens reminiscent of the colonial era. This type of housing is occupied by senior government officers and officials, business executives and expatriates. They consist of a 2-3 bedroom single or two-storey building with kitchen and other ancillary facilities such as an outhouse normally for staff or "boys quarters". The boys quarters is a 2-bedroom house with bath, kitchen and toilet facilities only. It accounts for 22% of the housing stock in GAMA.

(iv) Semi-Detached Houses

This house-type is frequently found in the middle income areas. A regular feature of it is two houses of 1-2 bedrooms each sharing a common partition wall. Similar to the bungalow type, the houses are self contained and provided with needed amenities. It accounts for about 11% of the housing stock in GAMA. It is designed for single families but in the established areas of Kaneshie, Dansoman, Osu, houses of this type are known to have been extended to 3-4 bedrooms.

(v) Flats

This house-type which is normally high rise, about 3-4 storeys, occurs in government estates and corporate housing provided by public and private sector organizations. It provides a number of self contained dwelling units of different sizes - usually, 2-3 bedrooms, for single households without any privately defined courtyard. Balconies are provided for outdoor activities. This house-type accounts for only 1.2% of the total housing stock in GAMA.

(vi) Barracks

Barracks accommodation is provided for members of the armed forces, police, prisons, fire services and institutional employees. The accommodation usually consists of a single room, some of which have self contained facilities, others have access to communal facilities for cooking and washing. Many of the barracks facilities were constructed during the colonial and post independence era. Most are in a very poor state of disrepair.

(vii) Other Accommodation

The short-fall in housing supply has resulted in some people resorting to other means of accommodation or shelter. These include uncompleted buildings, kiosks, garages, etc. It is estimated that about 3% of the population in GAMA are effectively homeless.

(viii) Housing Construction Trends.

The Housing Needs Assessment Study indicates that current trend in housing construction is towards the three-bedroom self contained single family bungalow house type. This should be a matter of concern because it may mean the elimination of a greater portion of the middle and low income groups from the housing market because of the high rents demanded for this type of housing.

(d) Construction Materials

The principal components of house construction are the foundations, floor, walls and roof. Surveys conducted from the Housing Needs Assessment Study in GAMA indicated that over 94.4% of houses have concrete foundations. Over 90% of houses have concrete or cement rendered floors, the balance using predominantly terrazzo or wood - either boards or tiles. Iron, aluminium, asbestos and slate comprise over 95% of materials used in roof construction. Some houses in higher income areas have roofs constructed of concrete, but in many cases this is the floor for a proposed second or third storey. There is very little use of clay or concrete tiles for roofs. The most common wall construction material is sandcrete and landcrete (in the ratio of 2:1). Wooden walls are uncommon because of the termite and fire risk. Bricks are not in common use, mainly because of the limited supply, poor quality through inadequate firing and a seeming reluctance to use this building material. Mud or mud straw material used in traditional rural housing is found in migrant areas and villages which have been absorbed into the urban area.

(e) Housing Conditions

(i) Occupancy

Occupancy rates per dwelling in Accra rose from 9.6 persons per house (pph) in 1960 to almost 15.0 pph in 1984. Occupancy rates in Accra are now estimated to be about 20 pph. Rates for Tema rose from 7.5 to 11.5 persons per house between 1960 and 1984. They are estimated to have increased to 13 pph in 1990. The Housing Needs Assessment Study found significant variations between households per house, rooms per house, persons per household and persons per hectare. These are shown in Table 4.12.

Table 4.12 Housing Density Indicators in GAMA(1990)

	Housing Zone				
	Low Income		Middle Income	High Income	*Newly Dev.
Density Indicators	Indigenous	Non Ind.			
Household/House	5.2	6.8	4.0	1.8	1.5
Rooms /House	8.3	11.1	7.4	7.2	4.1
Rooms/Household	1.6	1.6	1.6	1.9	2.8
Persons/Household	5.7	5.0	5.3	5.2	5.0
Persons/Room	3.6	3.1	2.9	1.3	1.8
Persons/House	29.5	34.0	21.0	9.3	7.4
Persons/Hectare	310.0	360.0	270.0	60.0	110..0

** Newly Dev - New Developing/Fringe Areas.*

Source: Housing Needs Assessment Study, APDP (1990)

Net residential densities for the different income zones range from 60 persons per hectare in high income areas to 360 persons per hectare in the low income areas. The most densely populated areas are James Town, Ussher Town and Ashiaman north of Tema where density in small enclaves exceeds 500 persons per hectare. Existing infrastructure in these areas is unable to cope with the pressure of these high density population levels.

(ii) Housing Infrastructure

The six most essential infrastructure and services required by households are toilets, bathrooms, kitchens, stores, water and electricity. Table 4.13 gives an indication of the intensity of use of housing infrastructural services in GAMA. Over 95% of households have access to water and electricity - although water may not come from mains. In the case of electricity, the average drops to about 48% in the fringe areas. The availability of toilets, bath rooms and kitchens varies significantly among income zones. High income areas have the best facilities, but in the medium income zones, with an average of 14.7 persons per toilet, 14.3 persons per bathroom and 20.4 persons per kitchen, the intensities of use are high in relation to the Building Regulations. Even in the peripheral/fringe areas conditions are no better. *(See Table 4.13).*

Table 4.13 Housing Infrastructure and Intensity of use in GAMA (1990)

Housing Zone	Kitchen		Bathroom		Toilet	
	Number/ House	Persons/ Kitchen	Number/ House	Persons/ Bathroom	Number/ House	Persons Toilet
Indigenous	0.74	47.6	1.41	21.6	1.07	30.3
Low Income	0.87	38.3	1.55	16.7	0.87	27.2
Mid. Income	1.08	20.4	1.46	14.3	1.59	14.7
High Income	1.37	11.8	2.26	7.1	1.2	37.1
Newly Dev.	0.91	20.0	1.12	16.6	1.20	15.2

Source: Housing Needs Assessment Study, APDP (1990).

In the low income zones they are totally unacceptable and a risk to public health. There are generally very high pressures on housing infrastructure - about 30 persons per toilet, 48 persons per kitchen and 22 persons per bathroom. These are due to either under provision or conversion of housing infrastructure to some other uses or the kind of service provided. It is estimated that about 66.4% of households do not have storage facilities because stores have been converted into rooms, while 18% of the population does not have access to toilets. Consequently, they use public toilets, open spaces and the beaches. About 72% of all pan latrines in GAMA are found in low income areas.

(iii) Socio-Economic Characteristics

GAMA's population is youthful with 47% of the population under 20 years. Residential mobility is low with surveys indicating almost 80% of households having lived for the last 7 years in the same house. The high family dependency ratios utilize most household income, leaving little towards saving for a house. The inability to save has contributed to the low level of housing delivery, particularly amongst the low and middle income groups where home ownership is not affordable.

Salaries are low, but supplementary income from other sources may exceed 3 times the official income amongst the high income group. The ratio is less than one amongst the lower income groups. It is estimated that about 90% of GAMA's working population is below the poverty line (ie. ILO minimum wage of US$4.00 a day or 35,000.00 a month). Between 20-37% of all heads of households have secondary employment - the highest ratio being in the low income group. These survey figures indicate the inadequacy of primary occupational incomes and the difficulty most residents of GAMA have in meeting basic needs.

(iv) Environmental Conditions

The general conditions of houses and housing areas for the metropolitan area are poor. Major problems affecting houses are poor roofs, floors, foundation and wall construction, poor orientation and inadequate provision for ventilation and light, poor ablution design and dangerous electrical fittings. Major site problems associated with housing are the development of low lying, high water table and flood prone areas; inadequate drainage, erosion undermining foundations, poor solid and liquid waste disposal and inadequate spacing of houses. When these conditions are experienced over a wide area, serious problems occur with local flooding, sanitation, access and public health. Another problem which threatens public health is the large scale use of asbestos as roofing material. Aspects of these are discussed in more detail in section 4.5.4 of this chapter.

(f) Cost of Housing

All the elements of housing construction costs: land, building materials, labour and infrastructure costs per frontage are very high. For all income groups, the land price may be up to 10% or more of housing costs. The shortage of skilled manpower has also pushed up labour costs. The traditional use of concrete and sheet roofing material is an expensive means of providing even basic housing. Table 4.14 shows the cost of construction for low, medium and high income groups in the metropolitan area in 1990 - exclusive of land costs. The cheapest single bedroom house with kitchen and ablutions was 1.5 million cedis (US $4,000). The most expensive houses constructed are in excess of 40 million cedis (US $110,000). There is strong reluctance to build in alternative materials which may be cheaper. Building regulations also generally used to discriminate against alternative and cheaper materials.

Table 4.14 Housing Construction Costs (1990)
(million cedis)

House Type	Low Income	Middle Income	High Income
1 Bedroom	1.5 - 3	2.5 - 3.5	3.5 - 5.5
1 Bedroom plus Hall	2.5 - 5.0	3.5 - 4.5	4 - 5.5
2 - 3 Bedroom	3.5 - 4.5	5.0 - 10	7 - 12
4 Bedroom Plus	10 plus	15 - 20	20 - 45

Source: Housing Needs Assessment Study - 1990

The above costs are not a true reflection of the real costs of house construction. Most people take between three and seven years to complete a house. The first stage usually involves the construction of the foundations and walls to window sill level. The next stage involves completion of the walls and roof, sufficient to occupy the house. Surveys indicate that most home builders will complete this stage within three years. The net effect of this staged building process under high domestic inflation is a rapid rise in building costs to the individual home builder. As real incomes have fallen in the last 10 years, many home builders have exhausted their financial capacity to complete construction.

(g) Affordability

There is a significant variation between affordability of rental accommodation and home ownership. Rapidly increasing housing and land costs, falling real incomes, slow delivery rates and lack of housing finance have taken home ownership beyond the reach of the majority of the population. Rent control and lack of housing finance have significantly reduced the construction of rental accommodation leading to overcrowding. The practice of 2 to 5 year rental advances (which is illegal) with very little security of tenure, eliminates any prospect of savings, with most people having to borrow heavily to secure sums of money of about 10 times their monthly income to secure even basic shelter. This, in turn, puts greater pressure on the very low income rental housing stock, with the result that an increasing number of low income families run the risk of becoming homeless, and some have actually become homeless.

It is very difficult to relate income to housing costs, as reliable data on income is almost impossible to come by. Most surveys have found income to be understated by a factor of 2 or 3. Surveys conducted for the Housing Needs Assessment Study suggest that between 15% to 35% of income is spent on rent. Whatever the criteria used to assess income, most are very low. Fewer than 25% of household heads live in accommodation which they own. This suggests that about 75% of households cannot afford their own houses. Housing is not affordable for the 80 percentile income group if current rates of housing delivery are measured against estimated needs. As a small proportion of the houses built are for rental, the percentile unable to afford to build their own or new family home may probably be higher than this figure. The implication of this very low level of access to the conventional housing market is a serious housing shortage, along with the many problems which have been outlined elsewhere in this section. This calls for more innovative and less conventional approaches to house design and construction and a significant increase in funds to the housing sector if any impact is to be made on reducing the housing crisis in the metropolitan area.

4.4.3 Housing Delivery

(a) State Housing

The government has played an important role in housing delivery in GAMA through a number of housing institutions. These include: the State Housing Corporation (SHC), Tema Development Corporation (TDC), State Construction Corporation (SCC), Public Works Department (PWD), Department of Rural Housing and Cottage Industries (DRCHI); also others such as the First Ghana Building Society (FGBS), Roofing Loan Scheme (RLS), Bank for Housing and Construction (BHC) and its subsidiary REDCO, and lately, the Home Finance Company (HFC). This last group comprises mainly housing finance and building materials supply institutions.

Housing institutions built on government or acquired lands with government subventions. Such housing was for purchase or renting by public and private sector organizations and individuals at heavily subsidized prices. The SHC, established in 1956, for instance, was to construct 2,000 housing units per annum nationwide. The TDC was set up to plan and develop Tema. It had an initial target of constructing 1,200 units per annum, that is 28,500 units in 18 residential communities between 1961-1985. To date, together, they have built a total of 22,294 units in GAMA and remain the largest landlords, providing 4,800 (SHC) and 7,336 (TDC) rental units in the metropolis. They are however discontinuing the development of rental units because of low rent levels, high maintenance costs and related problems. Table 4.15 shows a breakdown of the current estimated stock levels for the major institutions.

Table 4.15 State and Parastatal Housing Stock in GAMA

Agency	Houses Constructed	Remarks
TDC	13,479	This includes rental housing of 4,800 for (SHC) and 7,336 (TDC)
SHC	8,815	
PWD	1,357	Includes housing for hospitals, schools and civil/public servants.
SSNIT	1,370	This does not include on-going projects of 2266 units.
REDCO	30 (Flats)	
Police, Military Prisons	3,133	Estimated
TOTAL	28,184	

Source: Accra Planning and Development Programme (1990)

The SCC and PWD built bungalows and blocks of flats mainly for the middle and high income groups in the public sector. The PWD provided furnishing and maintenance for such employment-tied housing. There are about 1360 of such housing units in the GAMA, mostly in the inner city areas like Ridge, Cantonments and Labone; and also the Roman Ridge and Airport Residential areas.

The number of government constructed houses which until lately accounted for about 15% of the housing stock, has significantly declined due in part, to withdrawal of subsidies from the state and parastatal organizations for housing construction. The PWD no longer builds houses but it maintains the existing stock. SHC and TDC are to be no longer involved in major housing construction programmes but in line with current government policy assist in facilitating housing by providing land, infrastructure, and technical services.

(b) Private Sector Housing

The private sector accounts for over 80% of the total housing stock and will continue to be the principal deliverer of housing for owner-occupation, purchase and rental accommodation. The majority of private sector housing is built on stool, family or private land with funds from private sources - usually personal savings. Few builders have access to funds from financial institutions or materials from the RLS. Most houses built by individuals are either by direct labour or on contract. Contribution of private individuals is about 66% of the housing stock. Most houses take between 3-5 years to be completed.

In recent years, private real estates developers, under their umbrella organization, the Ghana Real Estate Developers Association (GREDA), have started playing an increasing role in housing delivery in GAMA. GREDA, since its inception in 1988, has contributed about 5.2% of the total stock increase, with three of its leading members producing about 700 units between 1988-1990.

(c) Housing Deficit

Surveys carried out in GAMA estimated the housing deficit in 1990 at 19,135 units of accommodation. That is based on the National Housing Policy standard of 2.5 persons per room and an estimated average of 6.0 rooms per house *(Table 4.16)*. The table also shows that at the current delivery rate of 2.0% per annum the total expected stock for 1995 will be 104,588 units, increasing to 140,776 by 2010. The corresponding estimated housing need of the population based on a growth rate of 4.4% per annum are (1995) 141,733 and (2010) 271,000 units. This means the deficit of 19,135 units in 1990 will grow to 130,224 units by 2010 (a growth rate of 10.06% pa) if current rates of production remain unchanged. Based on current net densities, about 15,000 ha of land will be required to accommodate the housing needs for 2010.

Table 4.16 Projected Population, Housing Need and Deficits for GAMA (1990 - 2010)

Year	Population in 000's	Estimated Stock	Estimated Need	Deficit	Total Needs(1990 base year)
1990	1,708	94,732	113,867	19,135	19,135
1995	2,126	104,591	141,733	37,142	47,001
2000	2,650	115,478	176,667	61,189	81,935
2005	3,289	127,497	219,267	91,770	124,535
2010	4,065	140,776	271,000	130,224	176,268

Source: Based on Demographic Studies and Projections and Housing Needs Assessment Study - APDP (1990)

The above figures indicate a very serious shortage of houses and this will become much worse unless there are marked improvements in annual delivery rates. If the rate of housing delivery is to match population growth and achieve a stabilized room occupancy rate of 2.5 persons per room, then an annual delivery of

6,849 units must be attained between 1990-1995. This must increase to 10,347 units per annum by the year 2010. The corresponding land requirements for the 5-year periods have been shown in Table 4.18 for various income groups in GAMA.

Table 4.17 Projected Population, Housing Need, and Recommended Delivery Levels

Year	Population Increase	Extra Housing Needed	Rec'ed Annual Delivery	Remarks
Up to 1990	287,025	19,135	-	The backlog of 19,135 housing units will be spread over 15 years at rate of 1,276per annum
1990-1995	418,000	27,867	6,849	
1995-2000	524,000	34,933	8,263	
2000-2005	639,000	42,600	9,796	
2005-2010	776,000	51,733	10,347	

Source: Accra Planning and Development Programme (1990)

(d) Residential Land Requirements

The demand for new residential land to provide an additional 176,268 housing units by the year 2010 is approximately 15,000 ha - allowing for a catchup in the backlog. The land requirement has been calculated on the basis of the present average net residential density, however, the residential densities will vary depending upon the quality of residential areas. According to the Housing Needs Assessment Study, the high income residential areas show approximately 7 houses per ha., the middle income areas an average of 11 houses per hectare and the low income areas more than 14 houses per ha. The land requirements, based on various net densities for the three income groups and services, are shown in Table 4.18 (i.e. 250,175 and 100 persons per hectare for the low, middle and high income groups respectively).

Table 4.18 Land Requirements for Residential Income Groups in GAMA 1990-2010

			1990		1990-1995
Income Group	%	Population	Area	Population.	Area
Low Income	58	168,040	770	242,440	1,111
Middle Income	32	92,712	546	133,760	788
High Income	10	28,973	265	41,800	383
Add 10% (Services)	-	-	158	-	228
Total	1002	89,725	1,739	418,000	2,510

Income Group	1995 -	2000	2000 -	2005	2005	2010
	Population	Area	Population	Area	Population	Area
Low Income	309,140	1,417	386,280	1,770	489,520	2,243
Middle Income	170,560	1,005	213,120	1,255	270,080	1,591
High Income	53,300	488	66,600	610	84,400	773
Add 10%(Services)		-	291	-	363	461
Total	533,000	3,201	666,000	3,999	844,000	5,068

Source: Demographic Studies and Projections & Housing Needs Assessment Study - APDP (1990).

4.4.4 Constraints

The degree to which housing demand can be satisfied depends on available resources and the constraints which operate within the housing delivery system. The four principal resources required to support housing delivery are:

(a) Land

The delivery of land for development and the need for a change in strategy has been discussed fully in section 4.3 . There is no shortage of land for development in GAMA, but access to it is a major constraint on housing delivery. There are, however, issues which relate to land utilization as a resource. The overall population density in the metropolitan area is 35 persons per hectare - which is low and indicative of its sprawling nature. The generous planning standards of between 0.14 - 0.20 ha/plot in government and 0.09 - 0.14 ha/plot in private residential areas is an underutilization of a precious resource. It also adds significantly to infrastructure and servicing costs. The revised building code standard of 450 m^2 will encourage more efficient use of land, however, this minimum standard for some types of accommodation could be significantly reduced and thus contribute to increasing the density and utilization of urban land.

(b) Housing Finance

Finance for housing construction is obtainable from four main sources under present institutional arrangements. They include: the Bank for Housing and Construction (BHC), First Ghana Building Society (FGBS), the State Insurance Corporation (SIC), Social Security and National Insurance Trust (SSNIT). The BHC was established in 1972 for the financing and implementation of housing and civil engineering schemes throughout the country. It was to provide mortgage financing through home completion, purchase property, new construction and home improvement loan schemes. It was also to support the development of the building materials industry and promote real estate development projects in the country. The lack of funds for long-term financing and other related problems have undermined the bank's support for housing delivery.

The FGBS and SIC fund housing directly through mortgage loans to applicants. However, the funds available are very small and the ceiling limits are well below that required to build a house. Mortgages are also obtainable from the commercial banks but these are not very popular because of high interest rates they charge. Some financial institutions and private sector organizations have mortgage finance schemes for their workers. The Government also operates a civil servants housing loan scheme for its employees. The SSNIT builds houses for purchase by individuals and organizations who are contributors to the fund. It provides employment - tied mortgage loans, but does not give credit for housing development by individuals.

While the above institutions are an important support to the home building industry, the contribution they make to financing housing is insignificant. Surveys conducted revealed that less than 2% of owners had access to mortgage finance and this was almost exclusively confined to the higher income group. Most of the financial institutions, including the banks do not have the deposits to release funds for mortgages. Even if they do they are inhibited by lending ceilings imposed by the Bank of Ghana and they are not able to give adequate loans for housing development. The banks therefore prefer to issue short-term commercial loans to long term loans for housing.

There is a desperate shortage of mortgage finance which the government recognizes. The recent establishment of the Home Finance Company will help boost access to home loan finance, but the basic minimum standard of house for which mortgage funds will be issued is well above that affordable by the majority of those wishing to enter the housing market. Access to funds for middle and lower income persons wishing to build a house will continue to be a serious problem unless new and innovative approaches are adopted for home financing.

Other types of housing finance are rent allowances which employers, including the government, pay to their workers. This housing subsidy is 20% of a workers's annual income and is paid monthly. Some senior and other officials who live in government bungalows enjoy heavily subsidized rents, for partially or, fully furnished government bungalows and flats. This is in lieu of rent allowance. This subsidy could be used to support housing programmes.

(c) Institutional and Technical Support

The potential to expand the housing industry in GAMA can only be translated into an effective programme, if the appropriate institutional and support mechanisms are in place and operating efficiently. It is government policy that it will no longer be involved in housing construction. It will facilitate housing development by strengthening the public institutions and organizations that support housing delivery. Specific areas requiring government intervention or support include:

Building material production
Training of skilled labourers and artisans
Development of real estate industry
Regulatory measures for housing development
Rent de-control policy
Development of infrastructure in new residential areas.
Funds for direct investment in infrastructure
International assistance for development in the above.

(d) Labour

The housing labour market has been confronted with a number of problems. The economic decline of the late 1970's and early 1980s led to a large portion of the labour force being involuntarily idle. In the cases of the SHC and TDC, there were lay- offs of up to 40% because of the decline and structural problems. The situation is improving with improvements in the economy. Another important problem is that apart from a few well organised building firms, the labour force in the private sector is poorly organised and deficient in managerial know - how. Developers using direct labour tend to lose materials, time and money as a result.

A new development that will pose problems for the labour market is the encouragement of the use of local building materials. There is inadequate knowledge in the use of clay bricks, micro concrete roofing tiles, etc in building construction.

With the need to increase yearly housing delivery to appreciable levels, urgent attention must be given to the labour market with a view to increasing its strength both in numbers and skills and, making it more efficient and effective.

(e) Others

Other important constraints include high costs of housing, lack of standardization in housing design and building materials (prefabrication) and current housing psychology which is opposed to innovations.

4.4.5 Housing Development Opportunities

The problems associated with housing in GAMA call for critical examination of existing planning, organisational and management systems and the design of appropriate strategies for effective and sustainable housing development. There are several opportunities open which could help alleviate some of the problems.

(a) Infill and Redevelopment

In the very low density inner city areas like West Ridge, North Ridge, East Cantonments, etc. some government houses and buildings have deteriorated and have outlived their useful life, others are in good condition but occupy large, valuable, underutilized plots. There is potential for redevelopment and in-filling on many of these sites. This would increase density and make effective use of under-utilised existing infrastructure. The increased density could be achieved through reformation of planning and building standards, regulations, changes in plot ratios and effective spatial organization of buildings, and the introduction of house-types such as detached, semi- detached and row houses.

(b) Inner City Redevelopment

In the depressed inner city areas there is the potential to develop innovative housing schemes combined with new business and commercial opportunities. This would provide means of diversifying employment in Ga settlements whose traditional economic activities associated with fishing will decline in future as onshore fish stocks become depleted. Such a scheme could also allow some large scale business and commercial development to offset housing costs.

(c) Upgrading of Depressed Areas

Urban upgrading has the potential to improve housing conditions - especially physical access and services. The concept of community participation in service delivery could also be pursued. This approach could encourage residents to make improvements to their houses by using improved materials for walling and roofing, installing or improving housing infrastructure, the local authorities supporting these with community infrastructure and services.

(d) Sites and Services Schemes

An off-shoot of the above programme will be an urgent need to resettle some households that might be displaced by upgrading schemes. Advantage could be taken of undeveloped lands in the vicinity of the upgraded communities or other suitable locations for the design of sites and services schemes to accommodate the displaced households. Such schemes could also be used to provide serviced land for low and middle income housing development in new areas.

(e) Completion of Unfinished Houses

There are over 8000 uncompleted dwellings in GAMA. This represents a substantial amount of locked-up capital in housing, serving little purpose. Completion of these dwellings is one of the quickest ways of adding to the housing stock. Many of these uncompleted houses are in state or parastatal ownership and may be sold off on completion and the funds used to provide basic infrastructure. The completion of these houses calls for strategies for determination of priorities for completions as well as funding arrangements. Such funding could come from special government loans, the Home Finance Company and housing finance institutions like SSNIT, SIC, or external sources.

(f) Increasing Access to Undeveloped Prime Lands

The large areas of vacant public land (believed to be in the order of 2,500 ha) could be developed and provided with basic infrastructure by the concerted efforts of development agencies and real estates developers. Similar arrangements could be made with private lands by introducing traditional land trust as noted in section 4.3. Land. A major problem in providing services to undeveloped areas is that developers do not have access to funds with which to pay for the extension and installation of basic infrastructure. For this purpose, special arrangements could be made with international aid and lending agencies to set up a fund for the private rather than the public sector to construct infrastructure.

(g) Land Bank for Housing Development

Consideration could be given to the concept of a land bank at this stage and an inventory of all unencumbered prime lands under state and parastatal ownership prepared for the purpose. The Tema Development Corporation already has a large land bank. The large tracts of land held by public corporations could then be consolidated into a land bank to be managed by Local Government in GAMA, or a corporation similar to TDC to facilitate land supply and housing in GAMA.

(h) Private Housing Finance Institutions

The establishment of housing co-operatives, building societies and other private housing finance institutions could be encouraged to broaden the sources of capital formation for housing development. This would be in addition to the Home Finance Company, which is the main source of housing finance at the moment. The urban poor could be encouraged through co-operatives to pool money for building materials, land, labour and other technical services.

(i) Reform of Planning Standards and Building Regulations

The reform of planning and building standards, especially regarding plot sizes and building materials for residential development would reduce costs, not only for the purchase of land but services as well. Also innovative building design which encourages incremental development could be pursued for the benefit of the urban poor who normally take longer time to complete house construction. Reforms in standards for building materials would reduce costs.

(j) Local Building Materials Production

One of the objectives of establishing the Bank for Housing and Construction (BHC) was to develop and support the establishment of a local building materials industry. Its subsidiary company REDCO failed through a combination of poor management, shortage of finance and inappropriate investment. If the building industry is to lead the way to economic recovery and the dependency on imports is to be reduced, new means and ways of supporting the local building materials industry must be found.

(k) Restructuring and Privatisation

The existing state and parastatal organizations involved in the housing industry are poorly managed, inefficient, and lack capital, entrepreneurial and manpower resources needed to turn them into viable operations. The restructuring, full or partial privatisation of the SHC and TDC would significantly boost the housing delivery system. The excessive labour force of these organizations could be shed and encouraged to form housing construction co-operatives or firms - with financial support for the purchase of machinery and equipment. They could then undertake housing construction contract works.

(l) Development of Maintenance Culture

A well developed maintenance culture would extend the life of houses, enhance the urban environment, and improve the health and security of residents. The timely repair of leaking roofs, cracks in walls, gutters, adequate site drainage could improve conditions of buildings and quality of the residential environment. Promotion of a maintenance culture is important to maintaining the housing stock.

(m) Public Education

There is a general need for the exposure of the building construction public to alternatives in designs and building materials with a view to creating an awareness as to their acceptability and reliability. This will change current biases and entrenched tastes. The need for change will be facilitated by public education.

4.5 URBAN LANDSCAPE

4.5.1 Introduction

The physical appearance of the urban environment is a product of cultural, social, and economic and technological forces which when combined with administrative and other constraints have moulded the character of different parts of the city. Two important elements that have a major influence in giving different parts of the city their particular character or appearance - and hence quality - are townscape and landscape. The following section addresses issues affecting the quality of the urban environment.

4.5.2 Townscape

(a) Characteristics

Townscape is a term used to describe the characteristics and form of the urban environment. There is no uniform theme to development in Accra, but there are areas which have different spatial and architectural characteristics which give rise to a variety of townscape features. The historic Osu - James Town area has a close urban form with narrow streets, multi-storey dwellings and intensive street activity. There are several historic buildings like the Castle, Ussher Fort, the light house, customs house, Franklin house, etc., which have unique architectural features and heritage value *(see Photographs 5 & 6).*

The traditional housing areas like Labadi, Teshie, Adabraka are intensively developed with predominantly single storey detached of rendered block or stone and corrugated iron roof sheeting. Many of these are environmentally depressed areas, characterised by poor quality housing, low incomes and over crowded conditions. Surrounding traditional areas is a large band of immigrant housing which reflect cultural and religious needs. Nima and Mamobi are intensively developed, predominantly Moslem areas, with many narrow lanes, small access roads, and single storey dwellings.

Many of the inner city areas of Accra, developed prior to and immediately after independence, are characterised by large spacious plots with a single bungalow set in landscaped grounds. This reflects very much the traditional urban development pattern of many ex-colonial cities. Such areas generally have a high quality environment and good services. The townscape of the expanding peripheral areas consist of a mixture of dispersed low density housing areas in various stages of completion and several very dense low income areas built around older villages such as Ashiaman and Madina. The fragmented spatial structure of these outer areas destroys the continuity of urban form. The activities in the city such as the harbours, markets, chop bars, lorry parks and street hawking add an active dimension to the townscape. These activities, together with the urban architecture, give Accra its character.

(b) Issues Affecting Townscape

The townscape of Accra is the product of economic, social and cultural forces which have interplayed in the different residential and business areas of the city to give a variety of townscape features. The tight spatial pattern and intense form of development in the inner city areas, unfortunately, have created intolerable living conditions and a very degenerated physical environment. How to create additional space, improve and upgrade structures in these areas are issues which require a great deal of research and innovative solutions.

The Central Business District in particular lacks the image of a major city. The poor design and location of buildings, the incompatable landuse structure, lack of public open spaces are issues which must be addressed in future if the image of the CBD is to improve. The city requires a centre, with tall buildings grouped together, with a well defined street and open space structure.

4.5.3 Landscaping

(a) Characteristics of the Landscape

Landscape is a term used to describe the natural features of the environment such as prominent hills or outcrops, vegetation pattern and aquatic features. Landscaping is the process of softening the hard images of the city created by large open areas, buildings and other structures through planting of trees, shrubs and grassing and furnishing and decoration of public places and spaces.

The city has several dominant natural landscape features such as Legon, Malam and Akwapim Hills, the lagoons and the coastline. The undulating topography created by the drainage basins also gives rise to a changing landscape throughout the city. The natural vegetation of the landscape has all but disappeared but many areas are well endowed with trees; some major roads are lined with mature trees and shrubs. The city has a number of formal squares and public spaces which are mainly ceremonial. Many of these have monuments or statues which commemorate past events in the nation's history.

(b) Issues Affecting the Landscape

The urban landscape of Accra is undergoing a rapid process of detrimental change. Large numbers of trees have been lost through disease, old age and natural processes - especially coconuts along the coastline. The lagoons and the coastline have become receptacles for urban waste. Large areas of land have been denuded of vegetation by careless tree felling and clearing for development. Sand and gravel winning on the beach and inland have created severe erosion problems and a scarred landscape.

Legislation to protect the landscape is weak and unenforceable. Trees are cut down needlessly or damaged by improper pruning. Most people remain ignorant of the value and need to protect and restore the important landscape features in the urban environment. Programmes to encourage tree planting started many years ago, have stalled through lack of funds and interest. There are no guidelines for landscaping formal areas and roads and as a result many trees and scrubs planted are either unsuitable or grow up to interfere with engineering services, road pavements and motorist visibility.

There is need for public education to help protect the landscape and townscape character of GAMA. Guidelines should be prepared which list species of plants suitable for both domestic and formal landscaping. Legislation should be strengthened to protect trees and important elements of the natural landscape, and enforcement should be delegated to the community level. An expansion of the nursery industry is required. Cleaning up the lagoons and waterway systems is necessary to restore the ecosystems and the scenic beauty of the lagoon and waterway areas.

4.5.4 Environmental Quality

The Housing Needs Assessment and Environmental Studies of Accra raised the very serious problem of the quality of the urban environment and the squalid conditions of some residential areas in the inner city. Poor housing, drainage, sanitation, lack of privacy and disease contribute to conditions which are not fit for human habitation. Nevertheless, such conditions cannot be eliminated overnight. There are simply not enough resources available which can be allocated to environmentally depressed areas to improve their immediate situation. Relocation also creates enormous social problems as many people living in depressed areas of Accra depend on these for their livelihood. The upgrading of these depressed areas is a viable alternative to improving environmental quality.

The Housing Needs Assessment attempted to classify environmental conditions in Accra through a set of criteria related to provision of services and access to facilities such as toilets, bathrooms and kitchens. The following communities were assessed as having the worst environmental conditions in Accra and Tema.

James Town
Sukura/Russia
Mamprobi
Sabon Zongo
Ashiaman
Osu
South Odorkor
Mataheko
Madina
Abeka
La
South Teshie
Accra New Town
Kotobabi
Tema New Town
Nungua
Alajo
Nima
Maamobi
Chorkor

Improvements to the quality of depressed residential areas will be a long term process. It will depend greatly on the initiatives and willingness of communities to participate in upgrading projects. Funds for upgrading will be limited and it will take over 20 years to upgrade all of the above communities. The problems which give rise to poor conditions in these communities are varied; some relate to the provision of social infrastructure such as schools and medical facilities, while others relate mostly to the provision of engineering services. The issue of assessing the priority areas for improvement will require further research to be carried out in the next two years followed by the preparation of a comprehensive environmental improvement programme.

Chapter 5

TRANSPORTATION, ENGINEERING SERVICES AND ENERGY

5.1 TRAFFIC AND TRANSPORTATION

The traffic and transportation system in GAMA is based on the road and rail network. There is no internal air or water transport system in the metropolitan area. Kotoka International Airport, which also services domestic flights, and Tema Port and Harbour are the terminal centres for international transportation. The metropolitan area has good road connections with the rest of the country, but rail connection is only to Ashanti and Western Regions. Neighbouring countries can be reached by road, air and sea transport, but not by rail.

The 1970s and early 1980s saw a steady decline in traffic volumes and use of transportation facilities. The Economic Recovery Programme (ERP) made a concerted effort to halt the decline and restore the network into reasonable working order. Much has been achieved to date on the major road network, but little on the local/access roads. Construction of new roads has been minimal.

Institutional arrangement for development and administration of traffic and transportation is fragmented and the roles and responsibilities of ministries and agencies are sometimes not clearly defined. Figure 5.0 shows ministerial and other agency responsibilities for operating various aspects of the traffic and transportation system.

The following sections summaries the existing situations and issues affecting the current and future transportation system for the metropolitan area. These are discussed under the four modes of transport in use.

5.1.1 Road Transport

(a) Existing Road Transport System

(i) Road Network

As at 1990 the road network comprised about 550 km of paved roads and 400 km of unpaved roads. Of the paved roads 75 km are main arterials whilst the rest are minor arterials, collectors and local roads. There is estimated to be 300 to 400 kms of unformed road not yet engineered or constructed. Some of the latter form vital missing links in the arterial network. The primary road network in Accra radiates out from the central area along the principal roads leading to the major regional centres in the country. Traffic corridors have been created between and along all major roads. The outer motorway, Achimota Road and the Ring Road are the major lateral arterial distributors of traffic to various parts of the city .There are, however, not enough east-west orbital roads across the city. Between the main corridors there has been a network of poorly defined and constructed minor roads developed as part of an urban infilling process.

In Tema a "grid-iron" network services the various communities along the three arterials running north-south. Accra and Tema are linked by two main arterials - the Accra-Tema Motorway and the coastal route through Teshie and Nungua. The central link as proposed in the 1958 Master Plan has not been developed.

The inter-regional roads have been repaired, however, the subbase on many sections of these roads has deteriorated to the point where reconstruction will be necessary. The rural network of roads is poorly developed and most constructed roads have lost the sealed surface and are in varying states of disrepair.The existing main road network as at 1990 is shown on Figure 5.1 and consists of:

Table 5.0

MINISTERIAL RESPONSIBILITIES

	Min. of Justice	Min. of Interior	Min. of Trans. & Comm	Min. of Roads & Highways	Min. of Fin. & Eco. Pln.	Min. of Trade	Local Government
Policy Formulation			Decision on Capital and recurrent expenditure; Railways, Ports and Aviation; Decisions on levels of fares, Railways, Roads, Ports and Harbours.	Decision on Capital and recurrent expenditure on Roads;	Decision on Capital and recurrent expenditure Negotiation for Foreign Loans; Decision on Level of duties, taxes;		
Planning			Planning of Railway networks, Ports & Harbours, Airports; Developement of design, construction & standards for Railways, Ports & Airports Planning of line haul systems.	Planning of the street/ Road network & facilities, Developement of design, construction and standards for streets/roads.			
Implementation/ Development			Design, construction & mtce of Railways, ports & harbours & airports Installation of traffic management/control devices for railways, ports & harbours and airports. Operation of line-haul systems. Purchasing of vehicles, rolling stock, ships, and aircraft.	Design Construvtion of of arterial roads system Installation & mtce of traffic management/control devices for raods/streets		Allocation of import lincences for importation of vehicles.	Design, construction of tertiary road system & mtce of primary, secondary and tertiary system; Revenue collection.
Regulation & Control	Drafting of Laws relating to the transport sector.	Issuing of registration Nos. to newly imported vehicles; Examining prospective drivers and issuing lincences; Examining piriodically vehicles and issuing road worthiness certs.; Enforcement of traffic regulations.					

Expressway/Motorway	34 km	(3.6%)
Arterials (Main & Minor)	103 km	(10.8%)
Collectors & Minor Roads	813 km	(85.6%)

(ii) Carriageways

Almost all the roads in Accra are two-lane single carriageway. The exceptions are:

- Accra-Tema Motorway from Tetteh Quarshie Circle to Tema (Tetteh Quarshie Circle to Mallam designed as double carriageway but only one carriageway constructed).
- Labadi Road from Osu Ako Adjei Junction to a point about 1 km beyond Kpeshie Lagoon.
- Kwame Nkrumah Avenue from junction with Liberia Road to UTC.
- Ring Road East, Central and West to Guggisberg Avenue.
- Kaneshie-Mallam Road from Obetsebi Lamptey Circle to Mallam.
- Brewery Road from Obetsebi Lamptey Circle to Accra Brewery
- Achimota Road.

(These have two-lane dual carriageway except the Kaneshie-Mallam Road which has three-lane dual carriageway. Service roads are intermittent or non-existent except on the Kaneshie-Mallam Road.)

The width of most carriageways on the arterial road network is narrow, and much of the road structure in saturated soil areas has broken up. Lack of maintenance has resulted in a substantial loss of sealed surface - especially on the secondary and local level network.

(iii) Traffic

Traffic volumes carried by the main roads are shown on Figure 5.2 for 1989 peak hour flows. Sustained peak traffic flows occur between the hours of 07 hrs - 09 hrs and 17 hrs to 19 hours. Speed/delay studies indicate that average speeds on many of the main roads in the city are about 10-15 km/hr. At times the speed is as low as 5 km/hr in some sections. This has a major bearing on the level of service discussed below.

Origin and destination studies indicate that 60% of vehicle trips are between the inner city and outer regional areas; and 75% of passenger trips to the city originate from outlying regional centres to the central area. This level of passenger traffic movement affects severely the capacity of the roads and the levels of service (LOS). Levels of service are rated as follows:

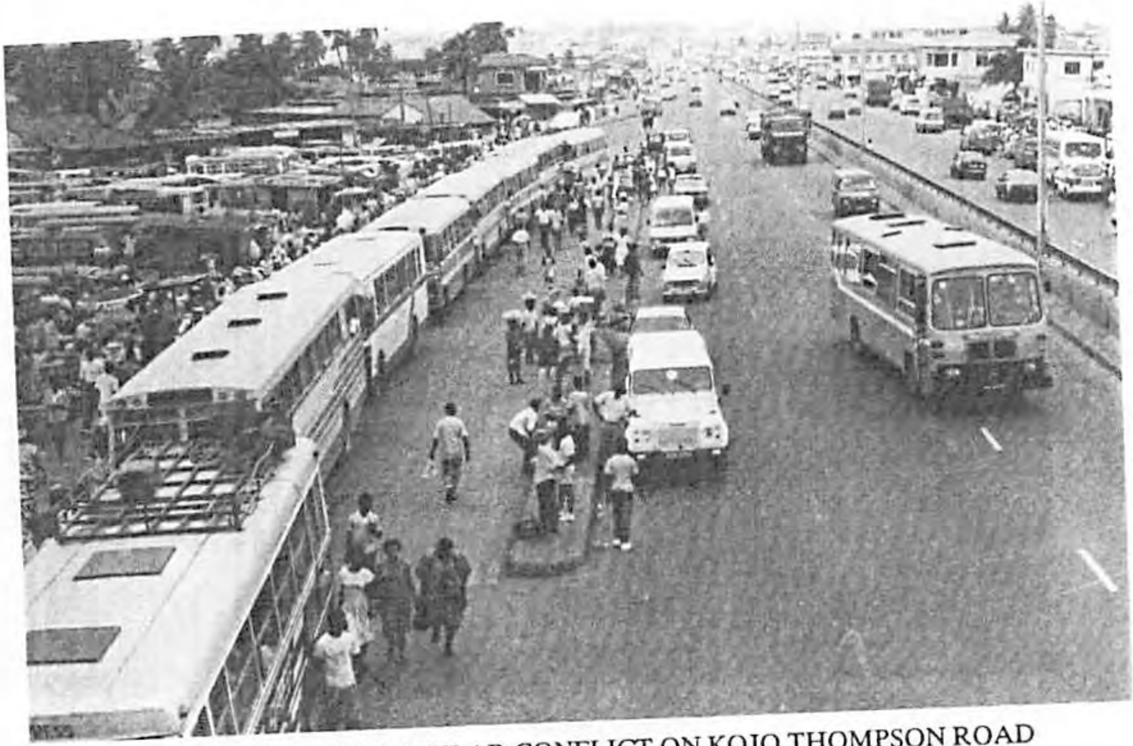
Table 5.0

Road Operation	**Average Speed.km/hr**	**Level of Service (LOS)**
Free Flow	>50	A
Stable Flow (Slight delay)	30-50	B
Stable Flow (Acceptable delay)	25-30	C
Approaching congestion	20-25	D
Congestion	15-20	E
Forced Flow (Jammed)	<15	F

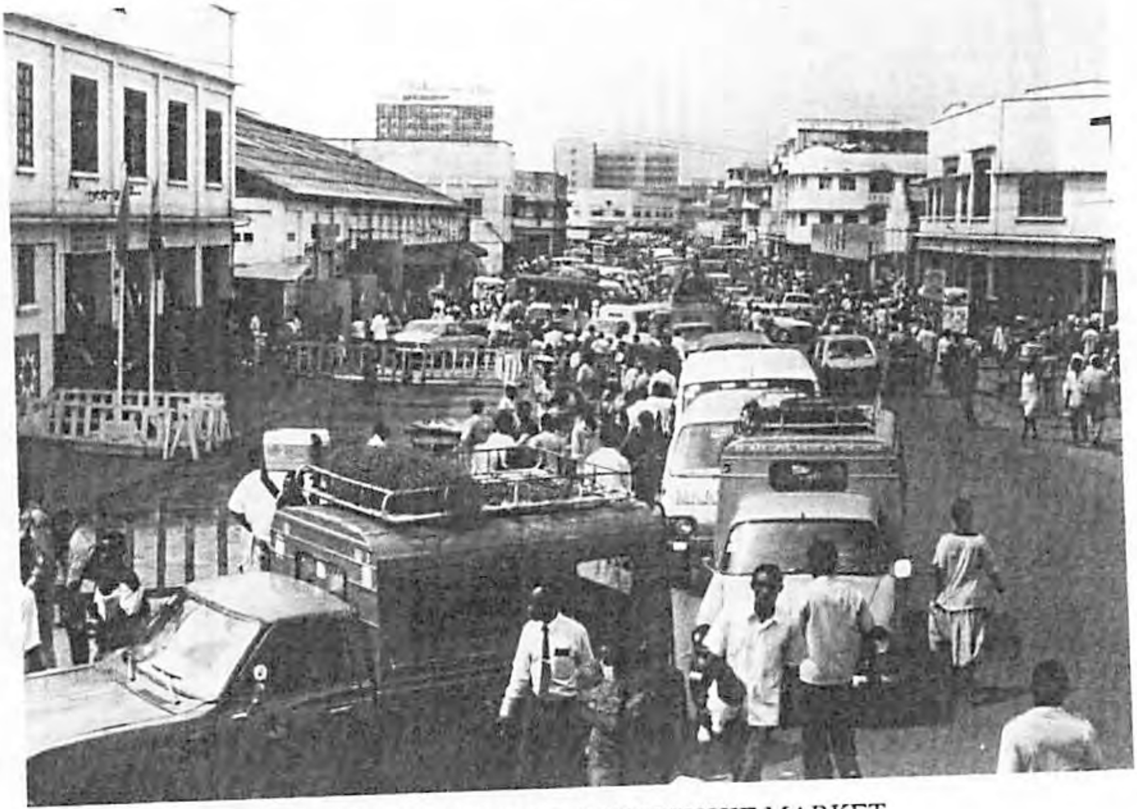
CENTRAL LORRY PARK - TUDU

INTRA-CITY LORRY PARK - NEW TOWN ROAD

TRAFFIC AND TRANSPORTATION

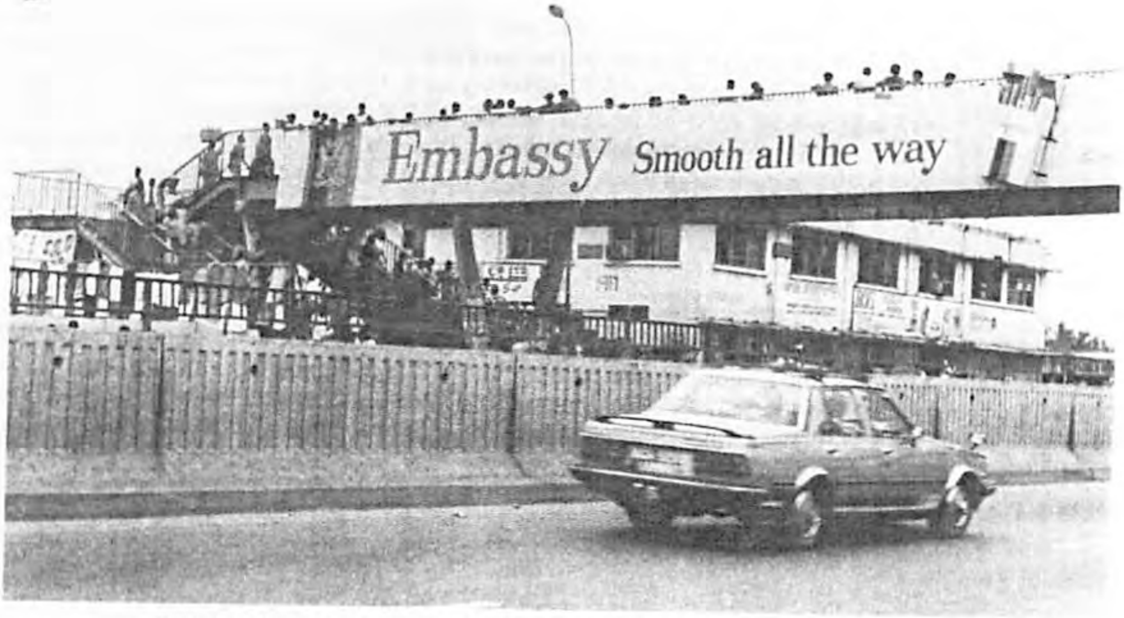


PEDESTRIAN - VEHICULAR CONFLICT ON KOJO THOMPSON ROAD

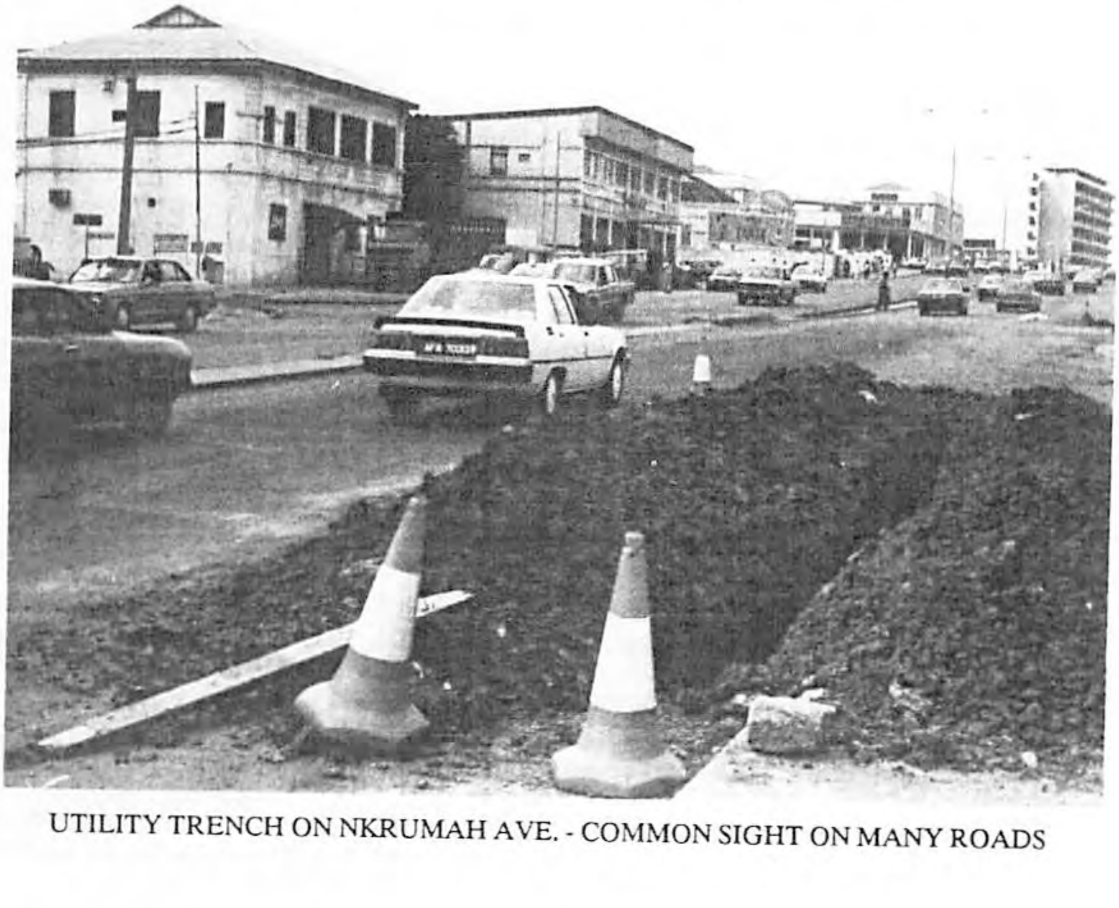


PUBLIC TRANSPORT AT KANESHIE MARKET

TRAFFIC AND TRANSPORTATION


Embassy Smooth all the way

PEDESTRIAN OVERHEAD BRIDGE AT KANESHIE MARKET



UTILITY TRENCH ON NKRUMAH AVE. - COMMON SIGHT ON MANY ROADS

TRAFFIC AND TRANSPORTATION

In 1987 it was estimated that 30% of the network was operating at LOS F, and overall, the network was operating at LOS C. It is anticipated that if nothing is done to improve the efficiency of the network in the next 5 years, half of the roads would operate at LOS F, with an overall, LOS D. In 10 years time 80% of the network will operate at LOS F and overall, an unacceptable level of LOS E. The consequences of such low levels of service would seriously affect the economic and social life of the city. Apart from loss of time, vehicle operating costs would escalate and accident rates would rise significantly. Levels of Service on major roads in Accra is shown on Figure 5.3.

(iv) Modes of Transport

Public and private transport use the same road space. The various modes of transport range from heavy trucks and buses, to taxis and motor-cycles and bicycles. Table 5.1 shows the estimated mean numbers of vehicles by types using the roads of GAMA as at 1989. These figures have been obtained from taking the average road worthiness registrations for the periods January/June 1989 and July/December 1989.

Table 5.1 Estimated Vehicle Registration

Types of Vehicle	Mean No. of Vehicles on Road
Motor Cycles	1,138
Private Cars	32,406
Taxis	8,109
Hiring Cars	130
Buses less than or equal to 33 seaters	8,730
Buses greater than or equal to 34 seats	1,063
Trucks	3,435
Articulated trucks	646
Tractors	2
Government vehicles	11,132
Unregistered Vehicles (estimated)	11,000
Total	77,791

Source: Min. of Transport and Communication Bulletin 1989.

There are estimated to be up to 11,000 vehicles on the roads without road worthiness certificates. The Ministry of Transport estimated growth rate in vehicle population is 7.5% in 1990, dropping to 5.2% in 1991-1995 and 3.2% in 1996-2000. The total number of vehicles using the roads in GAMA is estimated at 84,000 in 1990, increasing to 103,000 by 1995 and 116,000 by the 2000.

Traffic surveys indicate that at peak hours about 65-70% of the vehicles on the road are private saloon cars and taxis/hiring cars; trotro/light buses 12%; heavy buses 3%; light trucks 12%; the rest being made up of medium trucks, heavy trucks, tractors, etc. There are no records kept of bicycle usage or numbers. Although numbers are currently insignificant, there are indications that given encouragement the bicycle population would increase, and provision should be made for this means of transport in future.

Pedestrian movement on walkways and crosswalks is very high - especially in the CBD. Upwards of 20,000 people an hour pass in and out of Makola market and 14,000 at Kaneshie market. Pedestrian flows are high

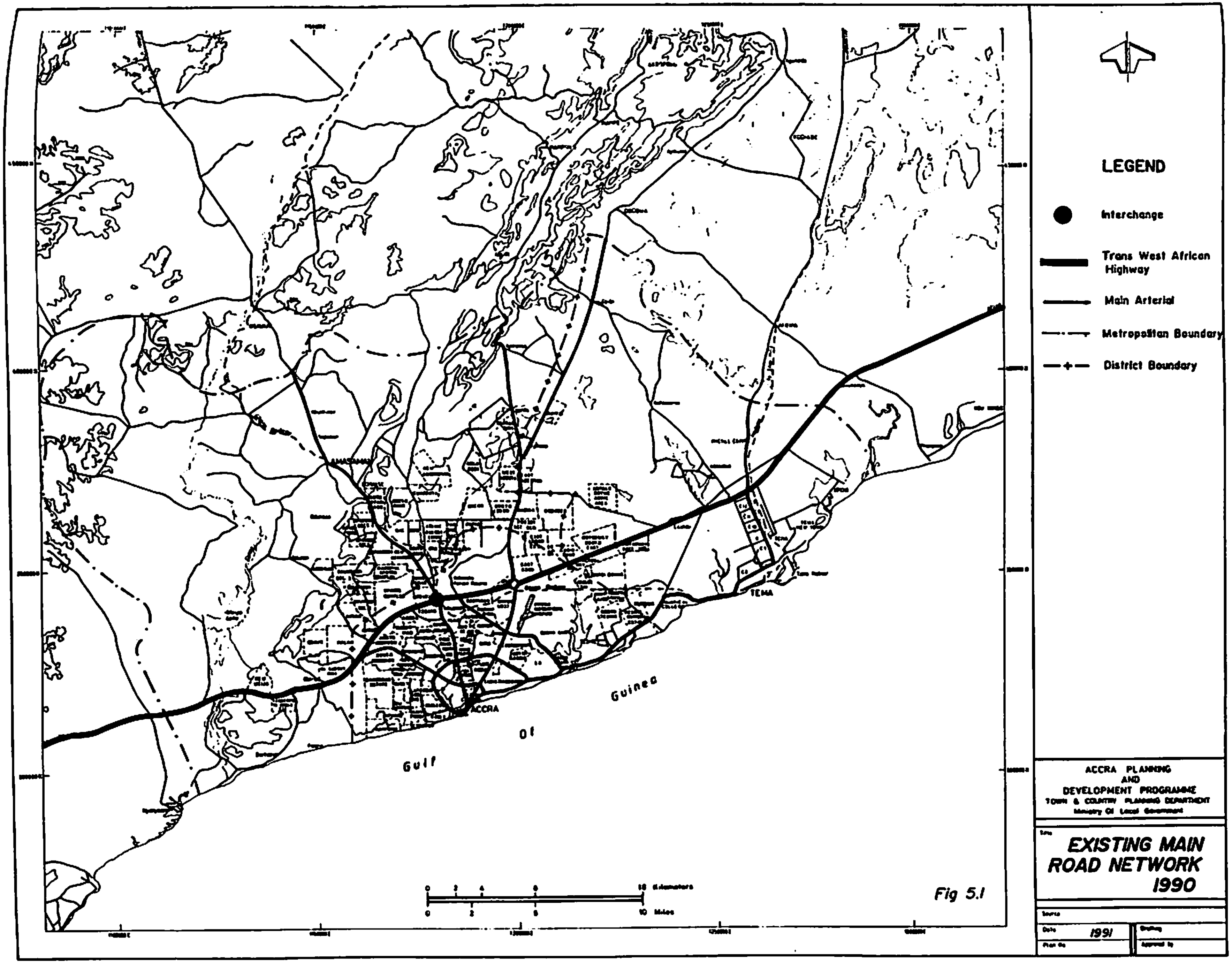

LEGEND
Interchange
Trans West African Highway
Main Arterial
Metropolitan Boundary
District Boundary
ACCRA
TEMA
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 5 10 Miles

Fig 5.1

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

EXISTING MAIN
ROAD NETWORK
1990

Date 1991

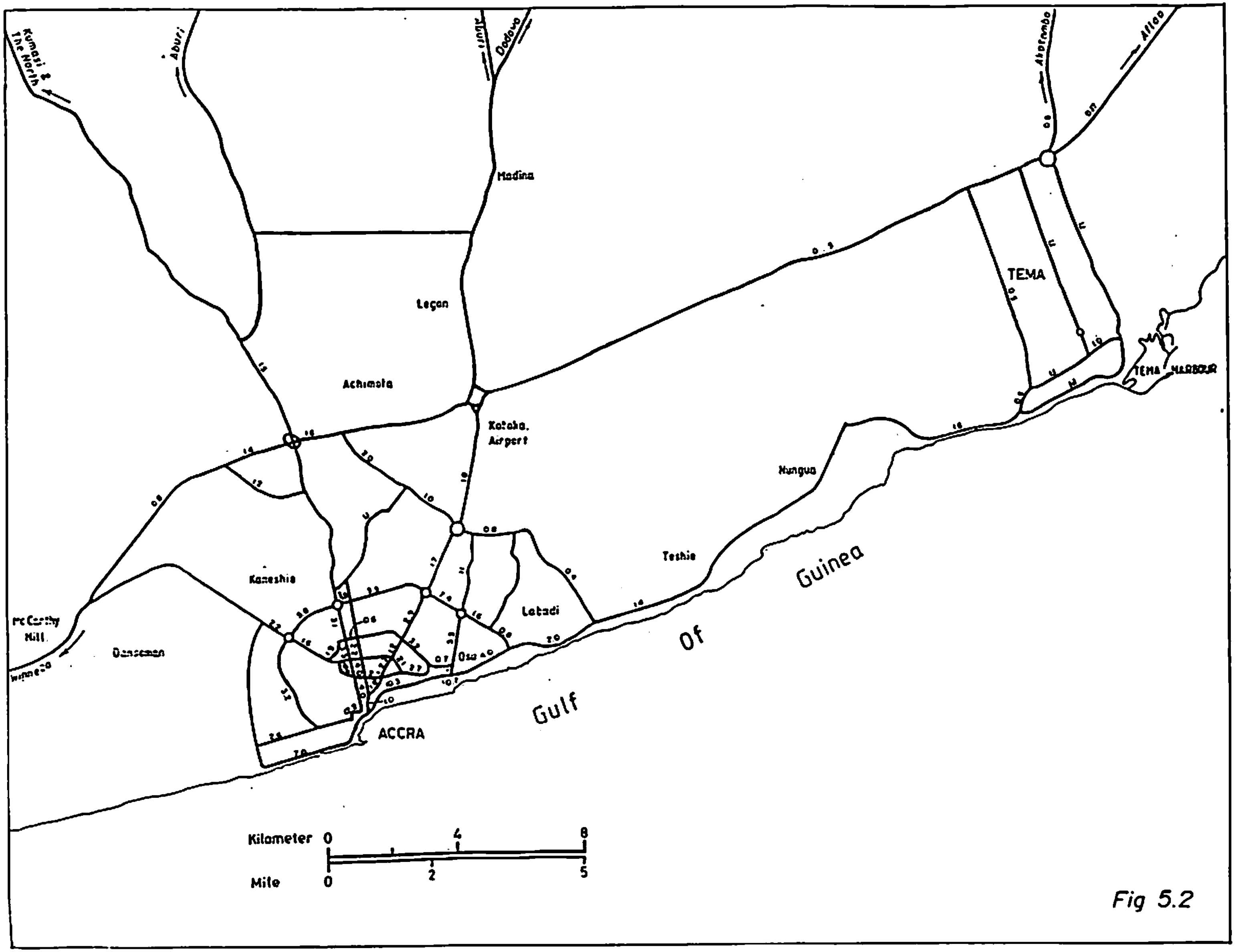

Kumasi & The North
Aburi
Aburi
Dodowa
Madina
Akosombo
Aflao
TEMA
TEMA HARBOUR
Legon
Achimota
Kotoka. Airport
Nungua
Teshie
Labadi
Osu
Kaneshie
McCarthy Hill
Winneba
Dansoman
ACCRA
Gulf Of Guinea
Kilometer 0 4 8
Mile 0 2 5

Fig 5.2

N O T E

Central Area Below Ring Road Taken 1987

Outer a Area Between Ring Road & Motorway Taken 1990

Tema Tken

Tema Taken 1990

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

Title

PEAK HOUR TRAFFIC VOLUMES ('000 Vehicles/Hour)

Source			
Date	1991	Drafting	
Plan No		Approved by	

TRAFFIC VOLUMES

Fig 5.2

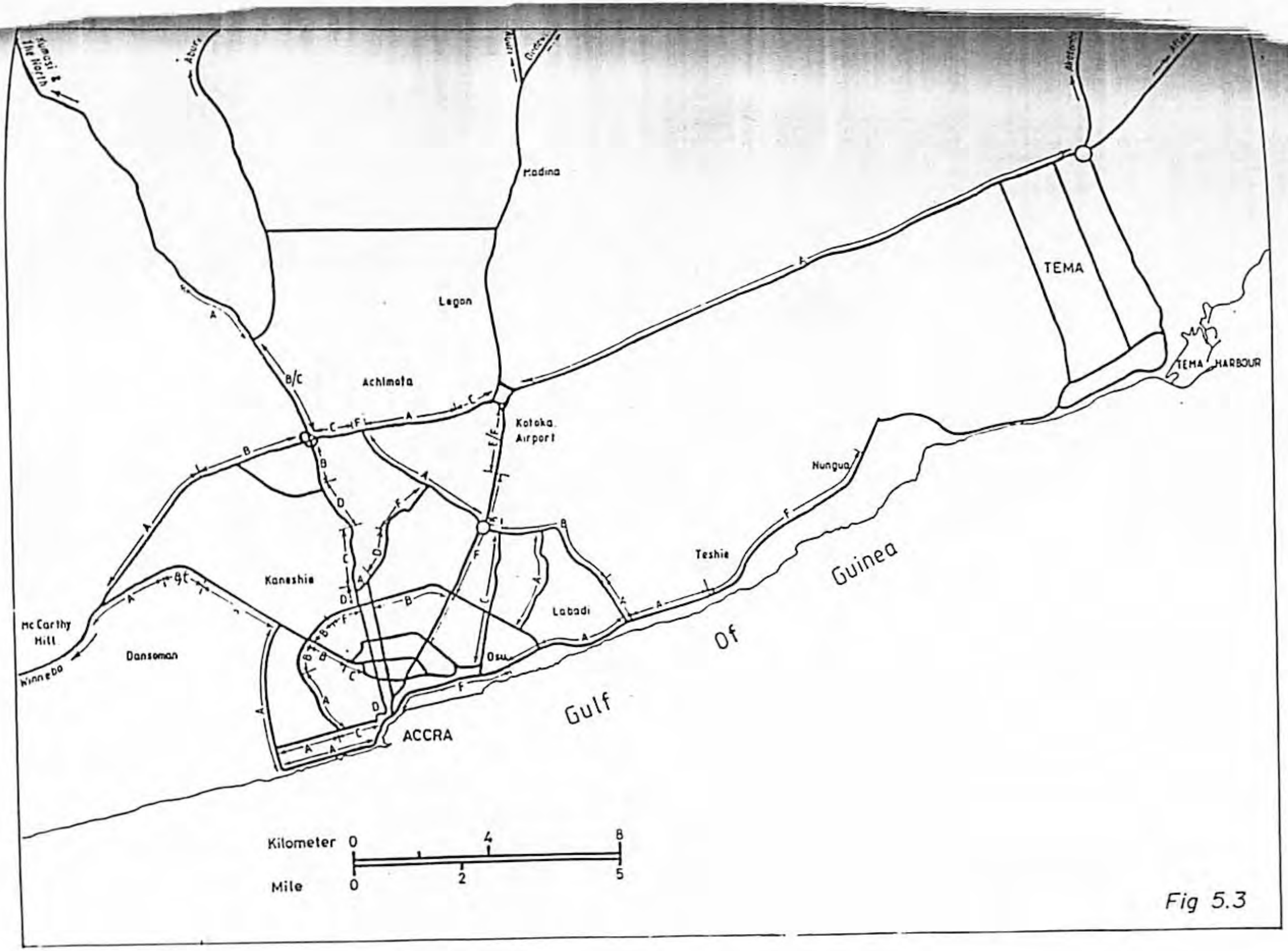

Kumasi & the North
Aburi
Dodowa
Akosombo
Aflao
Madina
Legon
Achimota
Kotoka Airport
TEMA
TEMA HARBOUR
Nungua
Teshie
Kaneshie
Labadi
Osu
Mc Carthy Hill
Dansoman
Winneba
ACCRA
Gulf Of Guinea
Kilometer 0 4 8
Mile 0 2 5

Fig 5.3

LEGEND

A - Free Flow

B - Stable Flow (Slight Delay)

C - Stable Flow (Acceptable Delay)

D - Approaching Congestion

E - Congestion

F - Forced Flow (Jammed)

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

Title

LEVELS OF SERVICE
(adapted from Deleuw Cather's ADTMIS Studies)

Source

Date 1991

Drafting

Plan No.

Approved by

around all trotro and bus stations and foot paths are inadequate to meet pedestrian flows in the CBD. Streetside trading is a major cause of pedestrian congestion in the CBD.

(v) Public Transport

Public transport operations in GAMA are characterized by inadequate capacity, infrequent and unreliab time schedules and the confining of operations to limited routes. Limited financial resources for new vehicl and poor management by both parastatal and private transport operators also contribute to the overall deficiency in the transportation system. Government imposed constraints on fares exacerbates the situation by reducing the operating profit margins, forcing operators to overload vehicles, causing excessive vehic wear and tear and increasing the possibility of accidents. There is a need for both private and public mas transport operators to be funded adequately and better management practices adopted. A well-managed urban railway system would alleviate many congestion problems.

Within the public service there are a large number of buses which operate as shuttle services for ministry staff. These buses remain idle for most of the day. Government has announced that as from 1 July 1991 it will no longer provide transport for employees and will dispose of the government bus fleet. This better utilizatio of public service buses will improve public transport capacity, but there still remains a problem that there ar excessive numbers of private vehicles on roads. Unless private vehicle use is restricted in areas like the CBD during peak hours, congestion will inhibit any improvement to the public transport system.

(b) Issues Affecting Future Road Transport

(i) Design Standards and Rights of Way

Most roads in Accra were not built to carry the volumes and types of vehicles now using them. Many arterial roads have only two 3.25m lane carriageways which are completely inadequate to meet volume numbers o to maintain adequate safety standards. There is no provision for non-motorized vehicles like bicycles an carts, bus and emergency stopping lanes and turning areas. Pedestrian walkways, where they exist, are often narrow, broken and otherwise encumbered.

Pedestrians find themselves using the carriageway causing severe pedestrian/vehicular conflict. In most cases open gutters mark the edge of the carriageway instead of kerbs and endanger safety of pedestrians as well as vehicles. The right of-way is often not sufficient to accommodate services nor to allow for expansio of the road. In many parts of the network the right of way has been encroached upon particularly in heavil congested areas.

The road pavements in many cases were not designed to carry present day heavy axle loads. Maintenanc has been minimal on all roads and has resulted in accelerated deterioration. Severe pavement failures are common on the main roads as well as minor roads and much of the secondary sealed road surface has now been lost. Vehicle operating costs and accident rates have increased significantly. It is essential that new design standards are adopted, the network is improved and rehabilitated followed by a sustained and adequate maintenance programme.

(ii) Congestion

The deteriorating condition of the road network has led to growing congestion as the vehicle number increases. More and more vehicles avoid the bad roads and use the few roads which are in reasonable condition, adding to congestion. The inner city of Accra is the most congested part of GAMA. Tema traffic flows are not affected by congestion, to the same extent as Accra. One of the principal reasons for heavy congestion in Accra is that the existing transportation and interchange system is centrally orientated and the lateral, network poorly developed - except for the Ring Road and the Motorway. This necessitates cross city travelers coming into the central area to change to another service which, in turn, overloads intra-city traffic on an already congested radial arterial network. The configuration of GAMA as a whole requires assurance rapid east-west lateral movement. The Motorways (Central & West) are fast losing their function as pressways because of numerous entry points and this needs to be addressed. The Trans West African ighway requires an expressway uninterrupted by local traffic. Other causes of congestion are attributed to ssues outlined below.

(iii) Protection of Corridors

The rapid and uncontrolled nature of urban expansion has made it difficult to develop a rational network. Even where layouts have been prepared and approved, funds have not been made available to clear even the right of way. As a result there is rampant encroachment on the right-of-way. It is important that when a transportation plan is prepared the right-of-way, especially the main traffic corridors, are properly designated and protected in order that once funds are made available for road construction, this can commence without delay.

(iv) Funding

Adequate funding of all stages of development of traffic and transportation has not been satisfactory. Financing transportation involves not only provision of roads but also the acquisition of the right type of vehicles and management of the system. Sources of funds must emanate from user contributions. Currently road development and maintenance in GAMA is financed from the Road Fund which derives its sources from road user taxes, with a rather low level of supplement by the Accra Metropolitan Authority.

The development of the main network has been the responsibility of central government. The AMA shares responsibility for maintenance with the Department of Urban Roads during the current transition period to hand over full responsibility to the former. When it comes to the development of local roads within various communities, the situation is confused. Funds should come directly from developers, but the cost of acquisition of land and development charges levied bear no relationship to the cost of providing services. The result is that a number of new communities, including high class residential areas, have no roads, only tracks. Provision of various modes of transport is mainly financed by the private sector. But this sector must be encouraged with the right policies to stimulate the growth of public transportation, especially the high occupancy vehicles.

For the transportation problems to be alleviated in Accra, the level of funding will have to be increased and sustained. The missing links, the bad state of the roads and the congestion in the business centres are the result of funding, planning, development, operation and maintenance not being sustained, coupled with lack of policy direction for financing the acquisition of the right modes of transport.

(v) Land-use

Transportation is directly related to the land-use pattern. Mobility between residential areas, employment centres and other traffic generating centres like markets, and social centres must be assured by adequate capacity roads and/or railways over a long term horizon. The land-use pattern of GAMA has changed considerably since the 1958 Master Plan was adopted. These changes have brought about increased pedestrian and vehicular traffic and altered the traffic pattern, and sometimes the function of the road itself. There are many proposals which would further alter the traffic volumes and/or pattern, eg. new suburban residential developments, higher density infilled residential areas, and new inter-city bus terminals in the inner city.

There is need for proper consideration to be given to landuse proposals and road development in future. Decongestion of traffic in the inner city, can be achieved by decentralizing many landuse activities where the prime function is the provision of day to day goods and services. One of the principal reason for trips to the CBD is to purchase day to day items and other small, in many cases informal sector, business. Relocation to planned subregional centres where a critical mix of day to day goods and services and informal business can take place is necessary to reduce the number of non essential CBD orientated trips. This structural change

[illegible]

in the way people use the city is a long term strategy, which must be under taken by persuasion rather than relocation.

(vi) Efficiency of the Transportation System

The current road network in GAMA does not make for an efficient system of transportation. As noted earlier, it is centrally orientated but the lateral network which would assure rapid east- west movement between the main radial corridors is poorly developed with missing links here and there. There is heavy congestion on the roads, especially in the inner city which is aggravated by the high level use of low occupancy vehicles. Even when the current road network is developed to its full capacity, it cannot cope with mobility demands of the increased population over the long term. A more efficient system of mass public transport will have to be developed. This will involve a change in transportation policy away from taxi and private vehicle usage, to buses and the establishment of a mass transit system.

There are, however, some geographical constraints which form physical barriers in the development of an efficient network which would facilitate easy mobility between communities, places of work and places of leisure. These are Korle Lagoon, Sakumo Lagoon and a number of smaller lagoons, flood plains of streams and main drainage and low lying areas. They affect the arterial road and railway network which need to circumvent them or else go through them at high cost.

There are other barriers which impose limitations on road alignments making it difficult to develop an efficient network. These include: Military enclaves between Accra and Tema and other security areas within business and residential areas in the metropolis. While the former affects the arterial road system between Accra and Tema, the latter impose limits on what can be done to improve accessibility and mobility within communities where they occur. The location of Kotoka International Airport, attracts a large concentration of traffic on certain international flight days. The present location of the Inter-City Railway Terminal bringing to the inner city not only passengers but, more importantly, goods (mainly foodstuffs) attracts commercial vehicles into an already congested area.

(vii) Traffic Management

Data collection and analysis is an important issue towards the provision of efficient systems. Until recently this has not been properly addressed and there is accordingly insufficient data for planning purposes. Traffic management is another issue which needs more serious attention. For complete efficiency of operation of the transportation network, traffic and transport should be controlled for safety and fairness to all road users. There have been limited control devices like road-line markings, road signs, traffic lights, etc. and legislation to regulate the use of the road. Information and monitoring systems are lacking for disseminating and ensuring proper codes of behaviour for all road users. Other issues affecting the safety and welfare of road users involve enforcement of third party insurance, training and testing of drivers (including motorcyclists), training of traffic police/city guards/TASIT to ensure an effective and fair enforcement of traffic regulations.

(viii) Future Demand for Transport Services

By the year 2010 about 40,510 ha of additional land will need to be developed to support a population of 4 million persons. By the year 2005 about 50% of this area would have been developed, and 60% by the year 2010. There are already large suburban areas planned for new residential communities and industrial estates, some of which are currently being developed without adequate infrastructure in place.

The current vehicle ownership rate is around 60 per 1000 population. This is expected to drop to around 50 per 1000 population by the year 2000. If this latter is maintained additional vehicles on the roads of GAMA will increase from an estimated 116,000 to about 135,000 in the year 2005 and 170,000 in 2010. However, if an adequate road network is planned and developed, the numbers of vehicles on the road would be reduced from about 93 per km of roads in 1990 to about 43 per km by the year 2010.

The provision of an adequate road network in new suburban areas and their interconnection with business centres will go a long way to ease congestion on the roads. However, the benefits of an improved network would be frustrated if the present modal split is maintained. This will involve substantial investment in bus and mini bus services on intra and inter city routes. Cheaper mass transit systems, as against the predominant use of the private motor car and low occupancy vehicles, must be found. The Ministry of Transport and Communications is pursuing a programme to introduce large buses for both inter- and intra-city use. There are plans for the railways to be rehabilitated and modernized. Current low levels of income will force many people to use cheaper transports as they are introduced.

(ix) Telecommunications

Lack of adequate telecommunications facilities has contributed substantially to the growing traffic congestion in Accra. There is excessive use of the private vehicle for business which could easily be transacted on the telephone. Similarly a number of social trips can easily be avoided if a telephone service could be readily available. The Posts and Telecommunications Corporation has embarked on extensive rehabilitation, updating and capacity expansion of the existing network. There is a proposal also to install a new exchange to serve the west of Accra. These programmes would improve the situation, but attention should be turned to providing facilities for the developing communities in the north and north-east which generate many unnecessary long vehicle trips due to lack of telecommunications facilities.

(x) Rural Road Network

Large parts of Ga District as well as Tema District consist of rural communities whose economies are closely linked with the urban population of the Accra-Tema Metropolitan area. The level of production, mainly agricultural, of these rural communities has been influenced very much by accessibility to the farms by vehicles from the metropolitan areas. Post harvest losses which occurred when the market women were unable to reach the farms had discouraged the farmers from producing more. From limited studies carried out in the late sixties and early seventies, a network of feeder roads connecting market centres like Abokobi, Manhean, Ashaladza, Obuom, Ayikaidoblo, Mayera, etc. to the main traffic corridors to the city have been developed. While some of these were politically motivated, they nevertheless fulfilled a need.

An interesting factor of this development was that these roads were constructed to higher geometric standards than would be expected of feeder roads but were not maintained and consequently deteriorated. These roads can be easily rehabilitated and incorporated in an integrated network with the main corridors to the city, but with lower pavement standards because of the much lower traffic levels experienced on these roads. It is expected that easy accessibility will reduce post-harvest losses and encourage agricultural production especially fruits, vegetables and root crops. The concentration of effort should be in the areas growing such crops as pineapples, mangoes, vegetables, etc. for export.

A major constraint has been the development of all-year round water crossings. Some of these crossings have been identified and studied but some still await funds for studies and/or construction. Steps should be taken within the first five years of the plan to rehabilitate the roads and construct the following water crossings and east-west linkages to facilitate the integration of the districts:

Bridge across the River Densu around Ashaladza,

Bridge across River Dobro on the route Oduntia to Amasaman Road,

Bridge across River Dobro on the Oduntia to Ablekuma Road.

5.1.2 Railways

(a) The Network

(i) As noted earlier, the railway forms an insignificant part of the traffic and transportation network in GAMA. The system has about 25 km of non-electrified railroad which is operational but in poor condition. About 10 km of this forms part of the Accra- Kumasi main line and 15 km is the branch line to Tema. The track is single line and of 1060 mm gauge, taking a maximum axle load of 16 tonnes. The railroad is being rehabilitated country-wide. This is due to be completed by 1993. The existing network is shown on the map at Figure 5.1.

(ii) Traffic Volume

Little information is known about the volume and numbers of passengers using the railway in the metropolitan area. Passenger numbers are insignificant due to the limited service, slowness and lack of convenient stops on the route. There is, however, significant potential to improve the service.

(b) Issues Affecting the Development of the Urban Railway

(i) Alignment

The urban railway network as a mass transit system should be designed to connect main centres of activity. The current alignments of the urban railway were selected to fulfill particular needs at the time they were built. The Accra-Tema line was to carry freight from the Ashanti/Brong Ahafo and the west to Tema Port; the disused line, Tema-Shai Hills, was to carry quarry stones to Tema Port for constructional purposes; and the railway central station to Korle Dudor was servicing the warehouses at the old Accra Port at James Town. They were not meant to serve urban passenger traffic except the Kumasi line portion within GAMA. The limited service was incidental. The Accra-Tema line therefore circumvented the communities between Accra and Tema. New development can, however, take advantage of these alignments. The coastline portion of the Accra-Tema line is threatened by encroachment from sea erosion. Some coast protection measures have been taken, but the cost of retaining the existing alignment cannot be justified and consideration should be given to finding an alternative route further inland.

(ii) Sufficiency of the Network

Total length of railway that can form an urban network including the disused lines Central Railway Station to Korle Dudor (0.75) km and Tema Port-Shai Hills line to Michel Camp (13.5 km) is about 40 km. This is totally insufficient to meet the needs of a mass transit system for a population expected to reach 4 million before 2010.

(iii) Protection of Corridors

A viable urban railway service can be achieved using the current right-of-way. There are, however, some encroachments on railway land which, if removed, could be used for passenger stations, and associated bus and taxi stations. New lines and spurs would be needed to connect new communities. Unfortunately some railway lands have been leased and repossession will be required to restore an adequate corridor. It is important that a study be carried out to establish requirements for new railway lines, passenger stations/platforms, bus/taxi stations, etc. and that steps be taken to stop encroachment or alienation of railway lands once acquired.

(iv) Interaction of the Urban Railway and the Road Network

For an effective transportation network, the road system should be integrated and complement the urban railway. To this end railway passenger stations should be selected and placed at strategic centres of main activity with road connections to distribute passengers to various communities/estates. Road/rail crossings at grade impede traffic flow and can be dangerous whether manned or automated. Some attempts were made at grade separation on the Accra-Tema line which now has only two crossings at grade. On the other hand the older Accra-Kumasi line has within GAMA as many as six crossings at grade, three of which are across major arterials thus constituting a source of serious traffic congestion. Arrangements should be made to grade separate crossings especially on expressways, major and minor arterials and collectors.

(c) Future Demand for Services

(i) Freight constitutes the main traffic on the railway.

A commuter service is however provided between Dome and Accra and Accra and Tema, albeit this is insignificant because of the present routing of the line between Tema and Accra. There is however significant potential to increase passenger traffic. For instance, it takes about 45 minutes by road from Teshie-Nungua to Accra. A Ministry of Transport and Communications survey indicates that about 60-75% persons would rather go on the railway if the service was there. New stations/platforms and a spur or a loop to take in the new developing communities of North Teshie, Teshie-Nungua, Hedzoleman, Okpoi Gonno, Lashibi and Sakumono with a potential population of over 250,000 would increase passenger traffic considerably. The deadline from the Central Railway Station to Korle Dudor could also be rehabilitated as part of an urban railway passenger service which would take passengers to the south-west of Accra.

(ii) Development of a Mass Transit System

The existing rail corridor provides an opportunity to develop a framework for a rapid transit system based on rail or road or both. It is inevitable that such a system will have to be developed to solve long term traffic problems. No amount of improvement to the network or traffic management will solve the problem of congestion. The protection of the existing rail corridor and designation of other corridors must be undertaken at this stage to reduce substantial compensation and development costs of a rapid transit system in future.

5.1.3 Air Transport

(a) Facilities

Kotoka Airport is the only international airport in Ghana. It is located 7 km north of the city centre. The airport has a runway 2987 m in length, however, this has deteriorated in recent years. There is no limit to the type of current aircraft which can use the runway but navigational aids and other facilities at the airport need to be upgraded. A programme to rehabilitate the airport has been started. This involves pavement rehabilitation, installation of new navigational aids, rehabilitation of the control tower, the passenger terminal building and its services, the construction of a new cargo/freight terminal and provision of updated service facilities. The facilities are jointly used by the Ghana Airforce which has its own operational base on the eastern edge of the main runway.

(b) Air Services

(i) International Service

Ghana Airways and 10 foreign airlines operate international passenger services between Europe and other African countries from Accra Kotoka International Airport (KIA). There are two cargo airlines - Gemini and Rainbow, operating cargo services between Europe and Accra. KIA is the only international airport which provides flight information to aircraft overflying the Accra Flight Information Region. International traffic level continues to rise and aircraft movement figures remain at about 7,000 per annum. About 25,000 passengers and 2000 tonnes of freight are handled at KIA per month. Of freight handled about 60% is departing freight. This is accounted for by exports of perishable cargo like pineapples, mangoes, etc. On the other hand arriving mail forms the bulk (approx.75%) of freight handled.

(ii) Domestic Air Service

Ghana Airways is the only airline operating a commercial air service within Ghana. There has been a decline in domestic aircraft movement in the past few years. There is an average of only 22 domestic flights per month recorded in 1990 as against 200 in 1989. Passenger and freight levels have declined from 71,762 in 1989 to just over 6000 in 1990. Freight carried is less than 20 tonnes per annum.

The decline in passenger traffic was the result of a deliberate reduction in the frequency of service, due to the high operational costs of the F28 aircraft in use for domestic flights. These planes need to be phased out and substituted with a more economic short run aircraft. This is now under consideration by the Civil Aviation Authority. A study is required to ascertain future demands for domestic services. Private operation of an air bus service is an option which could generate demand. Judging by the way businessmen value their time, the demand for such a service could be high if they were regular and readily available.

(c) Issues affecting Airport Development

(i) Constraints on Airport Operations

While improvements to the airport will greatly improve the efficiency there will be a need to redevelop many facilities within the next 20 years. The current airport facilities have limitations, namely:

KIA is close to built-up areas and poses a danger to persons and property within the flight path of aircraft. This may have an impact on aircraft insurance policies.

There is very little room for expansion with no space for a second or cross runway.

Aircraft noise levels are unacceptable to residents in the areas along the flight path.

(ii) Location of a New Airport

The need to plan for a new international and domestic airport is recognised from an environmental, safety and development point of view. A new site is proposed east of Tema which will have to be zoned and acquired in the near future. Further studies are required on the feasibility, time and cost of relocating the airport.

5.1.4 Ports and Harbours

(a) Tema Port and Harbour

(i) Facilities

Tema Port and Harbour was commissioned in 1962 for the importation and export of goods. There is little seagoing passenger traffic in and out of Tema Harbour. The port is supported by a well developed township and is accessible by road and railway. The port has the following facilities:

12 multipurpose berths, container stacking yards, one container freight station (CFS), an alumina berth operated by the Valco Aluminium Company (VALCO) and an oil berth.

A fishing harbour divided into an inner and outer harbour for small and large fishing vessels respectively.

A drydock operated by the Tema Shipyard and Drydock Corporation (TSDC).

A boat yard for building, repair and rehabilitation of small and medium fishing boats.

(ii) Operations

Tema Port handled a total of 933 vessels in 1990, 207 of which were cellular and multipurpose container vessels while in 1991, 931 vessels out of which 228 cellular and multipurpose vessels was handled. Approximately 3,476,687 and 3,647,010 metric tons of cargo passed through the port in 1990 and 1991 respectively - imports and exports accounted for approximately 83% and 17% respectively for both periods. In 1990 the port handled 64,157 TEU's (Twenty Equivalent Units) of container and in 1991 this increased slightly to 70,723 TEU's of container. Container tonnage accounts for about 10% of total port tonnage. Berth occupancy was estimated to be around 70%. Ship turn around time was about 80 hours for 1990/1991 while time at berth was about 60 hours for both periods.

(iii) Issues Affecting the Development of Tema Port

Recent rehabilitation of the port is expected to improve operations considerably. For instance the old conveyor system for cocoa has been removed to create container space; also one shed was removed and rebuilt elsewhere to create additional container space. An increasing quantity of cocoa is now being exported in containers. In addition, a third gate and access road adjacent to the container area has been provided to facilitate container movement.

Inspite of the increase in container yard space in the port it is still congested. This is due to slow customs procedures for checking and emptying containers. This needs to be addressed if the full benefits of the large investment in rehabilitation of the port is to be realized. A new container yard outside the port area may need to be considered.

The rehabilitation of Tema Port also involved replacement of the shifted armor rocks of the breakwater, removal and replacement of the asphalt pavements of the quay aprons, platforms and roadways with concrete block paving; also the rehabilitation of sheds and other buildings, the drainage systems, electrical, water supply and sanitation systems.

A new phase of the rehabilitation programme is due to start in 1992. This involves dredging of the harbour and rehabilitation and improvement of the road from the port to the motorway for easy accessibility. The use of the coastal access road should be restricted to discourage heavy trucks passing through the heavily congested access of Teshie and Nungua.

In future disabled ships should be securely moved outside the harbour and only for a limited period. If the boat is to be abandoned it must be towed out to sea and sunk. In the past poorly moored and/or abandoned boats had drifted to damage the Tema Sewer Outfall or sunk within or just outside the harbour.There has been a proposal for the establishment of a free port at Tema. An area was set aside for this but the final decision on whether to go ahead has yet to be taken. If the project goes ahead, there may be a demand to increase further the cargo handling facilities.

(iv) Port of Accra

Apart from Tema Port and Harbour, the only other port is that of Accra in James Town which continues to be used as a fishing port for small boats and canoes. A 400 m breakwater protects the James Town harbour and the old lighting is functioning well. The harbour has a disused 100m jetty consisting of a platform mounted over a cast iron framework. There is also a boatyard which was used for building and maintaining and rehabilitating small fishing vessels, but now appears to be exclusively used for maintenance and rehabilitation

of the vessels. The sheds are, however, in poor condition. There is a slipway for slipping boats to and from the boat yard.
The port area is reached by a steep but short access road off High Street near the Light House. The road is two lane with a bitumen surfaced pavement. It will need, however, to be rehabilitated to make it easier for heavy laden trucks to climb. The port has no cold store or ice making plant and ice has to be brought from outside to preserve the catch at sea and after landing.

There is a thriving open market within the port area in the early morning during the peak of the fishing season. A car parking space about 2,000 m^2 is available at the port area. About another 1,200 m^2 of open space at the top of the cliff overlooking the harbour is also used for parking for private cars visiting the port. Electricity, water and telephone services are available and could be connected to the port. It is also possible sewerage facilities can be connected to the central sewerage system through pumping to High Street sewer. There is a significant opportunity to revive this fishing harbour to help the mid shore fishing industry as the port is important to the Ga Community who live in this area.

(b) Landings

There are several other landing areas along the coastline which are used by fishermen on a regular basis. These include Osu, Chorkor, Songo lagoon, Sakumo lagoon beach (Tema) and Kpone. None of the landing facilities are developed to handle fish cleaning and distribution. There is a need to improve access, site facilities and waste disposal at these landings.

5.2 ENGINEERING SERVICES

The lack of infrastructure services is a problem throughout the metropolitan area. The primary facilities for generating electricity and the source of water supply are more than adequate, but sanitation, telecommunications and primary drainage are still deficient. The most serious problems involve the distribution of services - in particular repairs to the network. The following sections describe the different infrastructure services in the metropolitan area. More detailed information is available in the Urban Utilities and Municipal Services report prepared for the Accra Planning and Development Programme and other reports alluded to in the text.

5.2.1 Water Supply

(a) Existing Situation

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 the GAMA.

(i) Supply

Water is supplied to the metropolitan area from two waterworks located at Kpong (54km north of Tema) and at Weija (15km West of Accra). The Kpong works delivers 172 million litres (ML) per day (38 mgd) and the Weija works 90 ML per day (20 mgd). At both waterworks the treatment provided is sedimentation or clariflocculation, rapid gravity sand filtration and disinfection. The water at Kpong is generally of a better quality than that at Weija. All other areas not serviced from these two sources rely on well, local stream or rainwater captured sources.

(ii) Distribution

Treated water reaches Accra by pumping from the Kpong waterworks through a 1050 mm diameter transmission line to a 46 ML Tema Terminal Reservoir and by pumping from this reservoir through a 800mm diameter transmission line to a 46 ML Accra Terminal Reservoir. Both these transmission lines are in poor

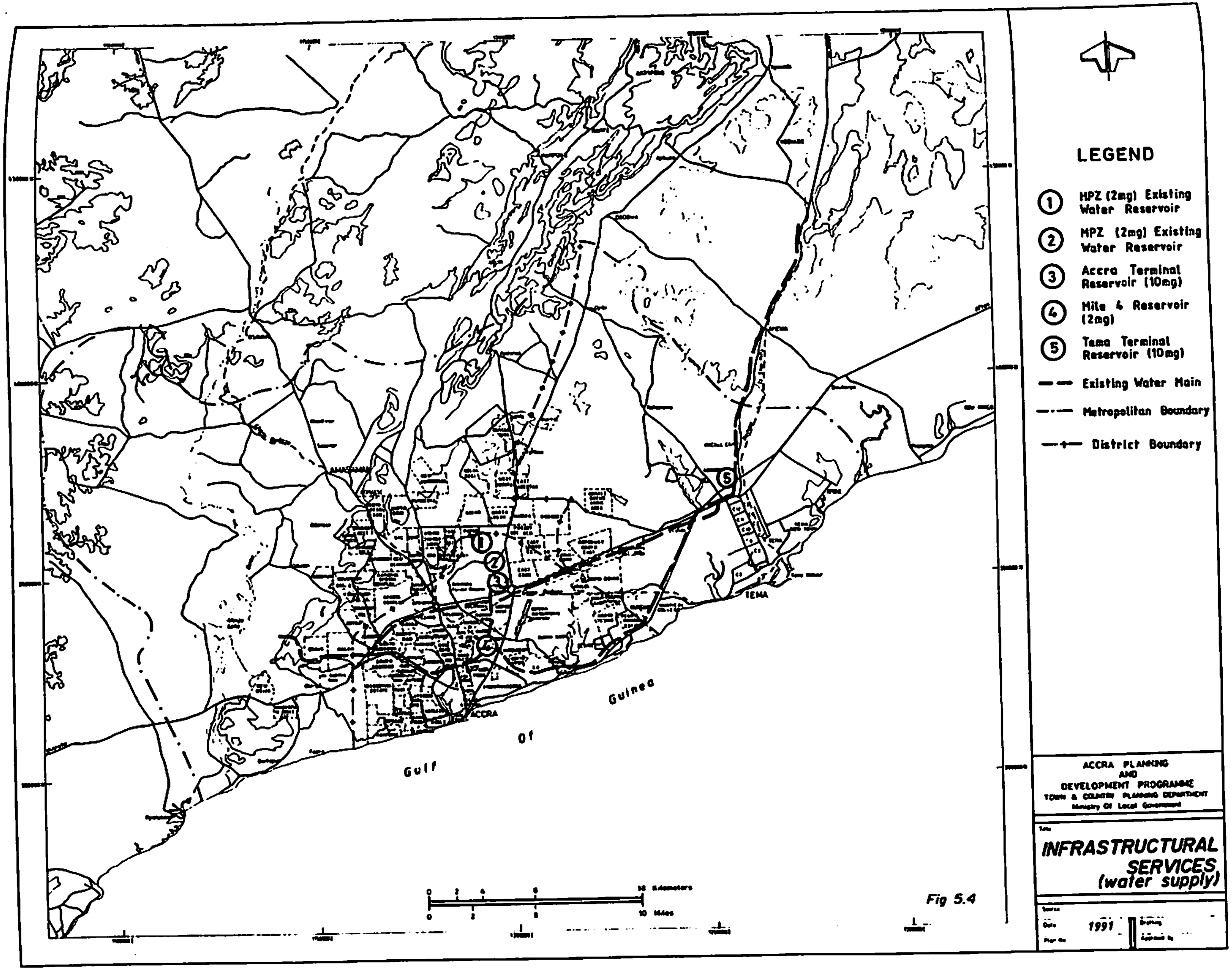

LEGEND
① HPZ (2mg) Existing Water Reservoir
② MPZ (2mg) Existing Water Reservoir
③ Accra Terminal Reservoir (10mg)
④ Mile 4 Reservoir (2mg)
⑤ Tema Terminal Reservoir (10mg)
Existing Water Main
Metropolitan Boundary
District Boundary
AMASAMAN
ACCRA
TEMA
Gulf of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles

Fig 5.4

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

INFRASTRUCTURAL
SERVICES
(water supply)

Date 1991

condition.The Weija waterworks, on the other hand, transmits treated water to Accra by gravity through five pipelines of diameters 300mm, 350mm, 400 mm, 525mm and 900mm. The 400mm and 525mm diameter pipelines terminate in the 27ML Mile 4 Reservoir, while the remaining pipelines feed directly into the water supply reticulation system of western and central Accra.

The water supply distribution system of Accra is divided into three pressure zones; the low, medium and high pressure zones.The high and medium pressure zones are served by the Kpong works and the low pressure zone from both Kpong and Weija. Tema is served by the Kpong works.

Many areas in ATMA suffer from poor water supply and low pressure (with interruptions in supply) largely because of insufficient water treatment capacity and inadequate main secondary and tertiary pipelines. The older parts of GAMA are in need of renewal of distributon pipelines laid many years ago and which have become encrusted within thereby reducing their effective diameters and carrying capacity. Some newly developing areas of GAMA also have no reticulated water supply because the rate of housing development far outstrips the mains extension capacity of the Ghana Water and Sewerage Corporation. Tema is the only district with a near fully reticulated water supply system - except for communities 3 and 12 where the reticulation proposals are planned but not yet constructed.

All fully developed residential areas in Accra such as the Central Business District, Airport, North Labone, and Cantonments areas have reticulated house metered supply. In some estates such as the University of Ghana, Roman Ridge and Burma Camp a good reticulated pipe system has been provided but there is insufficient capacity to ensure adequate supply.

(iii) Water Consumption

Water consumption in GAMA is intended to be metered. Metering is applied to all commercial, industrial, institutional and governmental consumption. Domestic consumption is also metered at the house or yard connection (mostly high/medium income households), or via public stand pipes (mostly low income households). The metering of public stand-pipes is a recent development and not widespread. Some premises have no meters and are billed on average estimated consumption for similar premises in the area.

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, and 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.

In accordance with the findings of the water consumption survey carried out by Tahal in the 1981 Review of the Master Plan, the following figures for mode of distribution and per capita consumption in 1990 were obtained.

House Connection:	48%	-	151 lpcd	(55 cum/c/yr)
Yard Connection:	27%	-	99 lpcd	(36 cum/c/yr)
Stand pipes:	25%	-	44 lpcd	(16 cum/c/yr)

It is assumed that by the year 2010, per capita consumption via house and yard connections would reach 58 cum/c/year and 38 cum/c/year respectively. Average daily water consumption as billed for the metropolitan area in 1990 was 106.9 ML, per day.

(iv) Level of Service

In the absence of reliable data, the following broad classification has been adopted for the level of service provided for water supply in the metropolitan area. The level of service provided to different parts of the metropolitan areas is shown on Figure 5.6. 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.

Good:	More or less uninterrupted supply 120 lpcd
Average:	Occasionally interrupted, low pressure 60 lpcd
Poor:	Irregular supply, low pressure 60 lpcd
Other:	Well, stream, tanker of other supply 25 lpcd

(b) Water Supply Master Plan

(i) Master Plan Proposals

The Tahal report examined 4 alternative water supply schemes for the metropolitan area. The recommended scheme proposed to develop the Kpong Water source to 545 megalitres per day (MLd) (120 mgd) and the Weija source to (318 MLd) (70 mgd). Full development is to be reached in year 2012. The scheme involves the rehabilitation and improvement to the treatment works and primary distribution network. The Weija source (as opposed to the Kpong source) would be further developed and the relining of the 800 mm (32") Tema - Accra main should be undertaken. The Weija source would then have sufficient capacity to meet the demand fully on its own while the Tema-Accra main is out of commission for relining. The broad details of the plan are as follows.

Development 1989 - 1993

Further development of the Weija source would be realized. In the case of the expansion of the new waterworks, an additional capacity of 68 MLd (15mgd) is needed and in the case of the rehabilitation of the old waterworks an improved supply of 68 MLd. A total of 204 MLd (45mgd) would then become available from the Weija source. A 900 mm diameter main would be constructed to deliver the increased supply to Accra.

With the additional supply from Weija, it would be possible to meet the Accra water demand in 1991 almost completely without any transfer of water from Tema (Kpong source). Consequently, during that year it is proposed that the internal relining of the existing 800 mm Tema - Accra rising main be carried out.

By the year 1993, the system supply will have to be increased further to meet the Accra and Tema water requirements at that time. In order to meet this eventuality, a parallel 850 mm Kpong- Tema transmission is to be laid so as to provide an additional 22.5 MLd (5 mgd) (beyond the present rated capacity of 172 MLd (38mgd) and also to permit the relining of the existing 1050 mm Kpong-Tema transmission main.

Development 1993-2010

After the (1989-1993) development programme, further expansion will be required to meet increasing water demands. The major components of this programme are:

Construction in year 1995 of the Doryumu Booster Station, together with expansion of Kpong waterworks t make possible the delivery of additional 100MLd (22mgd).

Laying in year 2001 of a parallel 1200 mm Kpong-Tema transmission main, together with further Kpong waterworks and Doyumu Booster Station development, thereby providing an additional 210 MLd (46mgd) to bring the total to 504 MLd (111mgd).

Expansion in year 2003 of the Weija new waterworks to provide an additional 68 MLd (15mgd) to bring the total from this source to 60mgd, together with a second parallel 900 mm transmission main from Weija to Accra.

(ii) Domestic Consumption

The future of domestic water demand would depend very much on the policy adopted regarding levels of service to be provided. The higher the level of service the higher the consumption will be. ATMA master plan review makes the following projections (Table 5.2) with respect to consumption.

Table 5.2 Projected Water Consumption 1990 - 2010

Category	**1990**	**1995**	**2000**	**2005**	**2010**
Domestic	172.5	205.8	261.0	320.8	394.7
Non-domestic	65.2	83.19	106.2	135.5	173.0
Unconsumed	97.2	113.6	132.9	155.3	181.4
(Loss%)	(29%)	(28%)	(27%)	(26%)	(25%)
Total	**334.9**	**402.6**	**500.1**	**611.6**	**749.1**

Source: ATMA Master Plan Review

(c) Issues affecting Water Supply

(i) Water Quality

Part of the Accra water supply has been drawn from the Densu River since the beginning of the century. In recent years the river has become increasingly polluted from domestic sanitary waste and fertilizers used in crop production. The subsequent rise in the organic content of the Weija water is increasing the cost of water treatment from this source. Unless steps are taken to reduce the current nitrogen levels in the water entering the reservoir the cost of treatment will become prohibitive and further development of the Kpong source will be required earlier than planned.

In low lying residential areas, low pressure and the poor installation of pipes often results 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 the ingress of polluted water into the pipelines.

(ii) Distribution

The Tahal report set out a very clear strategy to ensure long term supply for water to the metropolitan area. Aspects of the strategy are questioned in (iv) the Canal Alternative below. That report, however, does not develop a clear strategy on the level of service by location for the metropolitan area, priority for area and tertiary network improvements and local level rehabilitation of services. This is not necessarily an oversight as the plan was prepared without reliable landuse and planning information. There is need to develop a much more comprehensive micro strategy for water supply distribution and management within GAMA.

Within the Greater Accra Metropolitan area there are peculiar problems involving distribution. The Teshie/Nungua estate has 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. The East Adenta estates have also been provided with a good reticulated pipe system but hardly any water reaches there because of inadequate capacity of the mains supplying the area, as well as low levels at the source reservoir at Legon. An additional 300 mm main is to be provided soon to the area whilst new pumping equipment is installed at the booster station at Okponglo by 1993.

In the newly leased government land areas, such as East Legon, where the road network has not been 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.

The hindrance to the reticulation of pipes, it is observed, is the inability to construct a road network in the particular areas; the GWSC fears the destruction of the pipes when the roads are eventually constructed. In areas like East Legon where building plots are allocated by government, the absence of a good road network may be attributed to inadequate development fees being charged for allocation of plots and these must be reviewed. In Tema Community 2, the reticulation is good but low pressure affects supply to higher grounds in the community. A booster station is therefore needed to solve the problem there.

(iii) Water Loss

GWSC is continuing with its leakage detection programme in GAMA. The Corporation is to obtain funding from external sources to undertake mainly the rehabilitation of pumping equipment, reservoirs, treatment plants; also the completion, replacement and laying of main, secondary and tertiary pipelines. GWSC is also to further develop the Weija source so as to provide sufficient capacity to meet the demand fully on its own, while the 800mm Tema-Accra pipeline is out of commission for relining.

Despite these measures designed to reduce trunk main distribution loss, greater attention must be given to loss in the local pipe network and taps. There must be much greater awareness drawn to individual water loss caused at domestic and local area distribution if losses in the system are to be reduced significantly. This is essential from a public health point of view also.

(iv) Canal Alternative in 2001

The entire development programme for ATMA outlined above will rely solely on the conveyance of water from the two sources, at Kpong and Weija via a network of transmission and distribution lines. The distribution lines in particular have been and continue to be a source of considerable leakage and the treatment cost of water from Weija will continue to rise if pollution in the catchment cannot be controlled. A scheme which could minimize the use of the lengthy transmission lines reduce high pumping costs and ensure a guaranteed water supply well into the next century would be of considerable benefit and ought to be seriously considered.

In this connection, the earlier proposal to construct a canal carrying raw water from the Volta River to Madina (on the outskirts of Accra) should be examined again. This project was discussed, in some detail, in the mid-sixties but apparently has never seriously reached implementation stage. In the light of changed projections and conditions, the feasibility study previously carried out would now need to be reviewed.

The plan envisages canal raw water feeding continuously into a reservoir and treatment facilities located at Madina with treated water then being transmitted to the Accra and Tema Terminal Reservoirs for delivery to the distribution grid. The canal would be dual purpose in that it will be designed for a capacity capable of meeting both ultimate domestic demand as well as irrigation of the Accra plains. The plains comprise an area of some 335,000 ha and the development of irrigated agriculture in this locality has already been determined as being a feasible undertaking (by Kaiser Engineering, 1965). Should the Canal Alternative be viewed as a feasible venture then the intention would be to have this replace the laying in year 2001 of a new parallel 1200 mm Kpong-Tema transmission main.

(v) Revenue Loss

Revenue loss to GWSC through uncollected bills and water loss are high. Average daily water production from Weija and Kpong is 262 ML. Billings account for less than 110 ML. Based on a cost of 0.05 cedis per litre, lost revenue on the 152 MLs unbilled is 7.6 m cedis or 2.736 Bn cedis per annum. This is the real cost of water loss, illegal connections and inefficiencies in revenue collection. It is an impossible task given the resources of GWSC to prevent, locate and disconnect illegal connections but revenue loss in this area could be recovered by bulk sales to private companies in areas where there are a substantial number of illegal connections. Such companies would take steps to ensure users pay and that leakage is kept to a minimum. The severity of revenue loss suggests urgent measures must be applied to reduce water loss and improve revenue collection systems.

5.2.2 Liquid Waste Management

The Ghana Water and Sewerage Corporation (GWSC) is responsible for providing facilities for the disposal of sewage and other liquid waste in GAMA. The AMA, Tema 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. The following is a summary of current conditions and issues affecting sanitation in the Greater Accra Metropolitan Area. More detailed information can be found in the reports on "Urban Utilities and Municipal Services" prepared for the Accra Planning and Development Programme and the Tahal report on the "Accra Tema Water and Sewerage Project Review of Master Plan".

(a) Existing Sanitation Services

ACCRA

The disposal of human waste is essential to maintain public health and the quality of the environment in urban areas. Most of Greater Accra Metropolitan Area (GAMA) does not have adequate sanitation facilities. The majority of the residential areas are without proper toilet and ablution facilities. In other areas the current system of sanitary waste disposal is overloaded creating a danger to public health. The general level of sanitation service in the metropolitan area is shown on Figure 5.6. The existing types of sanitary services are as follows:

(i) Accra Sewerage System

In 1973 the first phase of a water borne sewerage system was constructed. This covered the central part of Accra, from the east side of the Korle Lagoon, to west and east Ridge. Altogether some 28.5 km of sewers were laid, with pipes varying in size from 1 m to 225 mm. About 500 junctions were initially provided for house connections with stubs at manholes for future secondary sewers. As of June 1991 a total of 725 houses had been connected with more applications for connection being processed. Three pumping stations were installed in the system, one in central Accra with 3 pumps, one in High Street with one pump and one at Korle Bu with two pumps. The pumps in Korle Bu have been cannibalized to repair those in High Street and Accra Central.

The flow from sewer connections is not enough to self cleanse the sewer lines - which are running at 10% capacity. A flushing jet for cleansing is applied monthly to remove grits and chokes in the lines. The jet flusher is currently out of service and a replacement is urgently needed to avoid a serious choke which could flood the stations. Approximately 1,500 households are needed to be connected to the system to provide sufficient flow to self cleanse the lines. Almost all the new applications for connection are coming from Accra Central because of the ban on pan latrines.

The rising mains for the Central Accra Pumping Station were connected to a sea outfall constructed by cutting an existing 300 mm diameter steel fuel pipeline into equal sections, to form a triple pipe outfall 1.2 km long to discharge sewage into the sea. This outfall has broken down due to corrosion and raw sewage discharges onto the beaches causing serious pollution.

(ii) 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. The major 4 systems are: Burma Camp, Korle-Bu Hospital, University of Ghana and Korle-Lagoon Sewerage System. The 14 treatment plants are located at the Mental Hospital (Accra), State House, (Osu), Labone, Ministries (Accra Beach), Accra High School, Roman Ridge, Military Hospital, Trade Fair, Achimota School, Mental Hospital (Pantang), Presbyterian School (Legon), Teshie Nungua Estates, Military Academy, Ashaiman. Most of the plants have broken down as they have not been maintained in accordance with the designers instructions. Raw sewage passes untreated into nearby water courses. All plants are in need of a total overhaul to make them work and to serve additional residential areas close to them. All the plants are under different organizations for maintenance. They should all be handed over to GWSC to ensure proper maintenance.

(iii) 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. These are emptied into 17 underground holding tanks which are to be replaced by 7 cubic meter containers provided at designated collection points. The contents of the containers will be collected by cesspool emptier or container trucks and taken to the night soil tipping station on the coast at Korle-Gonno just west of the Korle Lagoon outlet into the sea, or to Achimota and Nungua where it is treated through oxidation ponds before discharging into the sea at Korle-Gonno or into sewage farms at Achimota and Nungua.

The Accra Metropolitan Assembly is phasing out the private pan latrine system for the KVIP toilets in private houses, the cost of which will be borne by the householders. This type of system is functionally the same as the direct pit latrine except that the superstructure and the pit are laterally displaced and the excrement conveyed to the pit by means of a short duct or by an overhang of part of the pit by the superstructure. Although this system takes more space than the direct pit, it does enable a greater volume to be stored. A problem with this system is who is responsible for digging out of the digested sludge which neither the Accra Metropolitan Assembly nor GWSC will accept.

(iv) Septic Tanks

In addition to the above, the Accra Metropolitan Assembly services over 18,000 septic tanks in private domestic, non domestic premises as well as official domestic and non domestic premises. This service is done at least once a year where ground conditions are stable but much less where conditions are unstable. The contents of septic tanks are treated at Achimota, Korle Gonno and Nungua.

The commencement of phase 2 of the sewer construction project is necessary to encourage the construction of more water-flush toilets, and connection of septic tanks in central Accra - especially in areas with waterlogged ground conditions where soakaways fail to work. In septic tank areas like East Cantonments, Labone and Airport, the introduction of a small-diameter sewer system, where the solids are retained in the tanks and the liquid passes into small-diameter sewers for conveyance to treatment or sea disposal, would allow solids to be retained for over a year before removal.

(v) Public Toilets

In most cases the public toilets and refuse collection containers are accommodated on one site for the convenience of residents. A large proportion of the public toilets are of the cesspool type. There are 141

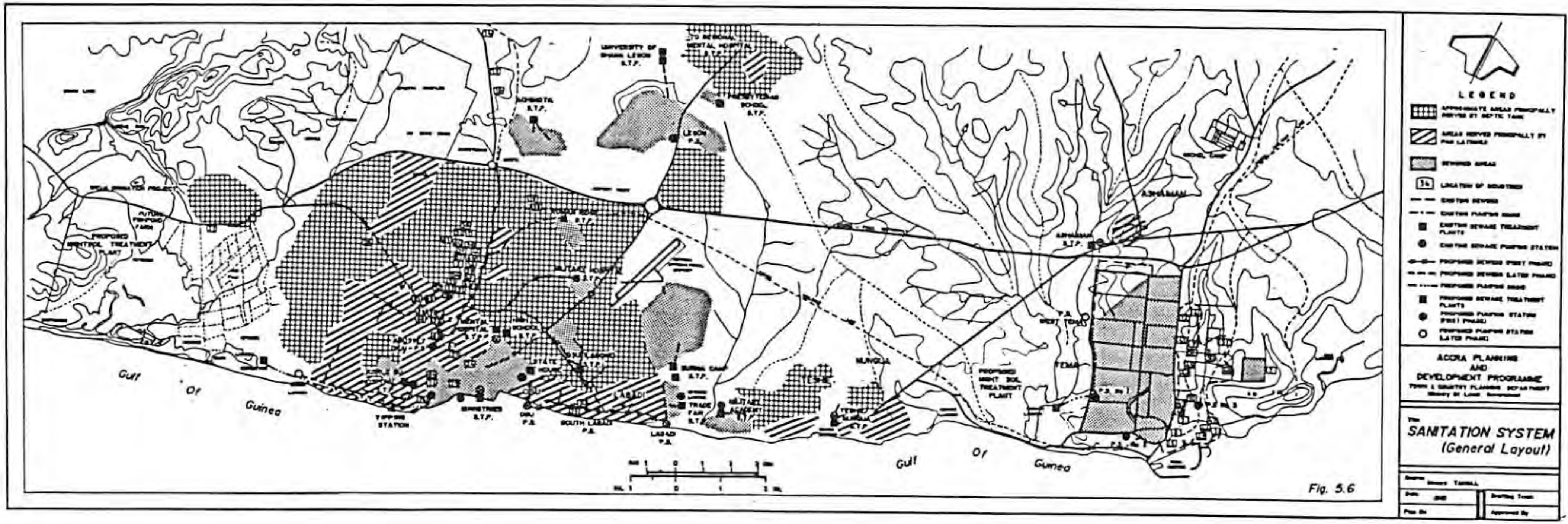

LEGEND
APPROXIMATE AREAS PRINCIPALLY SERVED BY SEPTIC TANK
AREAS SERVED PRINCIPALLY BY PAN LATRINES
SEWERED AREAS
LOCATION OF INDUSTRIES
EXISTING SEWERS
EXISTING PUMPING MAINS
EXISTING SEWAGE TREATMENT PLANTS
EXISTING SEWAGE PUMPING STATION
PROPOSED SEWERS (FIRST PHASE)
PROPOSED SEWERS (LATER PHASE)
PROPOSED PUMPING MAINS
PROPOSED SEWAGE TREATMENT PLANTS
PROPOSED PUMPING STATION (FIRST PHASE)
PROPOSED PUMPING STATION (LATER PHASE)
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
The SANITATION SYSTEM (General Layout)
Drafting Team
Approved By
Gulf Of Guinea
Gulf Of Guinea
UNIVERSITY OF GHANA LEGON S.T.P.
TO REGIONAL MENTAL HOSPITAL S.T.P.
PRESBYTERIAN SCHOOL S.T.P.
ACHIMOTA S.T.P.
LEGON P.S.
PROPOSED CONTROL TREATMENT PLANT
FUTURE PUMPING FARM
TIPPING STATION
CEMETRIES S.T.P.
OSU P.S.
SOUTH LABADI P.S.
LABADI P.S.
LABADI
STATE HOUSE
MILITARY HOSPITAL S.T.P.
BURMA CAMP S.T.P.
TRADE FAIR S.T.P.
MILITARY ACADEMY S.T.P.
TESHIE
NUNGUA
PROPOSED NIGHT SOIL TREATMENT PLANT
ASHAIMAN
ASHAIMAN S.T.P.
WEST TEMA P.S.
TEMA
P.S. No 1
P.S. No 2
P.S. No 3

Fig. 5.6

public toilets and the holding tanks are often used as a receptacles for the emptying of the night soil buckets brought to the site by conservancy labourers. These toilets should be emptied once or twice a week, but at best most are emptied once a month. This is due to spare parts problem for maintenance of the cesspool emptier vehicles. This state of affairs has prompted the AMA to change to the KVIP type of toilets (Kumasi Ventilated Improved Pit). Fourteen public toilets are connected to the sewerage system and tolls are collected for their use.

(vi) Public Wash Houses (toll houses)

Some sanitary sites, mainly in poorer districts, are also provided with unroofed enclosures or wash houses or 'toll pipes', where water is available free of charge for personal washing or laundering of clothes. Tolls were collected for the use of the 'toll houses' in the past, but this was later stopped maybe with the introduction of the Land Pool Tax or basic rates in the country in the 1930's. With the recent rehabilitation of wash houses, tolls have been reintroduced. There are about 30 toll houses in use in Accra.

(vii) 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. It forms by far the greater proportion of the total house hold water consumption. In Accra it is normal procedure for sullage to be discharged into surface water drainage channels and ditches. In poorer residential areas sullage is thrown onto the ground outside, where it is either channeled to the roadside ditch or forms its own cesspool.

In areas where water courses have continuous flow sullage is diluted readily and any organic waste it contains transported. In many roadside channels, however, especially in districts such as Ussher Town and Korle-Wokon, there is no continuous natural flow, so that during the dry season these channels contain sullage and accumulated deposits of organic material. As a result stagnant sullage pools create mosquito breeding places and unpleasant odours.

The AMA Waste Management Department has plans to mechanize the cleaning and maintenance of sullage channels in Accra. Each sanitary labourer will be provided with enough refuse containers and assigned to a particular area. When the channels are cleansed and all organic waste or dumped refuse removed, a tractor with trailer will follow to tip the contents of the container into the trailer and take them to the disposal point whilst the sanitary labourer continues with the cleansing operation. The inhibiting factor for this operation is the current lack of equipment and management.

(viii) Public Health

The Medical Officer of the Health Department provides public health service for the Metropolitan Area by supervising the slaughtering of cows and sheep at convenient places and guaranteeing wholesome meat. There is also the inspection of restaurants and cook/eating houses to ensure healthy surroundings, that cooked food are sold in fly/dust proof containers, and food and beverage sellers supply or provide wholesome wares. They also check indoor sanitation in residential premises to control the breeding of insects such as mosquitoes and vermin such as rats and mice. Control on the breeding of sheep, goats, cows and dogs and poultry, however, is poorly maintained, in the metropolitan area. The Medical Officer also administers the cemeteries and helps the City Engineer in the processing of building plans in the areas of waste disposal and sanitation.

TEMA

The Sewerage System in Tema is a separate system of sewerage in that it handles only foul sewage and other waste waters. Surface water run-off is collected separately in open drains and discharged into the lagoons and the ocean.

The Sewerage System is divided into two parts, namely, the collection system which consists of a network of secondary and tertiary sewers which collect waste waters from various premises and discharge into trunk sewers for conveyance to the pumping stations and the disposal system which comprises the pumping stations, force mains, siphons, detention tank and submarine outfall through which the sewage is discharged into the sea.

Since 1986 that is after a design life of 30 years, there had been numerous problems connected with the sewerage system. Stoppages at the pumping stations cause backing-up of flows in the sewers and overflow of preceeding manholes. The stagnation of flow in the sewers also causes solids to be accumulated in the pipes with consequent reduction in carrying capacity and the overflows of more upstream manholes. Sewage had therefore become a serious threat to the environment at Tema. The system however is to be rehabilitated under the URBAN 2 Programme of the World Bank. Unfortunately, the rehabilitation will only take care of the disposal system.

It is only in new areas being developed close to Tema where there is no sewerage system that problems with overland flows of sullage occur.

✓ ASHAIMAN

This is a satellite township which began as the Tema harbour construction camp. Provision of sanitation services is supposed to be the responsibility of the Tema Municipal Assembly, unfortunately it has not taken responsibility for it, but delegated it to the CDRs and CDOs in the area. The township is one of the most densely populated urban areas of greater Accra and sanitation conditions for the disposal of human, sullage and other wastes are bad. There is a PAMSCAD programme being undertaken to improve some of the infrastructural facilities such as roads, water supply, drainage, refuse and waste disposal, power supply and street lights.

GA DISTRICT

This district has about 140 towns, villages and smaller settlements. Sanitary facilities 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. It fills up and flows around the toilet closing it down until it is emptied. An emptier is hired occasionally from AMA to empty the cesspool and enable the toilet to function for a short time. Sullage is usually disposed of by surface flow. Because of the low density of settlement this is not a serious problem.

(b) Issues Affecting Sanitation

(i) Overall Policy for Sewage Disposal

The 1965 sewerage master plan made proposals for a fully water reticulated sewerage system and treatment plant for Accra. In the Accra-Tema water supply and sewerage project review of the master plan prepared by Tahal and AESC (1981) it was realised that such a system was no longer affordable and a strategy of alternative technology was proposed. A revised strategy was outlined for six socio-economic/spatial environment groupings with recommendations on the appropriate technology for the disposal of sanitary wastes. These were:

Group Classification	**Technology**
Low density, high income	Septic Tank
Medium density, medium income	Septic tank/soakaway
High density, medium incomeCommunal	Septic tank
Low density, low income	Improved pit latrine
Medium density, low income	Improved pit latrine
High density, low income	Communal septic facilities

While the report is very thorough on the technology to be used it lacks a clear locational strategy for the sanitary technology to be used for the metropolitan area. The report makes a number of firm recommendations for the inner city areas, with a strategy to extend the system and link up with some of the individual treatment plants such as Korle Bu and Ridge Hospital. There are a number of assumptions with respect to the impact urban upgrading would have on future water consumption, privacy associated with ablutions, and population density which suggest that the sanitation technology proposed as appropriate for the 6 groupings cannot be universally applied. There has not been a proper strategy for sanitation prepared since the 1965 master plan and this is one reason why many sanitary conditions in many residential areas have, and will continue to deteriorate. There is a need to prepare an overall strategy which recognizes the need to deal with immediate problems, but sets in place a framework for long term solutions for the disposal of sanitary waste.

(ii) Accra Sewerage System

The Accra sewerage system is currently operating very inefficiently. Pumps have broken down, the submarine outfall no longer functions and is in need of replacement, there are not enough connections to make it self flushing and there is resistance by individuals to connect to the system because of the cost. This situation results in significant environmental, public health and operational costs which cannot be sustained. There is an immediate need to rehabilitate the system, improve its operational capacity and ensure all facilities are connected - if necessary recovering costs later.

Three new pumps and spares are needed urgently, two to replace the Korle Bu pumps and one as spare. The GWSC (Sewerage Department) lacks the logistics needed for its efficient operation. Urgent needs are vehicles to run its shifts and do the cleansing rounds with regular inspection of the lines. The pumping stations were constructed with the corresponding rising mains. The system has a standby generating plant at the Accra Central Station which is now defective and needs replacement.

(iii) Tema Sewerage System

Like Accra, the Tema sewerage system has a number of operational inefficiencies due to breakdowns. Unlike Accra, there is the potential to ensure that all property is connected to the system. The SSNIT development around the Sakumo Lagoon, however, poses a serious problem to sanitation in west Tema. The planned system of disposal will ultimately result in discharge of sewage and sullage into the Sukumo lagoon. This catchment is expected to suffer from increased pollution from upstream run off in future and the increase in liquid waste from this development will add to an already serious pollution problem in the lagoon. There must be a proper waste disposal system and treatment facilities developed in west Tema.

(iv) Rehabilitation of Smaller Sewerage Treatment systems

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. In some cases the system feeding the plant may need to be expanded to provide sufficient volume or connections to operate the systems on a full cost recovery basis.

(v) Sullage disposal

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 urban upgrading programmes, proceed for different areas, domestic consumption of water is expected to increase as will sullage. Disposal of this will become an increasingly difficult problem. As the city is not dependent on ground water supply for drinking purposes, much greater efforts must be made to dispose of sullage waste through closed systems and soakaways.

(vi) Treatment of Industrial Liquid Waste

There are four main industrial areas in GAMA. These are the Kaneshie/Ring Road West industrial area, Neoplan/Achimota Brewery area, Motorway south and Tema. Investigative studies by UNEP and the Environmental Study of Accra indicate that the majority of industrial wastes are produced by textiles (30%) food processing (25%) and refining and handling (20%). The Odaw River and Chemu Stream at Tema are the heaviest polluted water courses in the metropolitan area receiving toxic wastes from surface run off and direct discharge into drainage channels. There is an urgent need to ensure that on-site treatment of industrial liquid wastes occurs in future, as it is toxic rather than organic wastes which cause more serious problems to public health and damage to biological food chains.

(vii) Rural Town Sanitation

The lack of adequate toilet and ablution facilities in rural towns and villages within GAMA poses serious problems to public health. There is an immediate need to ensure that basic facilities are provided. Towns and villages in the district needing toilets are Amasaman (2 KVIP), Kwashikuma (1 KVIP), Pokuase (1 KVIP), Ofankor (1 KVIP), Medea (1 KVIP), Afuaman (1 KVIP), Gbawe (1 KVIP), Bortianor (1 KVIP), Gyeikrodua (1 KVIP), Kokrobite (1 KVIP), Adusa (1 KVIP), Obom (1 KVIP), Osuobli (1 KVIP), and Kofi Kwei (1 KVIP). There is an urgent need to develop sanitary sites for the town as well as for a big legion village long developed close to Amasaman, but for lack of infrastructure facilities especially water, the disabled ex-servicemen have refused to settle there.

(viii) Kumasi Ventilated Improved Pit (KVIP)

The KVIP toilet developed by the University of Science and Technology has been successfully located in many urban centres. Unfortunately in Accra, where these have been installed, use has greatly exceeded the capacity of the system - especially where there are limited facilities in adjoining residential areas. The KVIPs tend to be used to dispose of night soil, domestic and sullage waste. The appropriateness of this system has never been properly examined in dense urban environments and their use may be better applied to smaller settlements in the rural areas.

Table 5.4 Basic data for the liquid waste management in Accra

	1992	1993	1994	1995	1996
1. POPULATION GROWTH					
(i) percentage	3.7	3.7	3.7	3.7	3.8
(ii) absolute figures	1,314,490	1,363,126	1,413,562	1,465,864	1,521,566
2. LIQUID WASTE GENERATION					
(i) per capita per day (kg)	0.42	0.42	0.43	0.43	0.44
(ii) specific gravity (t/m^3)	1.00	1.00	1.00	1.00	1.00
(iii) total for Accra (t/d)	552	573	608	630	669
(iv) total for Accra (m^3/d)	552	573	608	630	669
(v) total for Accra (t)	202,063	208,967	221,859	230,067	245,033

3. LIQUID WASTE COLLECTION NIGHTSOIL CONTAINERS (m^3)					
(i) ANNUAL TARGET WMD FROM NIGHTSOIL CONTAINERS	16,500	16,000	15,000	14,000	14,000
4. LIQUID WASTE COLLECTION SUCTION TRUCKS (m^3)					
(i) annual target WMD	61,500	62,000	69,000	76,000	82,000
(ii) from organisations	20,000	20,500	21,000	21,500	22,000
(iii) total from suction trucks	81,500	82,500	90,000	97,500	104,000
5. TOTAL COLLECTION OF LIQUID WASTE (m^3)					
(i) annual target for Accra	98,000	98,500	105,000	111,500	118,000
6. COVERAGE RATE FOR LIQUID WASTE COLLECTION (%)	48.5	47.1	47.3	48.5	48.2

5.2.3 Drainage

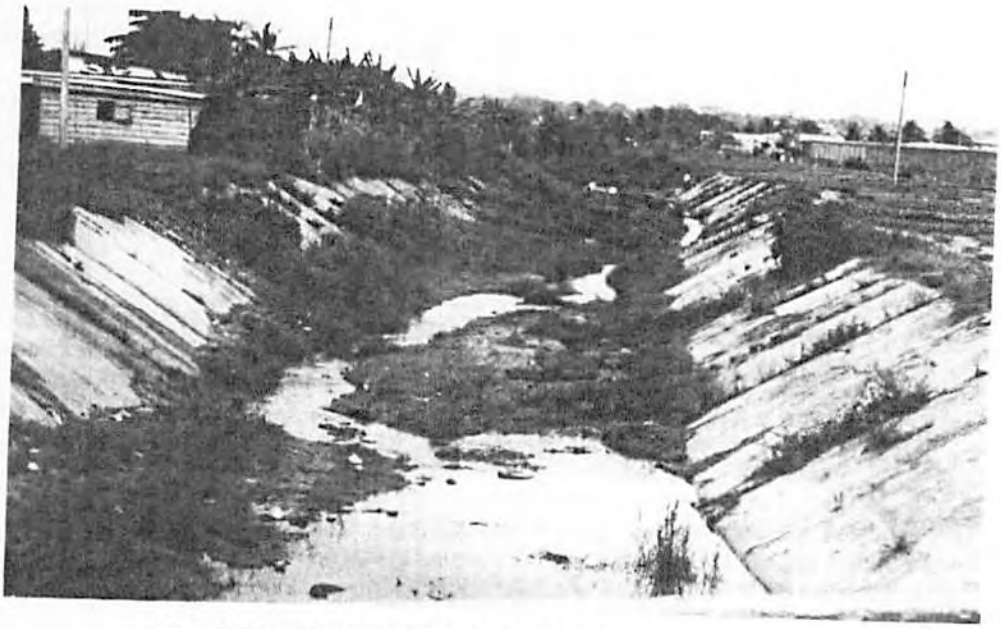
The Architectural Engineering Services Corporation (AESC) is responsible for drainage in the metropolitan area. This was formerly undertaken by PWD. Ghana Highways Authority has responsibility for drainage associated with major roads. TDC has responsibility for drainage in Tema. Drainage and flooding 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. The following is a summary of the current drainage system and some of the issues to be addressed to improve it. More detailed information can be found in the Coastal Management Plan Report (1990), Nathan Consortium report on Water Resources Development in Ghana, (1970). and the Drainage Master Plan for Accra prepared by Mott Mcdonald and Watertech (1991).

(a) Existing Situation

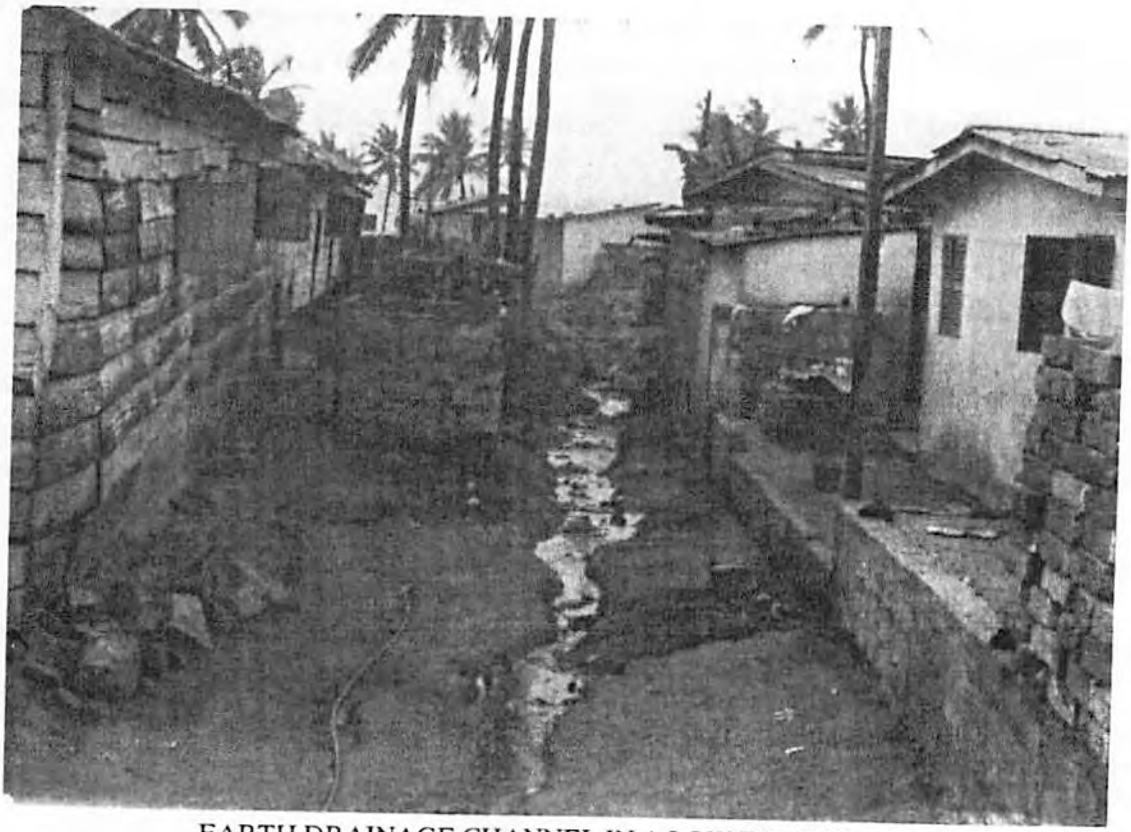
The Greater Accra metropolitan drainage catchment area extends from the eastern boundary of the Nyanyanu catchment on the west of the Greater Accra regional boundary to Laloi east of Tema. Extensive literature on the hydrology of this area is available in a number of documents. There are 7 principal drainage basins in the metropolitan area. Their characteristics are shown in Figure 5.7 (Drainage Basins and Flood Prone Areas) and are described briefly below:

(i) Densu River Catchment and Sukumo Lagoon

This is the largest of all the 7 coastal basins within the study area. The total drainage area is about 2,500 km2. It is divided into two sections above and below the Weija dam. The northern section of the basin, which extends inland along the Densu river and its tributaries 100 km, is hilly with the highest point reaching 230m



ODAW DRAIN CHOKED WITH WEEDS AT CAPRICE



EARTH DRAINAGE CHANNEL IN A LOW INCOME AREA

DRAINAGE

above mean sea level. The southern section of the basin is low lying land comprising the Sakumo I lagoon and Panbros salt pans. The Lafa stream flows into the lagoon and drains much of the western area of Accra including Dansoman, Kwashieman, McCarthy Hill and Awoshi. Much of this catchment is now urbanized.

Flooding is common along the 8 km of the Densu River below the Weija dam whenever there is overtopping or deliberate release of water over the spillway. Flooding is also prevalent in Dansoman area and along the Lafa stream where it crosses the Winneba and motorway extension roads. Few of the drainage channels in the catchment are constructed. As a result, there is heavy erosion of drainage channels - many of which flow down existing tracks and roads. Access to this area is often cut off and roads become impassable during heavy rains.

Ga District above the Weija dam is drained by the Nsaki and Densu rivers. The towns and villages in the district are developed mostly on ridges with the flood plain used for agricultural purposes. Very few towns and villages in the district have a proper drainage system. Several parts of the district are cut off during heavy rain. In recent years, flooding has become more severe as the upper catchment areas have been stripped of natural vegetation and the land cultivated more intensively. The flood control dam on the Nsaki has been completely silted up.

(ii) Korle-Chemu Catchment

This catchment covers an area of 250 km2. It is bounded on the west by a line running roughly south-north from Gbegbeyise, Dansoman, Kwashieman, New Achimota; on the north by the Achimota- Legon axis; and to the east by East Legon, the Airport and Ridge. The highest spot on the basin is about 308m above sea level. The principal streams that drain the catchment are the Odaw River and its tributaries the Nima, Onyasia, Dakobi and Ado. The principal outlet for water in this catchment is the Korle Lagoon. There is a minor outlet at Chemu I Lagoon.

The Korle - Chemu catchment contains the major urbanized areas of Accra. Many of the drainage channels are poorly developed and maintained. Erosion and siltation of drains is a serious problem. In low lying areas flooding is a serious problem, with many houses being inundated by flood water during and after heavy rains. Following the Netherlands Engineering Consultants (NEDECO) report in 1963, a considerable amount of work was done, particularly in connection with the Korle Lagoon and the Odaw River, but work was eventually stopped. The drainage channels, until recently, had not been maintained resulting in the silting of the major water courses and the lagoon.

In low lying areas near the Accra Academy in Kaneshie, rapid runoff from Asoredanho overflows into the Bank of Ghana flats because inlet to the Kaneshie drain is inadequately designed. Similar problems occur in the industrial and cemetery area around the Obetsebi Lamptey Circle where the interceptor drain and gullies are inadequate. There are many other areas, like Nima, Dzorwulu, Darkuman and Alajo which have localized flooding problems caused by inadequately designed and constructed drainage channels. Madina and surrounding areas also suffer from floods due to inadequate drainage channels and the flat nature of the terrain.

Most roads in the catchment are not surfaced and side drains are mainly uncovered. The channels become convenient places for the dumping of refuse. This, combined with erosion, results in choked and silted drainage channels. These problems must be tackled by regular maintenance and the construction of new channels and culverts where existing ones are shown to be inadequate. Until good access roads with properly constructed side drains are provided in all urban areas, old and developing, drainage and flooding will continue to be a problem every rainy season.

(iii) Kpeshie Catchment

The Kpeshie drainage basin covers a relatively small catchment area of 110 km2. It is bounded on the east by the Military Academy at Teshie, on the north by a line south of Madina and Ajirignano. It covers the eastern part of Accra, Ridge, Cantonments, Osu, Labadi and Burma Camp areas. Streams in the catchment generally flow north to south, emptying directly into the principal outlet to the sea at Kpeshie Lagoon or the small Klorte Lagoon at Osu.

Improvements have been made to straighten some of the water courses in Christianborg and South Labadi. Drainage in the Labadi township is inadequate and many waterlogged areas become flooded with light rains. In heavy rains, fence walls collapse and foundations are undermined. Southern Teshie is subject to severe flooding in the rainy season. Large parts of Teshie are without proper drainage with only the lower channel sections leading to the sea outfall. Most channels are heavily silted and choked with refuse in the middle reaches.

(iv) Songo-Mokwe Catchment

This is the smallest drainage basin in the metropolitan area. It covers about 50 km2, draining the area of Teshie to the ridge line with the Sakumo II catchment. Two main streams drain the area flowing into the Mokwe and Songo Lagoons. Much of this catchment is undergoing residential development. Drainage channels in the western part of the catchment are inadequate resulting in serious flooding in the Teshie/Nungua estates and the cutting of the main coastal road to Tema. The stormwater channels constructed alongside and under this road are completely inadequate. In central Nungua, the market cannot operate regularly because of waterlogged ground and poor drainage. The valley before the Police Barrier at Nungua also has inadequately sized culverts. Poor maintenance of the earth drains along the road in the area of the Maritime Academy also causes flooding of the coastal road.

(v) Sakumo II Catchment

This catchment covers a total area of 350 km2. The catchment boundary extends from Madina to Oyarifa on the west and further to the Aburi highlands in the north. On the east, it is bounded by an approximate north-south line which also marks the western boundary of Tema. The entire basin is low lying and generally flat. Maximum elevations within the basin rarely exceed 60m above sea level. The major streams that drain the basin are Mamahuma, Dzorwulu and Gbagbla Ankonu. The first two streams have impounding reservoirs on them. The impounded water is used for irrigation purposes. The outlet to this basin is the Sakumo II Lagoon which opens to the sea via a narrow culvert situated on the Accra-Tema beach road near the railway crossing.

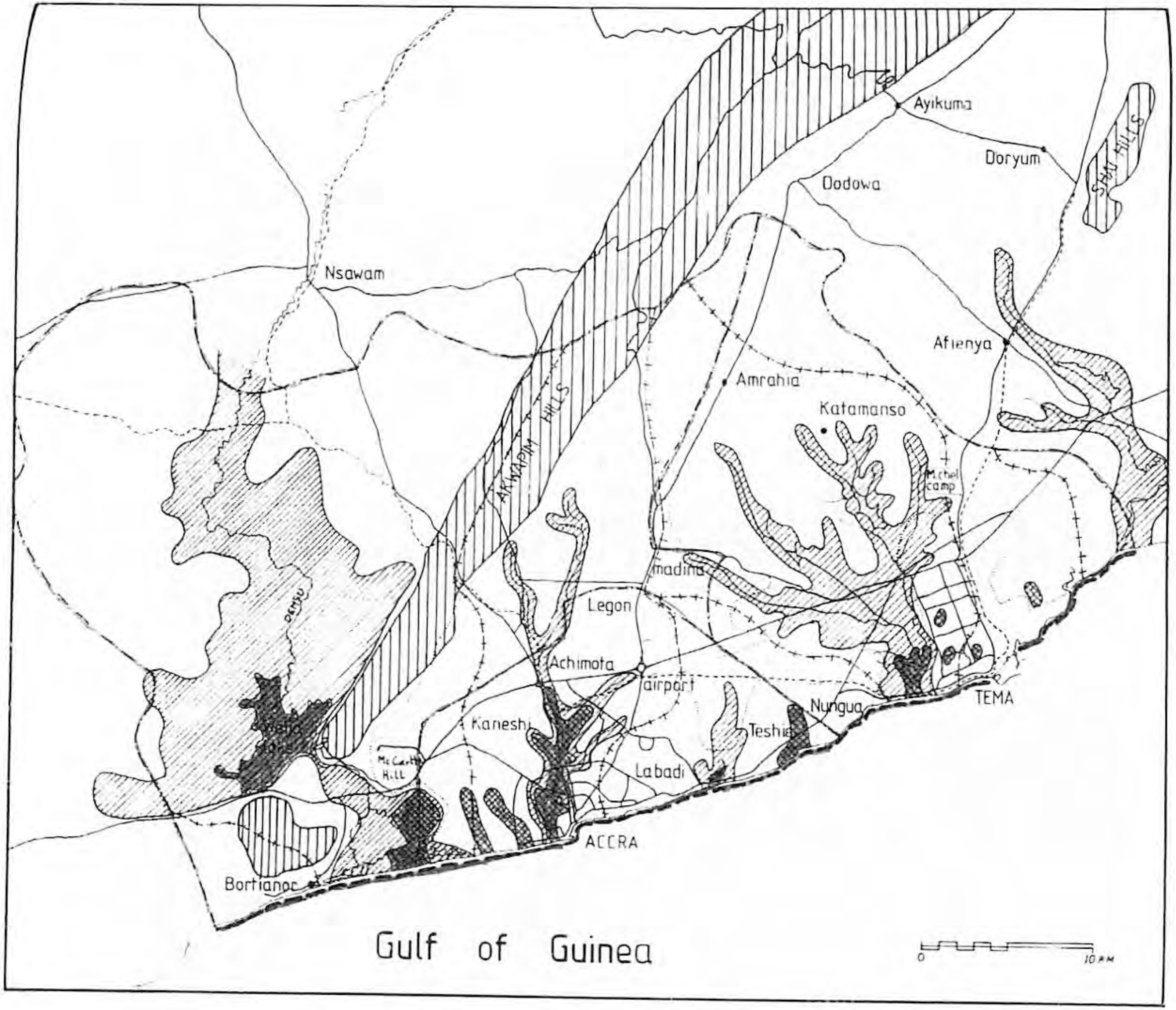
The eastern part of the basin contains the built-up area of Tema and Ashaiman. Tema, has developed in accordance with the town plan and here the surface water is conveyed in a roadside channel system to the lagoons. Most of the roadside channels in Tema are earth drains or masonry channels - many of which are in very poor condition due to poor maintenance. In some parts of Tema water channels - especially in the Kokompe area around the flour mills - have created gullies in the roads making them impassable. Several new estates are being constructed on the western side of the Sakumo Lagoon. Drainage in this newly developing area is not well developed and erosion of the drainage channels is already occurring.

Ashaiman lacks a drainage system and soils become heavily waterlogged during the rainy season. The culverts provided on the Lashibi to Ashaiman road are too small resulting in flooding along parts of this road. When this occurs stormwater drains through the narrow subway under the motorway linking Lashibi to Ashaiman and it often becomes impassable. To solve this problem, a comprehensive drainage project has been planned in 1992 for Ashaiman which will be funded partially by the World Bank.

(vi) Chemu II Catchment

This catchment drains the Tema township up to Kpong. The total drainage area is 98 km^2. The highest elevation within the basin is approximately 55m above sea level. The major stream that drains the basin is the Gyrokorgyor. Water from this basin enters the sea through Chemu II and Gao Lagoons. The western part of the Tema industrial area drains into the Chemu Lagoon, and the land to the east into the Gao Lagoon. In most of the drainage areas, the channels provided are not adequate to cope with the storm water they are designed to carry, resulting in serious localized flooding in the downstream reaches of Chemu stream. VALCO

FLOOD PRONE AREAS


Ayikuma
Doryum
SHAI HILLS
Dodowa
Nsawam
Afienya
Amrahia
Katamanso
AKWAPIM HILLS
Michel camp
madina
Legon
DENSU
Achimota
airport
Kaneshi
Nungua
TEMA
Teshie
Weija lake
McCarthy Hill
Labadi
ACCRA
Bortianor
Gulf of Guinea
0
10 KM

LEGEND :

▩ Flood prone areas

▨ Important freshwater syste

▥ Hills

—— Seafront near shore water

-+-+- Catchment boundary

-·-·- District boundary

Fig 5.7

Accra Planning & Development
Programme [illegible]

aluminium works and Volta River Authority have provided adequate surface drains to protect their properties, but the area near the steel works floods and the roads become impassable during the rainy season.

(vii) Laloi Catchment

The Laloi catchment is on the eastern verge of the metropolitan area. It is the second largest catchment in GAMA, covering about 660 km2. The major stream that drains the catchment is the Dekyidor river which takes its sources from the Dodowa and Agomeda highlands and the Shai hills. The highest point in the basin is located around the Shai hills and is up to 230m above sea level. The river is dammed at Dawhwenya to provide water for irrigation purposes. Other streams that drain into the Dekyidor are the Ohudor and Nopendor. The basin is generally low lying with over 40% of it less than 40m above mean sea level.

(b) Drainage Master Plan

The first overall drainage plan for Accra was prepared in 1955 in a report submitted to the Ministry of Housing. It sought to address some of the more serious problems associated with flooding along the Odaw River and Labadi and made some recommendations for improving the drainage channels. The 1958 Master Plan of Accra did not address the issue of drainage in any detail. A comprehensive drainage plan was prepared for Tema in 1961 as part of the Master Plan. In 1963 NEDECO prepared a comprehensive drainage plan for the area within the motorway, but confined mostly to the lower catchment of the Korle and Kpeshie lagoons.

The principal proposals in the 1963 plan were:

Channeling of the Odaw River from Korle Lagoon to the motorway.
Construction of the following drains:-

Kaneshie
Onyasia
Klottey stream
Nima creek
Adabraka
Zongo

In addition to these major drains, a number of secondary drains were to be constructed. Secondary drains were also proposed in the industrial area and in low lying areas adjacent to Korle Lagoon. Most of the primary drains have now been built - a significant achievement, given the many problems the metropolitan area has faced for the last 20 years. There are still parts of the network which remain uncompleted. A new drainage master plan for Accra has been prepared by Mott McDonald in partnership with a local engineering consulting firm of Watertech for the Ministry of Roads and Highways. The plan has still to be approved, but it outlines a number of proposals for improving culverts and drains in the Accra metropolitan area. It does not cover Tema. The plan also addresses the very serious problems of siltation and entrances to the lagoons. The Tema Master Plan is still being used as the basis of constructing the drainage system in that district. The Master Plan, however, is in need of review.

(c) Issues Affecting Urban Drainage

Poor drainage is a problem which affects many parts of the metropolitan area. Some drainage problems are created by natural features such as the underlying geology, soil conditions and localized topographic features. Development should never have been permitted in these areas, however, the lack of planning control has been unable to prevent urban encroachment. The majority of the 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 following issues require special attention in developing a strategy for drainage in the metropolitan area.

(i) Flooding

The principal areas that are liable to flooding in the metropolitan area are:

1. Panbros Salt Ponds
2. Dansoman - Mpoase - South Odorkor corridor
3. Dansoman - Sukura - Chorkor corridor
4. Mataheko - Abossey Okai - Korle Lagoon corridor
5. Odaw-Dzorwulu - Awudome - Industrial Areas System
6. Teshie
7. Sakumo II Lagoon Area
8. Darkoman - North kaneshie
9. Tema Western Drain - Communities 6, 10, 11
10. Tema Mid-Western Drain - Communities 2, 5
11. Tema Kokompe Drain
12. Valco Drain Area

Areas which are subject to flooding are shown on Figure 5.7. A total of 230,000 people (Table 5.3). are adversely affected by flooding in the GAMA. An estimated 15% of this population (34,500) live within the coastal zone areas at Faana, Mpoase, Dansoman, Gbegbeysie, Chokome and Tetegbu.

One of principal reasons for the periodic flooding in the metropolitan area is insufficient local feeder canals of adequate capacity to accommodate intensive stormwater runoff. Other factors which contribute to flooding include lack of maintenance and control of vegetation in existing drainage channels and structures, undersized culverts and bridge openings, physical obstruction in drains by solid waste and silt, development of low lying areas without adequate drainage outlets such as Panbros Salt Ponds area and Dansoman-Mpoase-South Odorkor corridor. The construction of roadway fills or embankments without provision for removal of flood waters except by seepage and evapo-transpiration is another cause of flooding. Some of the drains in the metropolitan area are not well aligned or are too flat for discharge by gravity as can be seen in Alajo.

Table 5.3 Population Affected by Flooding in GAMA

Area	**Population**
1. Dansoman/Mpoase/Gbegbeysie/Chorkor	19,031
2. Chokome/Faana/Tetegbu	2,173
3. Chemu I area	70,185
4. Korle/Odaw/Alajo/Dzorwulu and Achimota area	73,136
5. Teshie	20,069
6. Nungua	1,557
7. Sakumo II	9,396
8. Tema	21,924
9. Tema Newtown	3,132
TOTAL	**230,000**

Source: Coastal Management Plan 1991

tation

an expected increase in the level of development in the GAMA, by the year 2000 the quantity of sediment erated from surface erosion may exceed 5 times that at present, according to the Coastal Management t Report. The frequency of dredging of some lagoons and drainage channels will, therefore, have to be eased to account for the increase in sediment yields. In order to maintain some balance on the levels of ation in the lagoons, measures will need to be taken to check the transport of sediment along the drainage stems. There are insufficient resources available to clean major drainage channels more than once every years or to fund, in the short-term, many of the proposals in the Mott McDonald drainage Master Plan. Other ss expensive solutions in the form of sedimentation basins or silt traps must be examined, together with onservation measures addressed below.

(iii) Choked Drains

The lack of adequate drainage and under designed channel capacity in many areas has 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 wash down polluted water into low lying areas. A well organized programme for seasonally clearing drains is required to ensure they remain free flowing.

(iv) Impeded drainage

Several low lying areas along the Odaw and Sukumo 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.

(v) Dredging

Dredging of the Sukumo II and Korle lagoons is required to reduced flooding and provide improved flow in the existing channel system. There are, however, a number of problems involved with Korle which make the dredging of this lagoon expensive. In the upper reaches of the lagoon old car bodies and other wrecked nachinery and equipment have been carried or deposited in the lagoon and are now embedded in the floor of the estuary. The removal of wreckage is necessary to create a proper channel and to ensure adequate flushing once the entrance is widened. The cost of dredging will be expensive and it is therefore important hat once dredging of this lagoon has been completed further dumping of wrecks and waste is prohibited.

The disposal of silt from the lagoons has the potential to create a number of problems. There are opportunities o utilize material for filling low lying areas near the edge of the lagoons. However, the Sakumo II and Korle agoons are both under consideration as Ramsar (conservation) sites and excessive interference of the low ying area by filling will destroy much of the habitat for wildlife. Filling also removes storage capacity. Dredging also needs to be well managed as the operation can release dangerous quantities of methane and other toxic ases into the water in the estuary. This could have a devasting impact on marine life. There is the need to onsider carefully the disposal of material taken by dredging so that undesirable environmental impacts of this operation are minimized.

i) Lagoon Outfalls

Many of the lagoons along the coastline remain closed until opened by heavy rains. Others like Korle, Sakumo and Chemu II have very narrow outlet channels. In the case of Korle and Sakumo these do not provide ufficient capacity for stormwater discharge or adequate flushing of the lagoon systems. Subsequently, these lagoons have become very polluted with a large build up of sediment. Korle is well overdue for dredging. In order to improve the quality of water and provide sufficient channel clearance to enable flood water to be dequately discharged, the channel entrances at Korle and Sakumo II lagoons must be widened substantially.

There is also a need to bypass the dry season flow around the edge of the lagoons to prevent the disch ge of waste and maintain water quality in the upper reaches.

(vii) Local Drains

Currently no authority is taking responsibility for constructing and clearing local drains. Many of these are open sewers and a major health hazard. There must be some organization made responsible for ensu g that these are cleaned as part of a public health programme.

(viii) Engineering Design

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 under-estimation of siltation loads are common faults. Conversely, concrete lined drainage channels on b h sides of residential streets are often more expensive to construct than the road itself. Simpler design standa s could enable much larger areas to be serviced by stormwater drainage. There is the need to review many of the current design standards to ensure all drainage systems have adequate capacity, but also that standards adopted are not excessively expensive.

(ix) Conservation of Catchments

As the metropolitan area expands and more land comes under intensive cropping in catchments undergoi urbanization, surface water runoff will increase. This will lead to increased siltation and more severe floo down stream - especially in areas surrounding the lagoons. If this situation is to be avoided engineering and conservation measures will need to be applied to reduce the rate of runoff. There is the need to introduce measures to protect the upper catchment areas and streams where development and more intensive cro production is expected to take place.

(x) Management

A number of flood management options in the metropolitan area have been presented in the Environmental Study of the Accra Metropolitan area (EMA, 1989). Most areas within the 1 in 50 year flood limit have now been mapped and this could be used as a sound basis for management of flood prone areas. Stricte development control measures must be applied to these areas in future and where necessary structures tha obstruct floodways removed. As part of the planning process, the Accra and Tema drainage master plans should be reviewed regularly.

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 side drains. No one will take responsibility for minor drains. This is a major problem as many of these are choked up with rubbish and are a major health hazard. Waste Management Department of AMA has recently cleared a number of smaller drains, but community work schemes are also required to clear local drains from time to time. This matter should be examined carefully under the decentralization process to ensure one organization is responsible for the construction and maintenance of the metropolitan drainage system.

5.2.4 Solid Waste Management

Solid Waste Management in Accra is the responsibility of the Waste Management Department (WMD) of the Accra Metropolitan Assembly and in Tema that of the District Engineer's Department (DED). The refuse collection service extends to households (by far the largest collection operation), markets, offices/shops, hotels, restaurants, hospitals and selected industries which generate semi domestic waste.

REFUSE DUMP AT AGBOGBLOSHIE BEHIND CENTRAL RAILWAY STATION

REFUSE HEAPED ON THE BANKS OF NIMA DRAIN

SOLID WASTE

The refuse produced is in the order of 0.52 Kg per person per day (ppd) for low income areas and approx. 0.38 Kg ppd in the high income areas. The average is 0.51 Kg ppd which equates to about 670 tons of solid waste per day for the metropolitan area.

Most refuse is wet with high organic content but the non-biodegradable, combustible and hazardous/toxic content is expected to increase in future. The following summarizes the current solid waste management system in the metropolitan area and some of the issues which must be addressed in providing a safe reliable collection and treatment system in future.

(a) Existing Situation

(i) Collection System

In Accra, WMD operates a small fleet of vehicles for its house to house service. There are about 3,000 house to house collections, in addition to commercial and government premises for which a regular service is provided. Collection is made once weekly to mostly medium and high income areas. The house to house service covers about 5% of the population. In many middle and high income areas where this service is provided it is estimated that a considerable number of households still continues to dump rubbish indiscriminately or burn it.

The bulk of the population in Accra is required to take their refuse to the containers at sanitary sites which are supposed to be removed daily by multi-lift trucks. The Waste Management department of the AMA serves more than 180 container locations where residents can dump their household refuse. WMD provides containers of 7, 10 and 16 cubic metre capacity for the purpose. The number of containers left at each site depends on the population of the area.

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. In order to augment its fleet of two collection vehicles, DED hires open back trucks to provide a service to low income areas which are mostly served by unplanned sanitary sites with no containers. No levy is applied for collection.

There is still a number of people who dump their refuse on waste ground or roadside verges as well as water courses passing through the town. This is mainly due to lack of education, low environmental consciousness, distance from containers and poor enforcement of the law against indiscriminate offenders. The worst area where this can be seen is Nima, through which Nima creek passes. In the dry season the bed and banks of Nima creek become very objectionable. In the wet season much of the dumped material is washed away to be redeposited in the Korle Lagoon thereby adding to the pollution in the lagoon and the sea where it is eventually deposited on the beaches. The silting up of the diversion channel provided for the dry weather flow of the Odaw channel only compounds the pollution problem in the lagoon.

(ii) Disposal

Refuse is disposed of at sanitary landfill sites. Refuse collected from Accra is disposed of at Ring Road West Sanitary landfill site and Mallam Sanitary landfill site. The refuse is compacted and covered with earth or sawdust. Most solid wastes are treated in this manner; neither WMD nor DED incinerate refuse.

Some recycling of solid waste takes place in Accra: Plastics (aided by a plastic waste recycling fund), glass (bottles) and metals. There is a compost plant in operation at Teshie for all domestic refuse from Teshie and Nungua. Out of approx. 11,000 t of waste input some 5,000 t of compost can be produced.

The disposal of refuse in Tema is a problem with refuse material being deposited at land fill sites in low-lying areas and old quarries at Dawhenya on the Aflao Road. This is resulting in down stream pollution and putrefacation of entrapped water at the fill sites. There is no waste disposal system operating in Ga district. In the rapidly urbanizing parts of Ofankor disposal is by dumping on waste ground and burning.

(iii) Planned Improvements to Waste Management Services

By 1995, it is intended that both, Accra and Tema, will have some form of Waste Management operating in every community --either house-to-house or central container services. WMD Accra has a programme for improvement and expansion of their service by encouraging private participation. Education campaigns are also planned. WMD hopes that by 1995 at least 40% of the service could be privatized, WMD sees its own role in the long term as being largely administrative.

(b) Issues Affecting Refuse Collection and Disposal

(i) Collection of Domestic Refuse

While the waste management programme improvements proposed are essential to improve the quality of the urban environment, there are a number of important issues which still have to be addressed. To provide a regular collection for the metropolitan area will require additional assistance in plant, machinery and vehicles, together with the necessary backup support for maintenance and replacement. The current waste management programme is supported by the German government. The service is heavily subsidized and if this support is not continued or a full cost recovery scheme introduced, it is doubtful if the level of service proposed by 1995 can be achieved.

As major problem of the central container service, insufficient containers and capacities result in over-spilling and indiscriminate dumping of refuse. Each house is expected to pay a refuse levy, but collection hardly exceeds 9% of households. So far, WMD focus has remained on education rather than prosecution. The introduction of privatisation for local collection followed by stricter enforcement by community leaders of penalties for dumping waste would greatly improve waste collection. Privatisation of bin collection with penalties for non-collection should ensure improved area collection.

(ii) Strategy for Waste Disposal

By the year 2010 the amount of waste generated in the metropolitan area will reach 4,500 tonnes per day. This raises the issue of the best means of disposal. Land filling is the simplest and most convenient method of disposal, but suitable sites in the metropolitan areas are limited because of odour and ground water pollution which emanates from land fill sites well after they have been closed. Composting is a good way of putting waste material to use in horticulture as well as recycling some products; however, it becomes less practical as dry matter, non-organic and the toxic content of waste increases. A third method of disposal is incineration. However, it is doubtful, given the high wet organic concent of rubbish produced that incineration of all metropolitan wastes can be afforded within the next 20 years. Nevertheless, there is a need to develop a clear strategy for the disposal of different types of waste. Land fill is the most economic short-term solution but finding suitable sites will require a great deal of care and research if the ground water and surface stream pollution from decomposing rubbish is to be avoided.

(iii) Waste Clean up and Prevention Measures

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. Simple measures also need to be developed to screen and clear solid waste from drainage channels during wet weather flows. Given the limited resources of the agencies responsible for cleaning refuse from drains, much of the initiative 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. Screens should be provided for the drainage channels - especially on Odaw River which flows into Korle Lagoon. Some portions of drainage channel should be covered to avoid the dumping. New sullage channels should be covered to stop the dumping of objectionable materials into them.

The tendency for people to throw refuse into the nearest stream or open area is a habit which is very difficult to change - especially if there is no alternative. There is also reluctance to pay for a service when an existing practice costs nothing. Most people, however, accept that local disposal of refuse is not desirable and given the encouragement will eventually agree to pay for such a service - provided it is cheap and reliable. Developing a culture of waste disposal will need to be supported at a community rather than a high authority level. One of the real issues is how to introduce and promote programmes to improve local refuse collection and household refuse disposal habits.

Table 5.5 Basic data for the solid waste management in Accra

	1992	1993	1994	1995	1996
1. POPULATION GROWTH					
(i) percentage	3.7	3.7	3.7	3.7	3.
(ii) absolute figures	1,314,490	1,363,126	1,413,562	1,465,864	1,521,566
2. WASTE GENERATION					
(i) per capita per day (kg)	0.51	0.52	0.53	0.54	0.5
(ii) specific gravity (t/m^3)	0.50	0.50	0.50	0.50	0.5
(iii) total for Accra (t/d)	670	709	749	792	837
(iv) total for Accra (m^3/d)	1,341	1,418	1,498	1,583	1,674
(v) total for Accra (t)	245,363	258,721	273,454	288,922	306,291
(vi total for Accra (m^3)	490,725	517,443	546,907	577,843	612,583
3. SOLID WASTE COLLECTION CENTRAL CONTAINERS (m3)					
(i) Annual Target WMD From Central Containers	372,000	396,000	408,000	420,000	420,000
4. SOLID WASTE COLLECTION COMPACTION TRUCKS (m^3)					
(i) annual target WMD	16,000	18,000	20,000	24,000	24,000
(ii) from private contractors	5,000	10,000	14,000	18,000	18,000
(iii) total from compaction trucks	21,000	28,000	34,000	42,000	42,000
5 TOTAL COLLECTION OF SOLID WASTE (m^3)					
(i) annual target for Accra	393,000	424,000	442,000	462,000	462,000
6. COVERAGE RATE FOR SOLID WASTE COLLECTION (%)	80.1	81.9	80.8	80.0	75

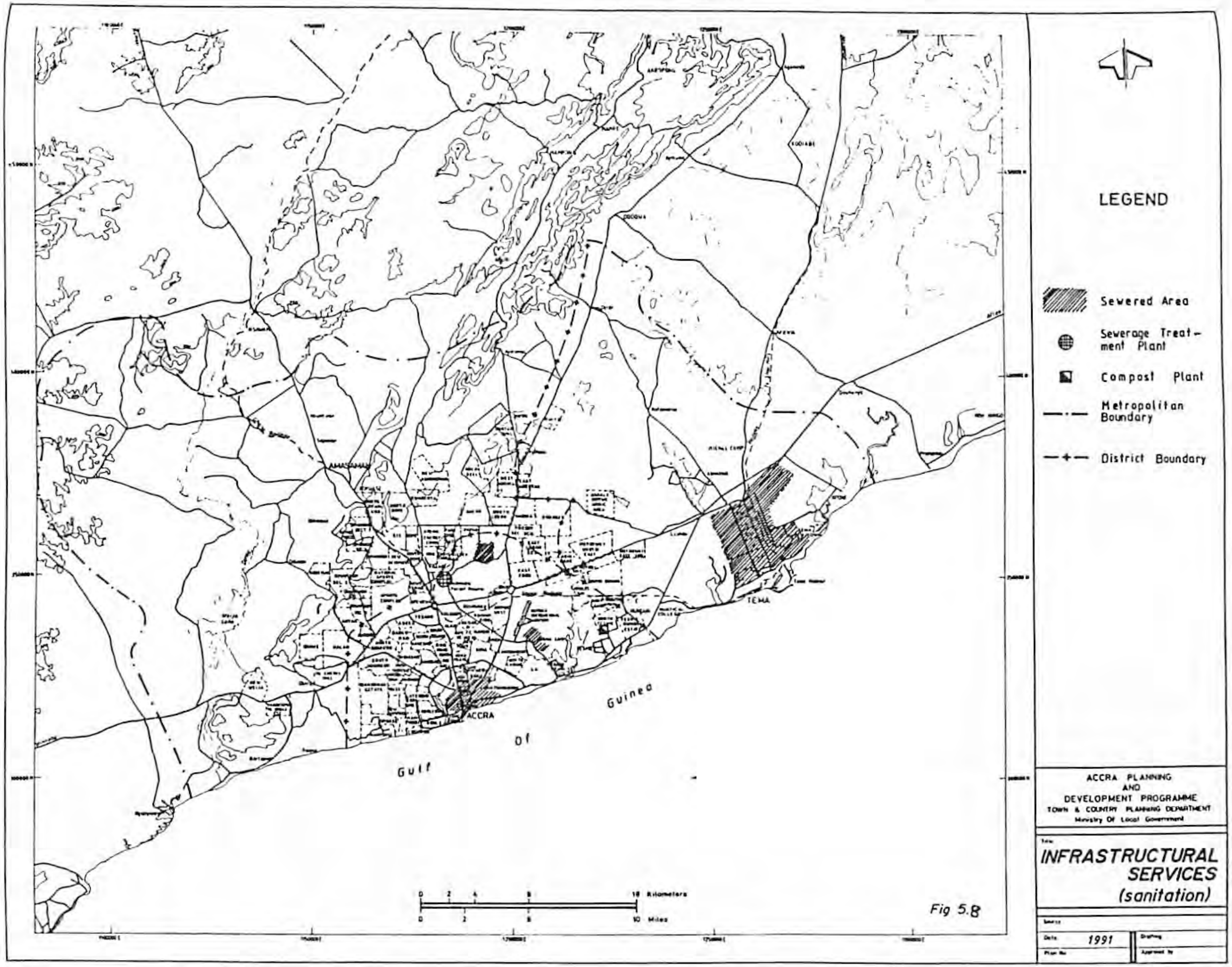

LEGEND
▨ Severed Area
Severage Treatment Plant
Compost Plant
Metropolitan Boundary
District Boundary
ACCRA PLANNING AND DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government
Title
INFRASTRUCTURAL SERVICES (sanitation)
Source
Date 1991
Drafting
Plan No
Approved by
ACCRA
TEMA
AMASAMAN
Gulf of Guinea
0 2 4 8 10 Kilometers
0 2 8 10 Miles

Fig 5.8

5.2.5 Electricity

(a) History

Electricity service was introduced in the city of Accra when the Public Works Department (PWD) established a direct current electricity supply to Accra in 1922. Later, in 1924, an alternating current supply project was commenced. The Accra diesel power station was subsequently commissioned to be followed by other diesel stations in Legon and Teshie. In 1963 the Electricity Division introduced a 161 kV transmission in Ghana with the construction of the Tema-Accra line. The 32MW Tema diesel plant served most of the load in Accra via this line till 1st September 1965 when power from the Akosombo hydro project became available to the city. In 1967 the Electricity Corporation of Ghana (ECG) was incorporated and charged with the generation (diesel), sub-transmission and distribution of electricity throughout Ghana. Since 1967 ECG has undertaken some system expansion and rehabilitation projects in the country including Accra. Between 1968 and 1976 ECG undertook Development Projects phase 1, 2 and 3. By this time ECG had established a fairly reliable 33kV and 11kV system in the city. However with the downturn of the economy from the mid 70's to the mid 80's ECG was unable to obtain adequate resources to cope with growth in demand and to undertake systematic maintenance. ECG's financial position worsened and services deteriorated to appalling levels. Between 1987 and 1990, ECG implemented a programme to provide emergency improvements to its facilities pending acquisition of funding for a more comprehensive system, reinforcement and expansion programme.

(b) Distribution

The city of Accra is supplied with electricity from the national electricity grid through a bulk supply point at Achimota substation (Station H). The voltage is stepped down from 161kv to 33kV by the Volta River Authority (VRA) and supplied to the Electricity Corporation of Ghana (ECG) which is responsible for distribution throughout the city. The capacity of the supply point is 198MVA. ECG transmits the electricity to its primary substations at 33kV using both underground cable and overhead networks.

There are fourteen main substations in Accra and another seven in Tema with ratings ranging from 10MVA to 40MVA *(See Figure 5.9)*. At main substations, the voltage is stepped down to 11kV and supplied to distribution substations. Underground cable is favoured for 11kV distribution within older and built up portions of the city where it will be difficult to obtain the clearances required for overhead lines. The lower cost of overhead lines makes it more attractive in other areas. The ratio of underground cable to overhead lines in the 11kV network is 7:3.

Distribution substations in Accra have ratings between 5kVA and 1MVA with the most common being 500kVA. Voltage is stepped down to 230V and distributed in a network of overhead lines and underground cables. Use of underground cables for distribution to small scale consumers is common only in the oldest parts of the city. The ECG actively discourages its use in new developments due to the high capital costs.

The 33kV and 11kV networks generally are in good condition and capable of meeting existing demands. Low voltage networks are in relatively poor condition, often overloaded and extended for excessively long distances. The result for some consumers is poor quality of supply and unreliable electricity supply. The distribution system has unacceptably high outage rates and a high system loss of 20%. The technical losses are incurred as the result of poor distribution of electricity, power theft, inaccurate metering and billing. The nearby towns of Dodowa, Mampong and Nsawam are supplied at 33kV from Accra. Accra's distribution network is linked to Tema and Nsawam by 11kV overhead lines. The Tema network on the other hand serves the sprawling township of Ashaiman and also Nungua to the east of Accra.

(c) Projected Demand for Electricity Services

Increase in demand is due to increasing demand from existing consumers, and connection of new consumers. Where consumer demand exceeds capacity for a long period, a pool of unsatisfied demand is created which is known as suppressed demand. Suppressed demand has three components:

Demand which will result from connecting applicants who currently cannot be connected for lack of capacity.

Reduction in demand of connected loads as a result of a supply voltage which is lower than specified standards.

Reduction in demand because some consumers are unwilling to acquire new electrical devices or to connect sensitive loads to a poor quality supply system.

During the period (1975-1986) development of the distribution network did not keep pace with consumer demand and this led to the creation of a large suppressed demand in Accra. It is, however, difficult to assess the magnitude of suppressed demand and this makes load forecasting in Accra extremely difficult. ECG's most current forecast is shown in Table 5.6. Below ECG's figures are modified estimates based upon discussions with ECG planning staff. The modifications take into account developments which occurred after completion of the official ECG forecast. This includes an unscheduled low voltage improvement scheme and the delayed start of the Fifth Power Project. The maximum demand recorded to date in 1991 is 145MVA. The modified forecast should therefore be considered conservative.

Table 5.6 Demand For Electricity in GAMA

Year	88	89	90	91	92	93	94	95	96	97
1990 Forecast	149	167	175	194	212	221	230	237	246	255
Modified fore-cast	195	212	250	273	285	293	302	-	-	-

Source: Electricity Corporation of Ghana, 1991

It has been found that growth in demand is related to the performance of the economy. A study concluded that domestic demand increases in periods of increasing gross domestic product (GDP) at the same rate as the rate of increase in GDP. Domestic consumption is static during periods of declining GDP. Industrial demand has been found to vary at the same rate of change as the GDP. The 10% annual increase in demand in 1989 and 1990 was significantly higher than recorded GDP annual increases of 5%. The additional increase is attributed in part by the ECG planning staff to an elimination of suppressed demand.

Industrial demand for electricity is affected by the prevailing tariff relative to prices for alternative sources of energy. Large cônsumers are known to switch from electricity to oil and vice versa to benefit from price differences. Switches occur only after long periods of existence of a price advantage. Domestic and small scale industrial consumption is relatively insensitive to tariff changes. Another factor is the reliability of electricity supply. As reliability increases, consumers are able to consider powering their more sensitive requirements, for which alternatives exist, with electricity. An example is increased use of electricity for water heating and cooking.

(d) Planned Developments

The ECG intends to carry out a major overhaul of its networks under the Fifth Power Project (P5) during the period 1991 to 1995. ECG is also planning improvements which are scheduled to be implemented outside of the Fifth Power Project. A summary of planned courses of action is as below:

1. Establishment of a second bulk supply point with capacity of 132MVA for Accra. This is in the planning stage. It is likely to be sited near the existing primary substation "E". (Implementation - after 1994).

2. Construction of a 33kV link between Accra and Tema to serve as a backup supply to the eastern part of the city. (Implementation 1992 - 1993 under P5).

3. Construction of additional 20MVA capacity 33kv circuits to provide improved security. Circuits are planned between main substations "A" and "B", "B" and "G" as well as "G" and "G". (Implementation 1992 -1994 under P5).

4. Provision of 10MVA additional 33/11kV transformation capacity at each of Stations "A", "F" and "M". (Implementation 1992-1994 under P5).

5. Construction of additional 11kV outlets from main substations to reduce the number of consumers on any single feeder and reduce impact of 11kv feeder faults.

6. Provide increased 11kV interconnection capacity between main substations as a backup in event of faults at main substations.

7. Injection of an additional 57MVA capacity of distribution (11/0.4kV) substations to eliminate suppressed demand, shorten supply feeders, decrease customers supplied per feeder and improve voltage levels and frequency of faults.

8. Recondition and construct new low voltage feeders to have similar effects as item 7.

9. Install a system for supervisory control and data acquisition (SCADA) for improved monitoring and control of the sub-transmission network. (Implementation P5).

10. Install 30,000 meters for billing.

11. Carry out system studies to determine optimum development scenarios and operational configuration for the Accra distribution system.

12. Institute a loss reduction scheme to identify the major causes of losses and design programmes for the reduction of losses to more acceptable levels.

13. Some outlying rural communities are scheduled to benefit from rural electrification schemes. They include Ofankor, Danfa, Bawaleshie, Oyibi and Gbawe. The closeness of these areas to Accra makes them attractive sites for housing of some workers from Accra. Provision of electricity and other amenities will make them more attractive and hasten the trend for construction in such areas.

14. Increasing the capacity of the Tema bulk supply station to 132MVA in 1993.

(e) Issues Affecting the Provision of Electrical Services

(i) Finance

The biggest constraint to the provision of adequate and reliable electricity service to the city is finance. ECG has to recover its capital outlays for network development directly from consumers. This tends to be prohibitive and out of affordable reach of many prospective consumers. ECG has had to secure loans in the past to be able to undertake expansion schemes in the city (and elsewhere in the country). The situation is not improved by a tariff which is less than 50% of the Long Run Marginal Cost of the generation transmission and distribution of electricity *(1991 figures)*.

(ii) Load Forecast

An important step in the provision of electricity is a 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.

(iii) Load Density

The utility attempts to maximize returns on its investments by providing improvements in areas where such improvements result in highest revenue. These areas are invariably the built up areas since a uniform tariff is applied irrespective of location. Thus newly developing areas with low load density are of lowest priority. This leads to a situation in which areas are developed to a large extent viz civil works but lack even the rudimentary services. It is after the utility perceives that a large suppressed demand exists that supply is made available. Newly developed areas therefore suffer poor quality supply for long periods unless or until a large scale developer pays for the provision of backbone lines for the area.

(iv) 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.

(v) Planning Information

Lack of or inability to use planning information from other departments. The ECG requires information for planning, some of which it is not equipped to collect but which is collected routinely by other agencies. Examples include base survey maps, thematic maps including land use patterns, population density patterns, etc. Where such information is available it may be in forms which makes it difficult to use in planning.

(vi) Land Acquisition

Land acquisition for provision of services is not generally difficult for ECG. This is because the Town and Country Planning Department normally includes plots for provision of substations in their layouts. Plans also include provision in road reservations for use for utility of services. Encroachment of reserved areas is becoming a more important problem. An action plan is therefore required to enforce plans. Where ECG requires large tracks of land say for right of way it often makes use of government legislative instruments.

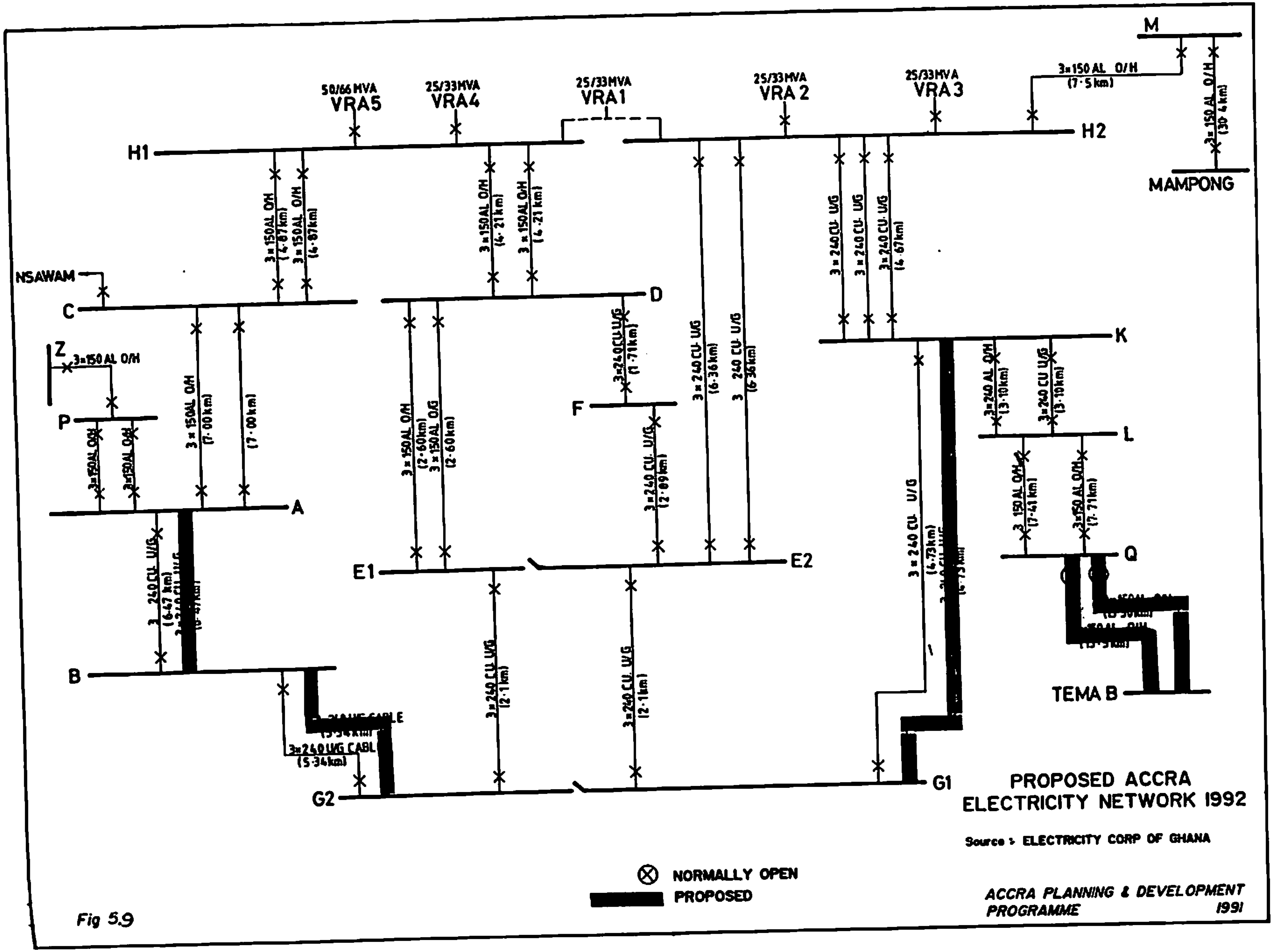
(vii) Lack of Coordinated Development of New Areas

ECG is often not informed of new developments until developers require its services. This makes planned development of infrastructure difficult. The result in some cases is unexpected strains on existing resources which leads to reduced quality of supply. This may be seen in some of the larger housing developments.

(viii) Lack of Coordination amongst Development Agencies

Without exchange of information amongst development agencies, each is unaware of the planning intentions of the others and acts without due consideration of the potential effects on other agencies. The electricity services are vulnerable to problems of this nature because provision of its services include plant which are hidden and which may be irreparably damaged by mishandling. The following have been known to occur:

Need to excavate newly resurfaced roads to lay cables because passage ducts are not available.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3=150 AL O/H (7.5 km)
50/66 MVA VRA5
25/33MVA VRA4
25/33MVA VRA1
25/33MVA VRA 2
25/33MVA VRA 3
H1
H2
NSAWAM
C
D
K
Z
P
F
L
A
E1
E2
Q
B
TEMA B
G2
G1
3=150AL O/H (4.87km)
3=150AL O/H (4.21km)
3=240CU U/G (4.67km)
3=240CU U/G (6.36km)
3=240CU U/G (1.71km)
3=240CU U/G (2.89km)
3=240AL O/H (3.10km)
3=240CU U/G (3.10km)
3=150AL O/H (7.41km)
3=150AL O/H (7.71km)
3=150AL O/H (7.00km)
3=150AL O/H (2.60km)
3=150AL O/G (2.60km)
3=150AL O/H
3=150 AL O/H
3 240CU U/G (6.47km)
3=240CU U/G (2.1km)
3=240 CU U/G (4.73km)
3=240 U/G CABLE (5.34km)
⊗ NORMALLY OPEN
▬ PROPOSED

PROPOSED ACCRA ELECTRICITY NETWORK 1992

Source : ELECTRICITY CORP OF GHANA

ACCRA PLANNING & DEVELOPMENT PROGRAMME 1991

Fig 5.9

Damage to electrical cables during road construction and other civil works because constructors have not bothered to seek help in locating any cables within area of works.

Construction of buildings is authorized or allowed to proceed over electricity cables. Some portions of cable then become inaccessible.
Within 1991, three 33kV cables have been damaged within Accra by road construction activities. Similar accidents occur at a higher frequency for the lower voltage cables. The cost in terms of lost revenue, repairs to plant and damage to public relations to the utility is very high in some instances.

(f) Priority Areas

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

Expansion of the distribution (11kV, 0.4kV) network to newly developing areas.

Provision of a second bulk supply point for the city of Accra.

Implementation of a geographic information system.

Billing and revenue collection by ECG.

Loss reduction.

5.2.6 Telecommunications

Telephone and telecommunication services generally in Ghana are the responsibility of the Posts and Telecommunications Corporation. The Corporation was set up in 1974 to replace the organisation previously managed and operated as a government department. The Corporation operates as two entities; namely, internal telecommunication services (ITS) and external telecommunication services (ETS) providing telephone, telex data and facsimile services. It is expected to operate as a profitable commercial concern. The following summarizes the current status of telecommunication services in GAMA, the demand for services and issues affecting the operation of services.

(a) Development of Telecommunications Services

Telegraphic services were introduced to Ghana in 1881, followed by a manually operated telephone system in Accra and Cape Coast using open-wire transmission. The first telegraph line between Cape Coast and Elmina was also completed in 1881 and then extended to Accra where a two and half mile circuit was constructed to link Christiansborg (Osu) and Victoriaborg (State publishing area). The facilities were provided for the sole use of the colonial government. The first manual telephone exchange in the country was installed in Accra in 1889 with a capacity of 70 subscriber lines. The first two automatic telephone exchanges in Ghana were installed at Accra Central and Cantonments in 1953 to satisfy the increased demand by mainly government subscribers. A new automatic exchange was installed in 1967 with a capacity of 10,000 lines to serve subscribers in the northern part of Accra. Cantonments and Accra Central telephone exchanges now have capacities of 6,000 and 8,000 lines respectively.

The gradual improvement and expansion of the telecommunications network within the country was continued up to 1968 when subscribers in 12 main centres were connected with trunk dialing (STD) facilities. Prior to 1970 most telecommunication services were provided solely for governmental use. After this time, the telecommunication system in the country was supported mostly by growing business demand, with expectations for services matching those of most advanced countries. With loans provided by the World Bank

(IBRD), the Government of Japan (OECF) and African Development Bank, the Corporation embarked upon a programme between 1975 and 1986 to develop the network of telecommunication facilities to improve the Corporation's revenue earning capacity.

The main improvements in the programme included: further replacements of manual exchanges with automatic exchanges including digital exchanges; expansion and modernization of local distribution networks; expansion of radio transmission systems within the national trunk network and providing link-ups with neighbouring countries of Togo, Cote D'Ivoire and Burkina Faso; provision of a new telex exchange and improved message transmission facilities; and provision of more efficient international service by the installation of a satellite earth station together with facilities for international direct dialing (IDD) for subscribers connected on digital exchanges. The Corporation has been compelled to invest at most economic levels in order to render it financially self-supporting in its operational and expansion activities. There are now over 55,000 subscribers in the national network, 80% of which are on automatic exchange lines. GAMA has over 20,000 subscribers.

(b) Existing Services

The P&T Corporation has five district telephone areas in GAMA with an installed capacity of 28,000 direct exchange dels. The capacity of the respective exchanges are as follows:

Accra North	10,000 lines
Accra Central	8,000 lines
Accra Cantonments	6,000 lines
Teshie Nungua	1,000 lines
Tema	3,000 lines

Each telephone area comprises a telephone exchange and local distribution network . The network for the metropolitan area and proposed new short- term improvements to services are shown on Figure 5.9. In addition to the 5 public automatic exchanges, there were over 180 private automatic branch exchanges (PABX) and 150 private manual branch exchanges (PMBX) in 1988. This figure has grown significantly in the past 3 years, especially because of the participation of private companies in the supply of subscriber terminals.

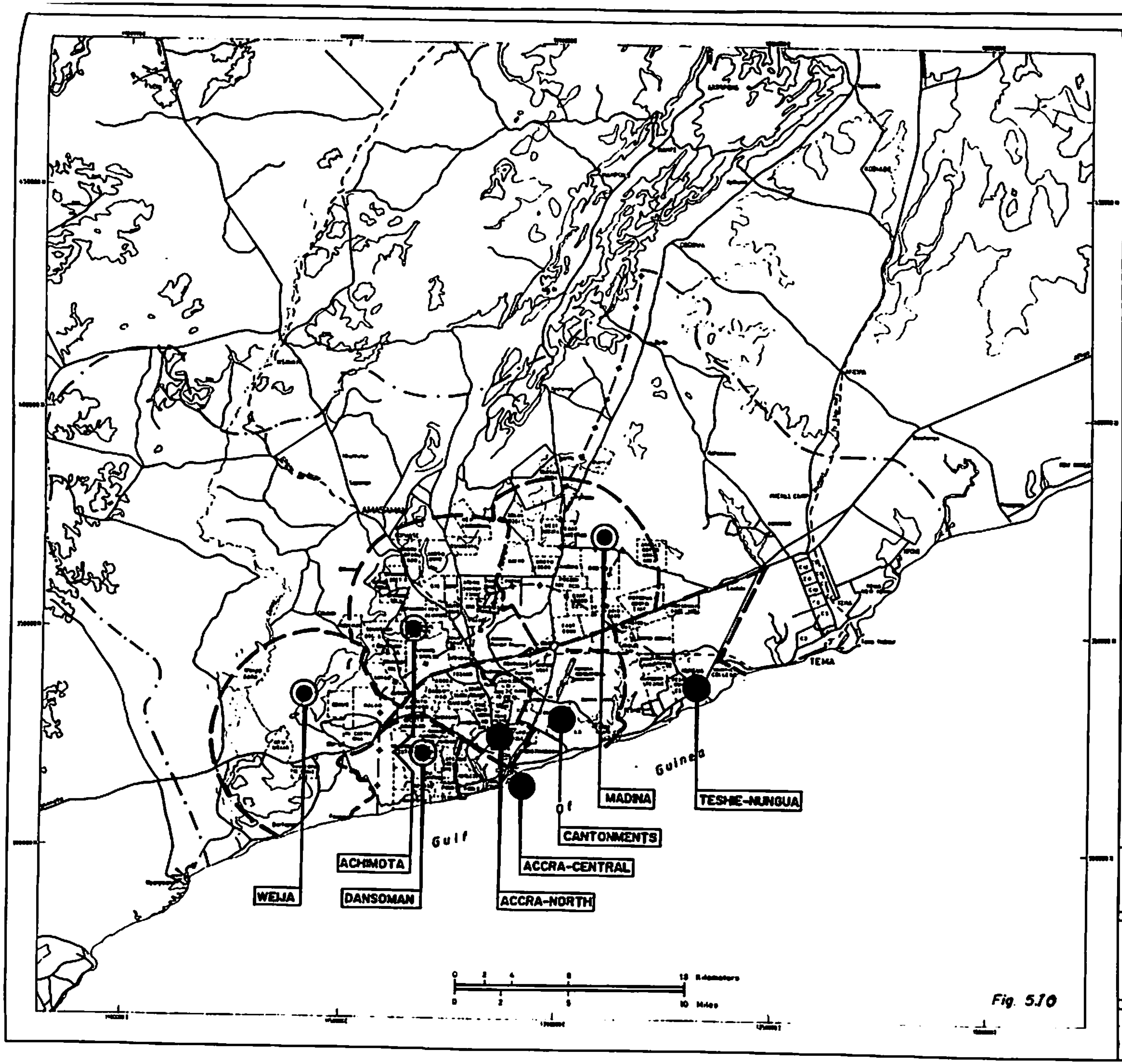
The quality of services within the metropolitan area has for several years now been unsatisfactory. Major operational problems that have contributed to the poor quality of service include: unavailability of spares and other vital materials for maintenance; deterioration of underground cables and subsequent faults due to moisture penetration; unavailability of adequate means of transportation for maintenance staff; shortage of adequately trained staff; losses due to cable theft and frequent disruption of service due to operation of other development agencies, and low levels of revenue collection resulting in unavailability of ready cash for normal operations.

(c) Demand for Services

(i) Forecasting

Telephone demand forecasting is usually made on two levels. Macro demand is made on a national or regional basis taking into consideration economic, population and social factors. Two ranges of forecast are made: long-term (usually to 20 years) and short-term (usually on yearly basis for five (5) years). In demand forecasting for various exchange areas, a microscopic approach is adopted on short-term basis, the results of which are compared with the macroscopic forecasts and then factors bringing about discrepancies are investigated and established.

Microscopic demands for exchange areas are obtained through block surveys to ascertain the demand distribution patterns for an area. Key factors that have to be considered in demand assessment are: the type of usage to which block units within the area are being put and whether any modifications are expected over


WEIJA
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DANSOMAN
ACCRA-NORTH
ACCRA-CENTRAL
CANTONMENTS
MADINA
TESHIE-NUNGUA
TEMA
Gulf of Guinea
0 2 4 8 12 Kilometers
0 2 5 10 Miles
LEGEND
BOUNDARY OF EXCHANGE AREA
EXISTING EXCHANGE
PROPOSED EXCHANGE
METROPOLITAN BOUNDARY
DISTRICT BOUNDARY

Fig. 5.10

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

Title

TELECOMMUNICATIONS EXCHANGE BOUNDARY FOR ACCRA

Source P & T CORPORATION
Date 1991

the planning period - by this means reliable penetration factors can more easily be established; the locations of other infrastructure services - present and future, and the expected return on investment for each type of facility.

The main objectives of demand forecasting at the micro level are: determination of the area to be covered by the network, together with the focal point of the network resulting in the physical or practical location of the exchange (switching facilities); facilitating the design of the local distribution facilities through the identification of locations of cross-connecting and distribution points; determination of traffic requirements; determination of the capacities of switching facilities, trunk circuit, power, building requirements, etc.

(ii) Planning

Considering the heavy investments that have to be committed in providing for telecommunications facilities, it is necessary to adopt the following guidelines regarding the planning periods of plant and equipment:-

(a) switching, power, junction facilities - 15 years
(b) local distribution facilities:-
    (i) primary network - 15 years
    (ii) secondary network - 20 years

A typical telephone exchange area comprises: 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 suitable electric power source either generated from the public mains or other sources such as electric generators or solar systems. About 60% of the overall investment costs are in the distribution networks. The local distribution network has always been the weakest link in providing services and needs to be planned, installed, operated and maintained most efficiently. The Corporation is gradually replacing the rigid network with a flexible system comprising primary and secondary distribution networks with cross connecting points serving as flexibility points for ease of maintenance, operation and management of the telecommunications system local distribution network.

(iii) Current Demand for Services

The demand for telephone in the metropolitan area is high. In late 1988, the Corporation had a waiting list of about 21,000 and this has now reached 28,000. The total shortfall in capacity over demand is now in excess of 33,000 dels. Table 5.7 shows the existing capacity, utilization and waiting list for services in 1988. As seen from the table, Accra North and Central, Tema and Cantonments are unable to satisfy current demand. Because of constraints in the distribution network it will be difficult to extend services even where exchange capacity is available as in the case of Accra Central, Cantonments and Teshie Nungua. For Accra North and Tema there is insufficient capacity at the exchange.

Table 5.7 Existing Automatic Exchanges and Services in GAMA

Exchange	Installed Capacity	Lines Connected °	Utilization	Waiting List*
Accra North	10,000	9,625	96.3%	6,064
Accra Central	8,000	6,239	78.0%	8,694
Cantonments	6,000	4,998	83.3%	3,133
Teshie Nungua	1,000	691	69.1%	32
Tema	3,000	2,998	99.9%	3,046
TOTAL	28,000	24,551	87.7%	20,969

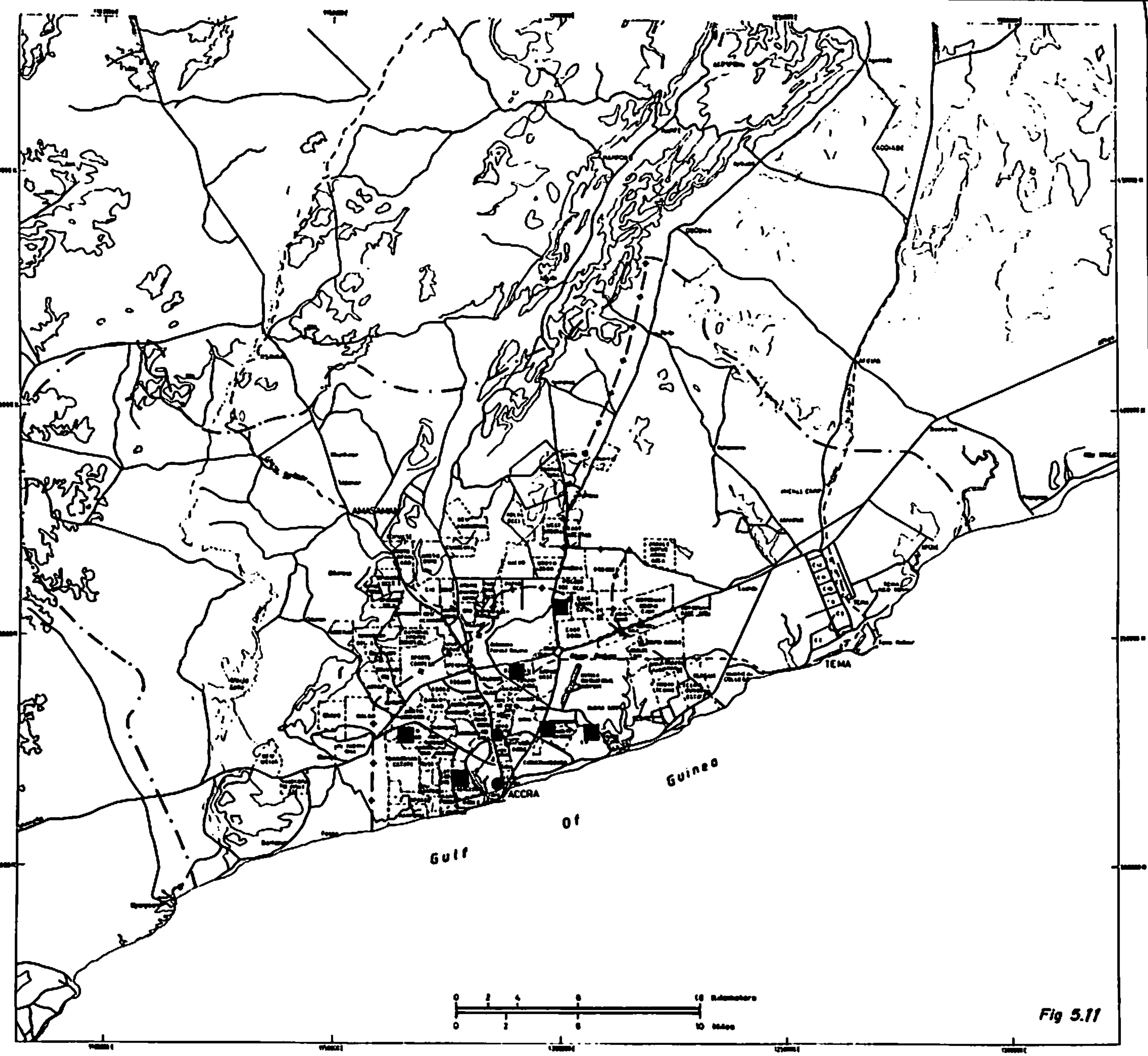
ACCRA
TEMA
Gulf Of Guinea
0 2 4 6 10 Kilometers
0 2 6 10 Miles

Fig 5.11

LEGEND

● Existing main telephone exchange

■ 33 KV main stations

—·— Metropolitan Boundary

—+— District Boundary

ACCRA PLANNING
AND
DEVELOPMENT PROGRAMME
TOWN & COUNTRY PLANNING DEPARTMENT
Ministry Of Local Government

Title
INFRASTRUCTURAL SERVICES
(telecommunication and electricity supply)

Source

Date 1991

Drafting

Plan No

Approved by

*Source: P & T Corporation (June 1991) * (1988 figures)*

Areas that have high unsatisfied demand but are not provided with facilities include:-

Dansoman
Awoshie
Ablenkpe
East Legon
Abeka/Apenkwa
Weija
Kwashieman
Dzorwulu
Adenta
Madina
MacCarthy Hill
Darkuman
Airport West
Atomic Energy
Odorkor
Achimota
North Dzorwulu
Sakumono

(iv) Projected Demand

The projected demand for telephone and telex services in GAMA is given on table 5.8. 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. New exchanges are programmed to meet demand in Madina (3,000 dels), Achimota (4,000 dels), Dansoman (5,000 dels) and Tema including surrounding areas of Prampram, Kpone, Ashaiman and Michel Camp (11,000 dels).

Table 5.8 Projected Demand for Telephone and Telex Services

Demand	1991	1996	2001	2006	2011
Telephone Lines	60,747	79,864	105,989	139,931	185,000
Telex Lines	1,562	1,799	2,032	2,617	3,500

Source: P & T Corporation (.1991)

(d) Issues Affecting Provision of Telecommunication Services

The key factor that has retarded the expansion of telecommunication services within the country and within the Accra Metropolitan Area in particular has been the lack of foreign capital. Other issues and problems which imposed a constraint upon the implementation of projects even when funding has been secured are:

(i) Planning

There are two issues of planning concern; demand forecasting and design standards for the provision of services.

Demand Forecasting

Basic, reliable data for planning and forecasting is very difficult to obtain. Within the metropolitan area it is not too difficult to distinguish between business and residential uses but for business areas with potentially high telephone density and utilization, there is no clear indication as to what type of development will occur within the planning periods to facilitate meaningful demand forecasts. In residential areas, forecasting demand is complicated by unreliable information regarding: detailed population figures by small areas; data on incomes and expenditures of various unit blocks; types of buildings existing and planned, and status of future owners of land to be developed.

Design of Civil Works and Pattern of Local Distribution Networks

It is difficult and unwise to make assumptions about the location of trenches and ducts of other agency services information is hard to come by or is not existent. Savings can be made and costly mistakes be avoided if all necessary information regarding medium and long term plans of other developing agencies were made

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available. Such plans should indicate accurately the location of existing plant and service ducts of agency services.

(ii) Coordination

Coordination between the Corporation and other development agencies is not good. The Town and Country Planning Department does not have reliable maps and plans showing layouts - especially of informally developed areas. Electricity Corporation of Ghana does not have adequate detailed information on existing plant locations. This poses a danger to linesmen during construction works and has already resulted in accidental deaths. The lack of long term road plans and the failure to secure and define road corridors very often results in agreed cable and duct routes being shifted at huge costs and inconvenience. Sometimes road projects are undertaken without due regard for existing plant - damage beyond reasonable repair results in complete replacement of joint-boxes, ducts and lengths of expensive cables.

The Ghana Water and Sewerage Corporation in the course of repair works, often puncture or completely damage underground ducts and cables. Very often unauthorized connections to consumers premises damages underground cables. The faults created can either be difficult to locate and repair or be expensive because the damage caused could be extensive when cables and duct routes become flooded with water.

(e) Material Supplies

About 80% of all materials used for providing telephone services have to be imported, properly stored and strictly controlled. The delivery period of materials and supplies usually exceed six-months but there are always inadequate stock of spare-parts and materials. The prevailing shortage of cash within the Corporation requires that a much more efficient supply usage cost model be adopted by the Corporation. Improved planning would also improve the effectiveness of procurement and disbursement.

(f) Quality of Service

Failure to complete the expansion of and modernization of projects on time and loss of skilled manpower have made the quality of service unsatisfactory. Lack of spares for power supplies, vehicles for operation and maintenance work, and faulty overhead trunk transmission routes have all affected the quality of transmission.

5.2.7 Postal Services

(a) Introduction

Postal services are the responsibility of the Post and Telecommunication Corporation. The Corporation operates under two divisions Postal and Telecommunications. These divisions are scheduled for separation into two corporations in 1992. The Post Office is headed by a Deputy Director-General (Postal Services). The Deputy Director General (Postal Services) immediate successor is the Director of Postal Services who also has under him a Deputy Director of Postal Services. There are three functional units of Planning, Operations and International Bureau which are headed by Chief Controllers of Posts. The Post office also operates a parcels and express mail service (EMS). The following summarises existing postal services and facilities, together with some of the issues affecting current and future postal services.

(b) History

The first postal services in Ghana started in the Gold Coast in 1843. This was confined to mail exchanges between the Home Office (London) and the Colonial office and Gold Coast Government. A national postal services incorporate internal and external services was established between 1854 and 1860. The first Gold Coast Postage Stamps in three denominations (1d, 4d, 6d) were issued in 1875. In 1879, the Gold Coast was admitted to the membership of the universal Postal Union. A Postal Training School was established in Accra in 1912 to provide training in all aspects of postal duties including Morse and teleprinter operation.

(c) Exiting Services.

The Postal Services Division provides the following services. Private Letter Boxes, Parcel Mails, Overseas Mails, Airmail Services, Money Order Service, Postal Order Service, Philatelic Service, Express Mail Service and the Expedited Mail Service (EMS) Registered Letter Service, Braille Service and Poste Restarte Service. 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
Expedited Mail Service (EMS)-100% House to House Delivery

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

Table 5.9 Letter Boxes in Greater Accra Metropolitan Area

1. Abossey Okai	100
2. Accra New Town	700
3. Accra North	8380
4. Achimota	400
5. Kotoka Airport	1550
6. Ashaiman	500
7. Darkuman	200
8. Dansoman Estate	1600
9. G.P.O. Accra	6950
10. Jamestown	150
11. Kaneshie	700
12. Korle-Bu	250
13. Labadi	500
14. Madina	650
15. Mamprobi	2150
16. Ministry B.O.	490
17. Nima	350
18. Nungua	200
19. Osu	2000
20. Larterbiokoshie (Agency)	50
21. Sports Stadium	200
22. Tema	1662
23. Tema Community 2	600
24. Tema Community 7	650
25. Tema Newtown(Container)	200
26. Teshie	450
27. Trade Fair	200
28. T.U.C.	150
29. Teshie Nungua Estate	1300
30. Legon University	400

31. Mallam	-	200
32. Cantonment	-	1250
33. Abeka	-	300
34. Alajo	-	200
35. 31st December Market	-	200

(d) Demand for Services

The estimated backlog of application for post office boxes is over 15,000. The demand is high in most areas - especially the CBD. Other areas where postal services are poor are Dzorwulu, Dome, Sports complex and East Legon. Currently the number of boxes per head of population is 45. If demand is to be satisfied this ratio will need to reduce to 11. By the year 2000 an additional 40,000 boxes will be required in the metropolitan area. A further 50,000 will be required between 2000 and 2010.

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. EMS commenced operations in April 1990 providing both local and international courier service in conjunction with other members of the U.P.U. The service dispatched 13,636 foreign items and 63,425 local items during the 10 months of operation last year. In each field of service, steady and rapid growth has been achieved. Traffic in the Ordinary Mail services have increased by over 10% in recent years.

(e) Issues affecting Postal Services

(i) House to House Delivery Service

The Postal Service encounters a number of problems with the expedited and express mail house to house delivery service. These include: difficulty in finding an address because of poor planning and layout of an area; insufficient residential address by customers; 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; very 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) Security of Mail Services

Pilfering of mail - especially for money is a problem within postal service the world over. 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, paper or envelopes and packages being partly transparent and the small denomination bank notes which make thick envelopes carrying money conspicuous. The Post Office is trying to improve security, but this is not easy when the means of conveying correspondence and money are very obvious. Security personnel have been employed at all post offices and closed circuit television installed in Accra and Kumasi.

(iii) Collection, Delivery and Sorting Service

All mail in GAMA is sorted at the Accra Central or North Accra Post offices. International inward mail is sorted at Mamprobi. The collection and sorting system is severely hampered by the poor writing of addresses, incorrect positioning of stamps which requires hand franking and a system for more orderly sorting of mail at local post offices. Some parts of Accra still have post box network with regular collection. This was convenient for after hours posting where there was not a nearby post office. The emphasis of a house to house delivery system cannot be justified because of problems outlined in (i) above.

(iv) 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. Equipments at many post offices are old and the standard of training, whilst improving, is insufficient to meet the demands of a modern postal service because the Postal Division has not got its own school.

5.3 ENERGY

The energy resources base of Ghana consists of biomas (wood fuel), electricity, hydrocarbons (petroleum), thermal power and solar power. The household sector is the largest energy consumer in the country mostly in the form of wood fuels and charcoal for cooking. Very small amounts of electricity, kerosene and LPG are also used for cooking.

5.3.1 Hydropower

Electricity accounts for 7% of Ghana's average annual energy production. Almost all of the country's electricity is produced from two hydro dams at Akosombo and Kpong which together have a combined installed capacity of 1160 MWA. More than 50% of Ghana's hydropower potential still remains untapped. The principal consumers of hydro-electric power are Volta Aluminium Company (VALCO), the Electricity Corporation of Ghana (ECG) and the various mining companies. In 1988, VALCO consumed 62% of the total domestic electricity, 31% went to residential, commercial and government sectors and the industrial sector consumed the remaining 7%. ECG buys bulk power from VRA to distribute to industrial and domestic consumers. The Volta River Authority has since 1972 exported electricity to Togo, Benin and Cote d'Ivoire. There are arrangements for exporting electricity to Burkina-Faso.

GAMA consumes in all about 10% of hydro power from VRA. As discussed in section 5.2 there has been a considerable increase in electrical energy consumption in GAMA but losses in the system are still high. There is considerable potential to increase the use of electricity for domestic purposes in the metropolitan area. Compared to fossil and biomas forms of energy it is cheap, clean, continuous and environmentally less damaging. While it is desirable to shift to this more efficient energy source for domestic and industry purposes, substantial investment is required in the distribution system to make it efficient.

5.3.2 Petroleum and Gas

Petroleum accounts for less than 5% of energy consumption in Ghana. Ghana imports all its petroleum requirements for use by transport, agricultural, manufacturing and construction activities. Kerosene is used widely for lighting especially in the rural areas. Transportation accounted for 53% of petroleum products in 1988. Industry consumed 16%, agriculture including fishing took 7.5% while residential, commercial and government sectors consumed 23.5%. In 1989 total cost of petroleum products was $200 million as against total foreign exchange earnings of $815.8 million. Since the 1980s when the production of small quantities of crude oil stopped from the well at Saltpond, the country has depended on imports of petroleum. There are substantial seismic and exploration activities taking place along the south western coast and offshore but they are yet to discover a local source of hydrocarbon.

It is estimated that GAMA accounts for 45% of all the petroleum products consumed in the country. GAMA consumes the majority of petroleum production in the industry, fishing, transport, aviation sectors. The metropolitan area contains more than 50% of the country's motor transport and is estimated to consume about 40% of transport energy production - equivalent to about $45m in imports in 1989. However, the current transportation system with the dependence on small passenger carrying units, poor roads, long delay times in the central area and generally poor condition of the vehicle population adds significantly to the petroleum energy bill for the metropolitan area. The introduction of more efficient modes of transport and improvements to the road and rail network in GAMA would reduce petroleum consumption in the transport sector.

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 (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 for charcoal and firewood.

A national LPG programme was launched in 1990 to promote LPG as the main cooking fuel in urban households which are predominantly charcoal users, in public institutions like the army, schools, hospitals which do mass catering and in the informal commercial sector, like chop bar operators, kenkey makers, etc. In GAMA a 5 kg capacity gas cooker has been introduced as a substitute for the traditional charcoal pot. As part of the LPG promotion programme, it is proposed to manufacture locally LPG cylinders and appliances which are inexpensive and suitably adapted to Ghanaian conditions and habits. The National Energy Board (NEB) is also investigating the technical feasibility of producing locally multi-fuel stoves which can use both LPG and charcoal and are affordable to the lower income groups.

5.3.3 Firewood and Charcoal

Firewood and charcoal together provide 80% of all the energy used in Ghana. The over-dependence on these sources of fuel especially for cooking, throughout the country has meant the deforestation of the country's forests and the desertification of the northern parts of Ghana. Information on the percentage of population in GAMA using charcoal and fire wood for domestic cooking purpose is not available. Low income areas, however, are the heaviest consumers of charcoal. Amongst the middle and upper income gas and electricity are more commonly used. Kerosene is more commonly used by the lower to middle income groups.

In addition to these programmes of intensifying the use of LPG, the National Energy Board has initiated a number of projects aimed at conserving forest resources through improved methods of charcoal and fire wood production. The traditional earth kiln method of charcoal production has been subjected to improvements to demonstrate their efficiency in charcoal production. Results indicated that minor modifications can improve efficiency in terms of charcoal produced per unit of wood. More energy efficient cook-stoves have also been introduced to reduce the expensive cost of charcoal and firewood. NEB estimated unit costs of energy are Charcoal and fire wood 5.5 cedis per unit of delivered energy as against 3.2 cedis for electricity, 3.7 cedis for kerosene and 3.5 cedis for LPG.

5.3.4 Solar and Wind Energy

Comparatively little use is made of wind and solar energy in Ghana. In order to exploit the abundant solar and wind energy resources in the country to pump irrigation water, dry crops, improve communications, education and health facilities especially in the rural areas, the NEB has embarked on a programme to assess the resource base, monitor the performance of existing solar institutions and thereby identify the right type of technologies which could be selected for the rural areas. The NEB, is also monitoring and evaluating a number of solar powered systems across the country. These include communication equipment installed by the Cocoa Marketing Board, Ghana Railway Corporation and the Post and Telecommunications Corporation and 51 vaccine storage refrigerators for the Ministry of Health. The aim is to assess the performance of these solar systems in terms of design and siting in the three climatic zones of the country.

The Panbros Saltworks is the only industry which makes substantial use of solar energy in the metropolitan area. Solar energy is used extensively for the drying of fish, some agriculture products, laundering and small scale home enterprise activities such as cloth dyeing, pottery, etc. GAMA has a very favourable climate to utilize solar energy for domestic and industrial water heating, commercial drying of agriculture and seafood products, telecommunications in rural areas. The potential for the use of wind energy in GAMA is very limited in the urban area. Wind energy has the potential to be used to pump water from wells in rural areas.

5.3.5 Tidal Energy

The tidal range in GAMA is not sufficient to be harvested for the production of electrical or mechanical energy. However, tidal energy has the potential to be used effectively for the cleaning of important water way systems. The Korle and Sakumo II lagoons are very heavily polluted. Opening the entrances to tidal flushing will significantly improve the water quality in these lagoons and save on the energy cost of clearing these areas by more mechanical means.

5.3.6 Energy Conservation

The GAMA is one of the heaviest consumers of energy in the country. There is, however, considerable wastage of energy and use of environmentally undesirable energy products - such as charcoal and wood - which should be discouraged in future. A shift is required in the pattern of energy consumption in the domestic and transportation sectors. This will take some time to achieve, as there are significant costs involved in introducing equipment for a switch to more efficient energy use in domestic households. Steps must also be taken to improve the efficiency of energy consumption in the transport sector - especially higher performance in terms of fuel consumption. Fuel consumption in this sector is expected to grow rapidly as more and more people gain access to private cars in the metropolitan area. Both long and short- term measures will be needed to conserve energy in this sector.

Chapter 6

SOCIAL SERVICES

6.1 INTRODUCTION

Social Services such as education, health and social welfare, and emergency services such as public and fire safety are essentially local services which ought to be provided by local governments. Variations in culture, language, social life, economy, transportation and communication facilities, etc. make local authorities' control over the development and delivery of these services necessary. As a result, there cannot be a uniform system of administration, control, pricing of public services, manpower utilization, budgeting, location of facilities, space utilization, etc. Local authorities need to be given the opportunity to plan, manage, and fund local services. This does not, however, preclude the role of the central government in the provision and supervision of social services. It has responsibilities for national policies for education (secondary and higher education, teacher training, etc.), health (prevention and control), the protection of constitutional rights, and national security and defence.

6.2 EDUCATION AND MANPOWER

6.2.1 Organization and Administration

The delivery of educational services is the responsibility of the Ministry of Education (MOE). It issues policies, guidelines, strategies, and enrolment targets. The actual implementation is the responsibility of Ghana Education Service (GES), under the Ministry of Education. GES plans, monitors, evaluates, and manages educational activities, trains and hires teachers, designs and prepares curricula, and provides all the necessary materials and equipment, and supervises private schools. GES has regional and district offices to supervise, coordinate and follow the day to day operations of the delivery of educational services. GES, which has district offices in Accra, Tema, and Ga is under the Greater Accra Regional Educational Office (GAREO) which is located in Accra. MOE is on the final stage of implementation of an educational reform programme that has transformed the structure, philosophy and content of education in Ghana. It has also a significant impact on enrolment rates and future supply of manpower in GAMA.

6.2.2 Educational Reform

(a) Background

In the 30 years after independence much has changed in the Ghanaian educational system: enrolment rates and the number of schools, colleges, and teachers have increased. The curriculum has however, not changed much in its academic orientation and structure, which with time has become increasingly irrelevant to Ghana's political and economic development concerns.

Until the mid-1970s, Ghana had one of the most developed and effective educational systems in West Africa. However, adverse effects of economic policies of the 1960's and the recession of the late 1970's and early 1980's, have led to a serious decline in the quality of education as well as in school enrolment at all levels. Government resources were not available to construct, complete, or maintain educational facilities. Owing to foreign exchange shortages, purchases of text books, materials, and equipment were not possible. Trained teachers left the country en masse, thereby lowering the ratio of trained and untrained teachers.

In 1983, in response to these problems the Government, assisted by the World Bank, initiated a sector-wide, multi year programme (1987-1993) of educational reform as an integral part of its national plan for economic recovery and sustained growth. The thrust of the education reform programme was on basic and second levels of education.

(b) Objectives of the Educational Reform

In 1983 the government initiated and started implementation in 1987, a reform programme aimed at:

(i) Reducing the length of pre-university education. Prior to 1987, pre-university education in Ghana lasted 17 years. This was to be reduced to 12 years, consisting of nine years of basic education (6 years of primary plus 3 years of junior secondary school, JSS), and three years of senior secondary school, SSS.

(ii) Developing the teaching/learning process through a new curriculum, increasing the number and quality of teachers, providing text books and educational materials, de-emphasizing theory, thereby making learning activities more relevant to the local environment.

(iii) Reducing Government recurrent cost burden by decreasing and/or eliminating boarding students, freezing the recruitment of non-teaching staff, increasing fees for food and other subsistence, introducing text book users' fees at the secondary level and a loan scheme at university level to help students pay for food, books, transportation, and lodging.

(iv) Introducing effective planning: A number of important steps have been taken to improve planning, management, budgeting, monitoring, and evaluation.

(v) providing compulsory, fee free universal basic education by the year 2000.

(c) Basic Education Policy

The PNDC in 1987 modified and re-introduced the Education Act of 1961, which provided for free compulsory primary and middle school education for all children of school going age, making educational facilities at all levels available to the greatest extent possible and acknowledging the paramount responsibility of the state for the provision of such services. Every Ghanaian child, by the amended law, would be provided with nine years of fee free compulsory basic education and exposure to a wide variety of areas and skills to build in him/her an attitude that will help him/her to cope creatively with the problems of his/her life and the country.

The policy involves concentrating an increasing proportion of available educational resources in the nine years of basic education, considered as the right of all Ghanaians. The basic education aims at providing children with literacy skills in their own languages, a second Ghanaian language and English; also with modern farming skills, familiarity in using tools, a manual dexterity with practical mathematical skills, and positive attitudes to hard work for national development. By moving away from the past purely academic system of education, it was expected that the majority of the school leavers from JSS would either become productive modern farmers, skilled workers or enter an appropriate senior secondary level institution starting September, 1990.

(d) The Implications of Universal Basic Education Policy (UBE)

The UBE objective can be achieved only if the government will provide educational facilities at convenient distances in all communities throughout the country. In addition to full provision of educational facilities, every effort has to be made to enroll all school going age population and keep them in school until they complete the final year of junior secondary school. In other words, UBE implies full provision of educational facilities, full enrolment of all school going age population, and full retention of the enrolled pupils for nine years.

There are three components to the implementation of the policy of UBE: enrolment at P-1, Primary, and Junior Secondary levels.

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6.2.3 School Enrolment in GAMA

(a) Pre-School

There were 87,101 children, 49.4% of which were girls, enrolled in 579 pre-schools (74 of these were public) in 1989. These figures rose to 91,265 children with 49.6% of them girls and 729 pre-schools in 1991. The number of public schools had reached 79. Pre-schools are essentially privately owned but these are regulated by GAREO. The total number of teachers in 1989 and 1991 were 1749 and 1792 respectively. This meant averages of 50 and 51 children per teacher in 1989 and 1991 respectively. There were also 920 and 1021 attendants in the respective years. This lowered the children - adult ratio (ie. teachers and attendants) to about 33 (1989) and 32 (1991).

(b) Primary 1 (P-1)

The enrolment level and the availability of space at P-1 level is crucial to the success of the UBE policy. In 1990, there were 25,013 pupils enrolled at P-1 level, which is 46.79 percent of the school going age (Table 6.1). In order to have full enrolment (98 %) by the year 2000, GAMA should provide 55,874 pupil/places which is an average annual enrolment growth rate of 5.12 percent. This is very high compared with other regions or the nation as a whole, where in 1990, 73.56 percent of the 6 year old population was in Primary 1, which means that the average annual growth will be only 2.44 percent till the year 2000.

(c) Primary School (P1-P6)

The actual enrolment in 1990 at the primary level was 151,255 (Table 6.1), although the number of school going age population of 6-11 year olds was 279,087 pupils, resulting in an apparent enrolment rate of 54.20 percent. In 1990, the enrolment rate of GAMA was much lower than GAR (57.14%), and much lower than Ghana (66.80%), or Eastern (81.56%), Central (84.17%), Volta (82.83%), Ashanti (76.60%), and Western (74.95%) Regions. In order to have full enrolment at P1 - P6 level by the year 2000, 244,241 new pupils/places must be provided, which is about 24,500 new places every year for 10 years. This would involve the construction of an average of 512 classrooms every year over a 10 year period based on the present average class size of 47.67 *(Table 6.2)*. Based on an average school size of 371.63 pupils, 66 new schools will have to be built every year until the year 2000 at a total cost of 21,348 million cedis. The total cost of learning, including teachers salaries, materials, books, etc. is estimated to be between 31,256 and 39,792 million cedis *(Table 6.3)*. The private sector ran 75 or 12.8% of the schools which accounted for 33,860 or 18.9% of the enrolment in GAMA in 1987/88.

(d) Junior Secondary School (JSS)

The junior secondary school is part of the basic education programme announced by the government which began to be implemented on September 29, 1987 with the introduction of JSS nationwide. At the JSS level, there were in 1990, 71,569 pupils enrolled, out of 129,467 in the school going age group of 12-14, resulting in an apparent enrolment of 55.30 percent *(Table 6.1)*. In the year 2000, there will be 129,879 pupils, with an apparent enrolment rate of 64.98 percent, i.e. an additional 5,830 new places will be needed every year till the end of the decade. It does not seem likely that full enrolment at the JSS level can be achieved until after 2010. Based on the average school size of 232.37 and an average class size of 31.21 *(Table 6.2)*, 25 schools will have to be built every year until the year 2000. The learning cost is estimated to be between 20,605 and 24,541 million cedis, while that of construction will be 7,785 million cedis.

(e) Senior Secondary Schools (SSS)

(i) Objective and Curriculum

The first cohort of JSS graduates began senior secondary education in 1990/1991 academic year. The new curriculum is designed to serve two purposes: (1) to provide a solid educational foundation for post secondary education and training, and; (2) to prepare students for a range of occupations. The new structure will entail a common core intended to meet the minimum educational needs of all students, and consists of seven subjects: English, a Ghanaian language, science, mathematics, agricultural and environmental science, life skills, and physical education. In addition, five broad programmes of specialization will be offered that are meant to cater for students with differing talents and interests: agriculture, technical, vocational, business, and general arts and sciences.

(ii) Enrolment

The transition rate between junior secondary and senior secondary school is assumed to increase from 30 percent in 1990 to 50 percent in 1995. The number of students is expected to grow by 23,102 between 1990 and 2000, an increase of about 2,310 a year. This will require 3 schools per annum at a cost of 4,200 million cedis, based on an average school size of 979.84 (Table 6.2).

(f) Costs

The overall cost to government of running the basic education and the senior secondary schools ranges from 88,544 to 103,524 million cedis, depending on which alternative has been selected (Table 6.3). They differ in certain cost differentials and assumptions. The total cost of learning of universal basic education is estimated at between 31,256 and 39,792 million cedis or between 35.30 and 38.44 percent of the total. The construction cost for the two levels is estimated at 33,333 million cedis, of which 29,133 million cedis or 64.05 percent will be for basic education. The high cost of senior secondary schools is due to the specialized nature of the training programmes such as commerce, agriculture, vocational and technical, arts, science, etc.

(g) Teacher Demand

Teachers engaged in school education form an important component of skilled manpower. In an effort to insure the quality of education, especially at the basic level, Government plans to consolidate the gains initiated during the past few years by implementing additional measures to raise the competence of teachers and enhance the capacity of the inspectorate to supervise these teachers. In addition, a scheme will be introduced to make schools more accountable for the performance of their students.

The total number of teachers employed in basic education as a whole was 6,728 in 1990, out of which 3,763 were in primary education (Table 6.2). Nearly 6,580 more teachers will be required for basic education by the year 2000, when the pupil/teacher ratio will be 46.00 and 27.60 for primary and junior secondary schools respectively. The cost of training is estimated at 1,382 million cedis. Compared with the national average, GAMA had less percentage of untrained teachers, both at the primary and junior secondary school levels. Out of the 1,192 SSS teachers, 28.94 percent were untrained. By the year 2000, there will be 1,124 teachers, assuming that the pupil/teacher ratio of 20.55, which is lower than the national ratio of 21.06, is maintained (Table 6.2).

In response to the shortage of qualified teachers, MOE has reformed and strengthened the teachers training programme. Since 1988, intake into the four year post-middle school course was stopped and all new intake into the teacher training colleges is now into a three-year course reserved for "O" level holders. The curriculum offered in the training colleges has also been revamped to reflect changes in the content and method of basic education teaching.

In 1990, there were 38 teacher training colleges in the country with a total enrolment of 15,723 students. The enrolment is expected to increase to 16,703 in 1991, 19,759 in 1992, and 21,004 in 1993. The only teacher training college in Accra has an enrolment of 776 students. GAMA's huge demand for basic education teachers will have to be met largely from the remaining 37 institutions.

TABLE 6.1 PROJECTION OF ENROLMENT AT PRIMARY AND JUNIOR SECONDARY LEVELS OF BASIC EDUCATION FROM 1990 TO 2000-GAMA

	INTAKE		PRIMARY LEVEL EDUCATION							JUNIOR SECONDARY LEVEL EDUCATION						APRNT. ENROL RATE JSS	POP 6-14	APRNT. ENROL RATE B.EDUC	NAT. APRNT. RATE B.EDUC.	SSS ENROL
YEAR	POP.OF 6 YEAR OLDS LOCD	% POP	P1	P2	P3	P4	P5	P6	TOTAL P1-P6	JSS 1	JSS 2	JSS 3	TOTAL JSS 1-3	GRAND TOTAL	POP 6-11					
1990	53,460	46.79	25,013	26,042	26,010	26,060	24,875	23,255	151,255	24,270	20,513	26,786	71,569	222,824	279,087	55.30	408,554	54.54	72.08	24,496
1991	56,052	76.04	42,622	24,513	25,521	25,490	25,539	24,378	168,063	22,789	23,785	20,102	66,676	234,739	292,617	49.12	428,359	54.80	73.17	28,681
1992	58,644	78.65	46,124	41,770	24,022	25,011	24,980	25,028	186,935	23,890	22,334	23,309	69,533	256,468	306,147	48.96	448,165	57.23	74.13	33,705
1993	61,235	81.14	49,686	45,202	40,934	23,542	24,511	24,480	208,355	24,528	23,412	21,887	69,827	278,182	321,146	47.56	467,971	59.44	74.89	34,728
1994	63,827	84.02	53,627	48,692	44,298	40,116	23,071	24,020	233,824	23,991	24,037	22,944	70,972	304,796	333,205	45.92	487,777	62.49	75.43	31,978
1995	66,419	87.06	57,824	52,555	47,718	43,411	39,314	22,610	263,432	23,540	23,511	23,556	70,607	334,039	346,735	43.90	507,582	65.81	76.32	32,128
1996	69,643	89.21	62,129	56,668	51,503	46,746	42,543	38,527	298,116	22,158	23,069	23,041	68,267	366,383	363,565	40.48	532,220	68.84	77.91	32,941
1997	72,866	91.14	66,410	60,886	55,534	50,473	45,828	41,692	320,832	37,756	21,715	22,607	82,073	402,905	380,395	46.51	556,858	72.35	79.56	33,915
1998	76,090	93.44	71,099	65,082	59,669	54,423	49,463	44,912	344,648	40,858	37,000	21,280	99,138	443,786	397,225	53.80	581,495	76.32	81.30	32,132
1999	79,314	95.52	75,761	69,677	67,780	68,475	53,335	48,475	373,503	44,014	40,041	36,261	102,316	493,819	414,056	62.64	606,133	81.47	83.06	39,414
2000	82,538	98.	80,887	74,246	68,284	62,505	57,306	52,268	395,496	47,505	43,134	39,240	129,879	525,375	430,886	64.98	630,770	83.29	84.28	47,598
INDEX	154	133	322	285	263	240	230	225	262	196	210	147	182	236	154	118	154	153	117	194

Source: Accra Planning and Development Programme

Table 6.2 GAMA School Statistics 1989/1990

	Primary					JSS					SSS	
	AC	GA	TEMA	AV/T	NAT.AVE/T	AC	GA	TEMA	AVP	NAT- AVE	AVE	NAT-AVE
No. of Schools	280	68	59	407	9,831	223	41	44	308	5,136	25	250
No.of Clrms. In Use	1,809	281	430	2,50	49,658	991	142	192	1,325	19,099	-	168,000
Total Enrolment	109,589	17,141	24,525	151,255	1,703,074	51,508	6,711	13,350	71,569	625,018	24,496	4,150
T. No. of Classes (Streams)	2,146	471	556	3,173	61,472	1,771	196	326	2,293	23,043	574	4,150
T. No. of Teachers	2,631	495	637	3,763	62,859	2,153	241	571	2,965	35,262	1,192	8,087
Av. No. of class/Schools	6.46	4.13	7.29	6.19	5.05	4.44	3.46	4.36	4.30	3.72	-	-
No. of class/classroom	1.19	1.68	1.29	1.26	1.24	1.79	1.38	1.70	1.73	1.21	-	-
Ave. size of class	51.07	36.39	44.11	47.67	27.70	29.08	34.24	40.95	31.21	27.12	42.68	40.48
Percentage of Girls	50.11	44.65	51.44	49.71	44.86	48.97	41.20	61.06	50.50	41.31	39.04	33.01
Ave. size of sch.	391.39	252.07	415.68	371.63	173.24	230.98	163.68	303.41	232.37	121.69	979.84	672.00
Ave. No. of teachers/class	1.23	1.05	1.15	1.19	1.02	1.22	1.23	1.75	1.26	1.50	2.08	1.95
No. of pupils/teacher	41.65	34.63	38.50	40.20	27.09	23.92	27.85	23.38	24.14	17.72	20.55	21.06
% of untrainedteachers	0.08	24.85	6.75	10.80	33.64	16.63	9.96	34.50	20.36	35.13	28.94	25.18

Source: Accra Planning and Development Programme 1991

(h) Technical Education

Technical education in GAMA is provided under two separate programmes: technical/vocational institutes and polytechnics. The technical institutes located in Accra and Tema are established to provide an alternative avenue for full-time courses for the post primary and junior secondary school leavers who opt for training in technical/vocational skills. By training at this level, the individual is equipped with the necessary theoretical and practical knowledge with which he/she can be self employed. These technical institutes run courses such as basic engineering, general building and motor mechanics, welding, carpentry and joinery, plumbing, catering and business studies which last 1 to 3 years. The Accra technical institute also runs courses on a part-time basis. The two institutes enrolled about 1750 students in 1990, of which only 3.29 percent were women.

There is one polytechnic in Accra, established to provide avenues for individuals who wish to advance their technical skills in their chosen field of specialization. It also provides courses for those who have completed their secondary school education with opportunity to further their education through technical/vocational education. More importantly, it is supposed to produce the necessary middle-level manpower requirements in the field of technical/vocational skills for both the private and the public sectors of the economy. It offers courses ranging from basic engineering to institute of chartered accountancy on both full-time and part- time bases, a total of 25 courses lasting between 1 and 4 years. It has an enrolment of nearly 3000 students, 673 or 29.30 percent were women. There are also 2 National Vocational Training Institutes (NVTI), 4 Integrated Community Centre for Employable Skills (ICCES), and about 50 private technical institutions which provide various low-level technical education.

6.2.4 Higher Education

Education is an essential element of national development goals. The particular contribution of tertiary education is the training and retraining of upper, middle-level, and high-level manpower to guide and manage economic and social development. Higher education also aims at conducting scientific and technological research and dissemination of knowledge and information that are necessary for national development.

The University of Ghana, Legon, the largest and the oldest of the three national universities, has an enrolment of nearly 4,000 students. Plans are under way to expand enrolment to 10,000 by the year 2000. The University of Ghana, like all other higher or tertiary institutions, faces a number of problems: fragmented and uncoordinated administration; high running costs due to the small size of enrolment; low utilisation of university resources, e.g. short teaching season and low facility utilisation; low enrolment in science and technology and; high public expenditure.

The University of Ghana has faculties for agriculture, arts, sciences, law, social sciences, administration, and medicine, and specialized programmes for adult education, African studies, medical research, population studies, and a school for performing arts, in which it awards various degrees, including Ph.Ds. It is situated in the nation's centre for industry, commerce, finance, politics, and administration. As the only higher institution in the most populous, ethnically diverse, and international urban centre of the country, the University has a unique role to play in the economic, social, and political development of GAMA.

6.2.5 Non-Formal Education

Although Accra has the highest literacy rate in the country, 63 percent (71% for men and 54% for women), there are an estimated 400,000 people who are still illiterate in GAMA, the majority (300,000) of whom are women. The lowest literacy rates are in the 9-14 (34%) and 55 plus (41%) age groups. There are plans to achieve a literacy rate of 90 percent within 5 to 7 years, and fully eradicate illiteracy in 10 years, that is, by the year 2000. It is estimated that it takes an average of 5,000 cedis to teach an illiterate person how to read and write. For GAMA this would involve an estimated cost of 2,000 million cedis.

Table 6.3 Projected Total Public Expenditure in GAMA by Levels/Types of Education (in millions of cedis)

Year	Primary		Junior Sec		Senior Sec		Total	
	S I	S II	S I	S II	S I	S II	S I	S II
1990	1,513	1,513	1,431	1,431	1,960	1,960	4,904	4,904
1991	1,765	1,697	1,400	1,360	2,409	2,868	5,574	5,925
1992	2,061	1,907	1,533	1,447	2,973	3,371	6,567	6,725
1993	2,412	2,147	1,617	1,482	3,216	3,473	7,245	7,102
1994	2,842	2,433	1,725	1,536	3,110	3,198	7,677	7,167
1995	3,362	2,769	1,802	1,559	3,280	3,213	8,444	7,541
1996	3,995	3,165	1,830	1,538	3,532	3,294	9,357	7,997
1997	4,514	3,440	2,310	1,886	3,818	3,392	10,642	8,718
1998	5,092	3,732	2,929	2,323	3,798	3,213	11,819	9,268
1999	5,794	4,085	3,733	2,876	4,892	3,941	14,419	10,902
2000	6,442	4,368	4,231	3,167	6,203	4,670	16,876	12,295
Total	39,792	31,256	24,541	20,605	39,191	36,683	103,52	88,544

ource: Accra Planning and Development Programme (ADPD) 1991

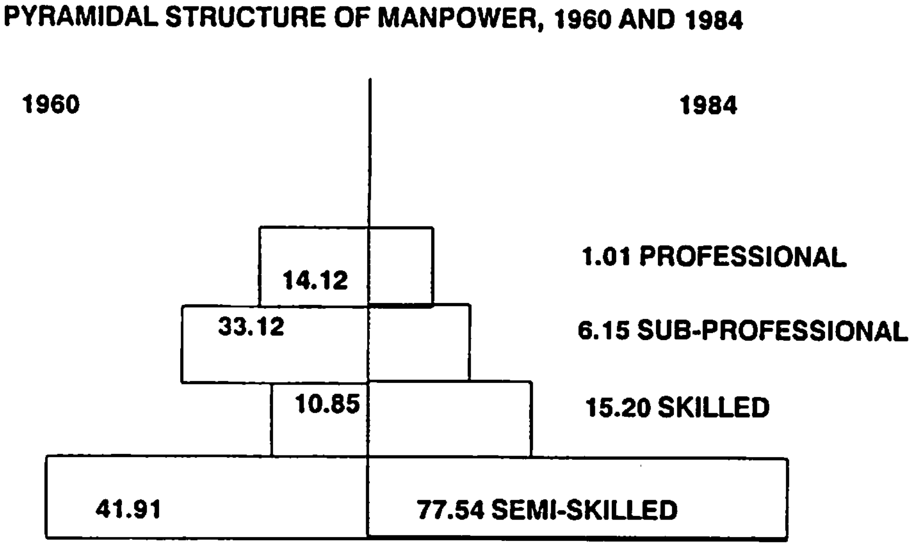
6.2.6 Manpower

(a) Changes in Stock in Manpower

1. National

There is no adequate census data on the manpower situation in the country. Despite the limitation of the data, a study by the MOE found that the structure of manpower has undergone substantial changes between 1960 and 1984. The manpower pyramid in 1984 was far more top slim and bottom heavy as compared to the 1960 situation *(see Figure 6.1).*

Figure 6.1 Pyramidal Manpower Structure - Ghana



Source: Ministry of Education (1991)

Professional manpower constituted 14.12 percent of the total manpower in 1960. It declined to a little more than one percent in 1984. This situation is expected to be reversed in the light of the present expansion of the economy which requires a high number of professionals. The female participation rate has increased in all of the major industrial groupings of the economy. Overall, it increased from 38.57 percent in 1960 to 51.37 percent in 1984.

The 1960 distribution shows a greater proportion of workers in the semi-skilled and sub-professional category while in 1984, the semi-skilled alone was made up of 78 percent. Thus, as the employment grew from 1960 to 1984, there was a structural shift of employment towards the less skilled. This may be due to the immigration of skilled manpower to neighbouring countries. It has been estimated that the share of professional and sub-professional manpower in Ghana in relation to the total employment will increase from a little less than 4 percent in 1984 to 6.2 percent in 1995.

2. GAMA

The total work force in GAMA will increase from 540,100 in 1984 to 1,281,270 in 1995 (Table 6.4). There will be some structural change in the distribution of employment by sectors. The share of agriculture which accounted for 11.42 percent of the total employment in 1984 will decline to 6.07 percent in 1995. The share of industry during this period is likely to register a sharp increase from 24.73 percent in 1984 to 36.93 percent in 1995, while the share of services will decline from 63.85 percent to 57.00 percent in 1995 (Table 6.4).

GAMA had also the highest percentage distribution of the national work force in professional, technical, administration and management, clerical, sales, service, and production. This distribution will remain unchanged, but with much reduced percentage distribution in all fields except service and production. It is estimated that about 60 percent of the total number of university educated manpower in 1984, totaling 25,219, worked in GAMA, 14.33 percent of the graduates were women. It is estimated that the number of university educated manpower will be over 80,000 by the year 2000. Overall, the participation of university educated women in the labour force has gone up from 10.43 percent in 1960 to 13.11 percent in 1984.

Table 6.4 Manpower Employment Projection - GAMA

Industry	1984	%	1990	%	1995	%
Agriculture	61,700	11.42	71,900	7.83	77,810	6.07
Manufacturing	103,580	19.18	220,530	24.01	392,3503	0.62
Utilities	8,390	1.55	17,360	1.89	22,910	1.79
Construction	20,110	3.72	35,490	3.86	54,710	4.27
Mining	1,490	0.28	2,330	0.25	3,220	0.25
Transport and Comm	36,730	6.80	56,400	6.14	78,180	6.10
Wholesale and Trade	171,200	31.70	313,590	34.14	404,800	31.58
Finance	15,290	2.83	20,610	2.24	26,620	2.08
Socia -l Personal Services	121,610	22.52	180,190	19.64	220,680	17.24
Total	540,100	100.00	918,400	100.00	1,281,270	100.00

Source: Accra Planning and Development Programme 1991.

In general, while the participation rate of professional, technical manpower among university graduates was higher (65.67%) in 1984, the rate for women fell from 85.84 percent in 1960 to 71.80 percent in 1984. There was a big drop, from 26.97 percent in 1960 to 15.16 percent in 1984, in the distribution of administrative and managerial jobs, caused mainly by the low male participation rate which fell from 28.87 percent in 1960 to 15.86 in 1984. Female participation rates were higher in 1984 in clerical, sales, services, agriculture, and production, mostly manufacturing, than they were in 1960.

(b) Projections of Selected Categories of Manpower

The MOE has made highly aggregated manpower projections which have limited value for manpower forecasting by subsectors and various branches of specializations. These projections, mostly on selected occupations, given on Table 6.5, show the additional demand by major professional and sub-professional categories until 1995. Among those that will be in high demand are lawyers, architect/planners, engineers, etc. In the sub-professional category are social workers, administrative and managerial workers, biological/agricultural and engineering technicians, etc.

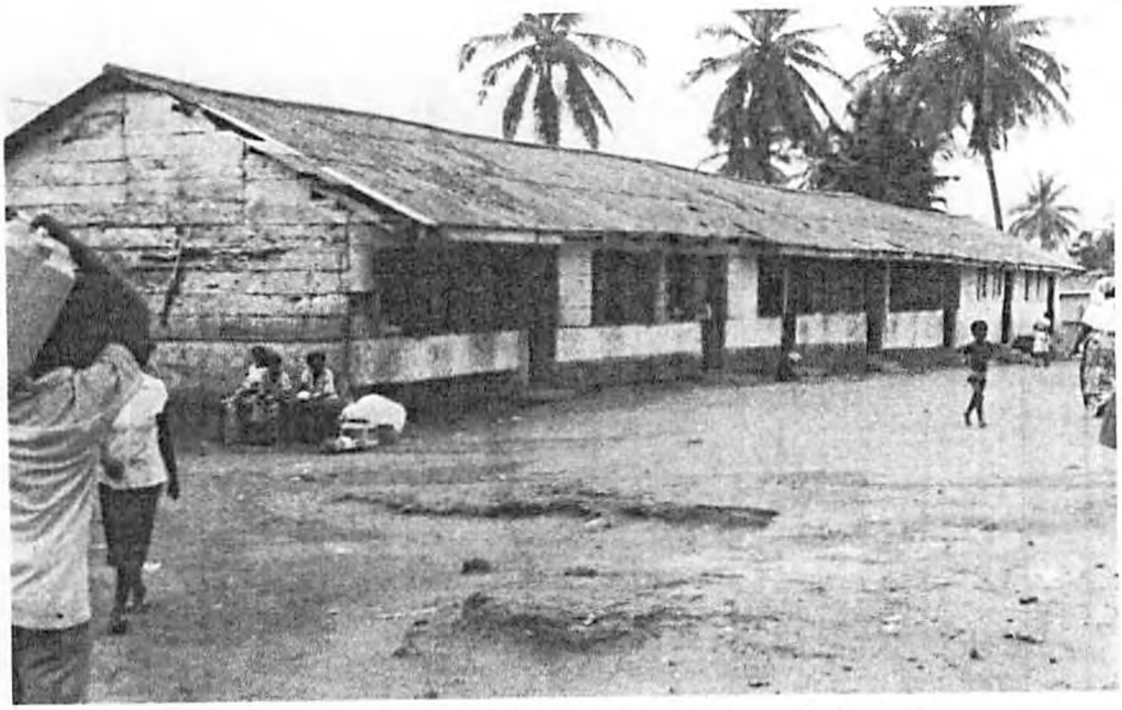
In GAMA, wholesale and trade shows the highest growth in terms of employment followed closely by manufacturing, although the percentage distribution of the wholesale and retail subsector has been decreasing since 1990. Manufacturing employment is increasing at a rate of over 34,400 jobs a year. Construction,

Table 6.5 Actual and Projected Employment by Selected Occupations, 1960, 1984 - 1995 OccupationActualProjections

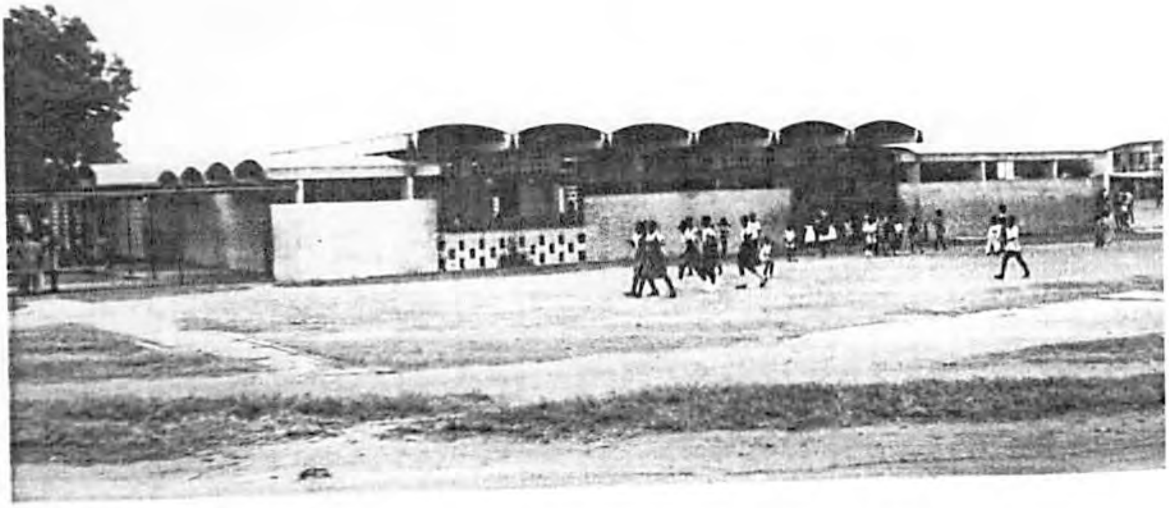
Table 6.5 Actual and Projected Employment by Selected Occupations, 1960, 1984 - 1995 OccupationActualProjections

	1960	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Engineers	546	1,228	1,444	1,554	1,730	1,917	2,107	2,326	2,563	2,814	3,118	3,442	3,797
Physical Sciences	38	229	269	289	322	357	392	433	477	524	580	640	706
Architects/Planners	232	1,429	1,681	1,809	2,013	2,230	2,451	2,706	2,982	3,274	3,628	4,005	4,418
Biological Sciences	198	907	1,067	1,148	1,278	1,416	1,556	1,718	1,893	2,079	2,304	2,544	2,806
Social Sciences	17	881	1,036	1,115	1,241	1,375	1,511	1,668	1,838	2,018	2,236	2,469	2,723
Maths/Stats	9	195	229	246	274	304	334	369	407	447	495	546	602
Legal	491	10,085	11,860	12,761	14,203	15,737	17,295	19,094	21,042	23,104	25,599	28,261	31,172
Admin./Managerial	4,029	16,902	19,877	21,388	23,805	26,376	28,987	32,002	35,266	38,722	42,904	47,366	52,245
Engineering Technicians	1,262	6,686	7,863	8,461	9,417	10,434	11,467	12,660	13,951	15,318	16,972	18,737	20,667
Medical Technicians	2,950	13,586	15,977	17,191	19,134	21,200	23,299	25,722	28,346	31,124	34,485	38,071	41,992
Bio/AgricTechnicians	385	14,641	17,218	18,527	20,621	22,848	25,110	27,721	30,549	33,543	37,166	41,031	45,257
Aeronautical/Marine Related	67	443	521	561	624	691	759	838	923	1,013	1,122	1,239	1,367
Architectural/Planning Tech	. 339	3,365	3,957	4,258	4,739	5,251	5,771	6,371	7,021	7,709	9,542	9,430	10,401
Social and Related Workers	12,900	122,306	143,832	154,763	172,251	190,854	209,749	231,563	255,182	280,190	310,450	342,737	378,039

Source : Social demand for Education and Manpower Requirements for Economic Development of Ghana, MOE, 1989 P.23



A TYPICAL SCHOOL BUILDING IN A LOW INCOME AREA



EXAMPLE OF A GOOD SCHOOL BUILDING IN TEMA

EDUCATION

transport and communication, and finance are also expected to do better in 1995. These industries employ skilled and semi-skilled labour, confirming the continuation of the structural change taking place in the economy.

6.2.7 Issues in Educational Services

(a) Low Enrolment

The enrolment at both the primary and JSS levels is very low compared with the national average and that of many regions of the country. This will affect the future manpower situation in GAMA. Measures must be taken to bring the level of enrolment at least to that of the national average.

(b) Finance

The private sector shares a small portion of the costs of education. The government is unlikely to cover the full costs of implementation of the universal basic education policy and other programmes of education at the secondary and tertiary levels. In light of this, the financing of education needs to be reconsidered, taking into account possible changes in policy, timetable for implementation, role of the private sector, and a system of cooperation between central and local governments in the delivery of educational services, especially basic education.

(c) Quality of Education

There are three issues concerning teachers:

First, although the average quality of teachers in GAMA measured by the percentage of untrained teachers in the system, is smaller than the national average, it is still considered high (10.80%) compared with other regions. Nearly 25 percent of teachers in Ga District are untrained. Second, a primary school teacher in GAMA handles 13 more pupils than the national average, and a JSS teacher has 7 more pupils to teach than their counter parts in other parts of Ghana. Third, there are variations within GAMA. There are also significant variations in the total and female percentage of repeaters. The percentage of repeaters in Accra (1.43%) is less than one-half of Ga (2.93%) and about one half of Tema (2.74%). Similar disparities are observed among female repeaters.

(d) Use of Physical Facilities

A number of problems constrain the utilization of physical facilities. They include:

1. Limited School Size

The size of the schools are too small. While the average primary school has 6.19 classes, which means that some of the schools are incomplete, the average school in Ga has only 4.13. The situation is even worse at the JSS level with an average of 4.30 classes per school. The size of the schools can be increased in order to save construction costs without affecting the quality of education.

2. Limited Number of Classes per Classroom

The average number of classes per classroom is only 1.26, suggesting low utilization in light of the fact that a system of double shift, a ratio of 2.0, could have been introduced to increase student enrolment. Similar situations are observed at the JSS level where the average utilization ratio is 1.73.

3. Varied Class Size

The average class size in GAMA is 47.67, while the national average is 27.70. GAMA's average has exceeded the national average of 46.00, planned for the year 2000. The Accra City District has an average of 51.07 pupils per class, whereas that of Ga District is only 36.39 pupils per class. On the other hand, the classes at the JSS are very small, 29.08 and 34.24 for Accra and Ga respectively, while that of Tema Municipal area with 40.95 exceeds GAMA's average of 31.21 pupils per class.

(e) Distribution of Materials and Equipment

There are three issues facing the distribution of materials and equipment: The first is shortages caused by inadequate budgetary resources to provide the necessary materials and equipment. The second arises as a result of inadequate and/or lack of planning in the supply and distribution of text books and related materials. The third problem concerns disparities in the distribution of resources such as equipment, libraries, sports and other facilities among SSS institutions.

(f) Inadequate Planning and Management Information

The GAREO which coordinates and supervises the delivery of educational services in GAMA operates under a serious deficiency of planning and management information such as school enrolment, growth rates, demand for teachers and their distribution; school locations, sizes, class utilization; demographic analysis, etc. without which no meaningful long range plans can be prepared. The information available at the these levels of school administration (central, regional, and district) are inaccurate and conflicting, arising from a lack of the uniform system of data collection, analysis and evaluation.

(g) Location of Schools

The distribution or location of school facilities has been made without demographic analyses or projections. This has resulted in students commuting long distances to school, especially at SSS level. Students come to Accra from as far away as Tema (25 km), often missing the first hours of instruction due to transportation problems. Since the transportation costs are beyond the ability of their parents, some students drop out of school entirely.

(h) Centralized System of Management

The regional and district offices execute plans and policies laid down by MOE and GES without being consulted about problems of implementation and management. Nor do they participate in the preparation of long range plans and programmes, evaluation of projects, or management of educational programmes affecting the regions and the districts. There is no established system for exchange of information and experiences.

(i) Weak Management Structure

The majority of the senior and junior officers come from the teaching profession without any training in either educational planning, management, or finance. The regional and district offices are also poorly staffed and equipped in the use and application of modern management techniques and information systems which could assist in long range planning and development of the school system. They are not given adequate financial resources nor do they have the administrative freedom to manage the delivery of education in their respective areas of responsibilities.

(j) Community Participation

There is very little evidence of parents or community involvement in the management of schools and their activities. Two problems contribute to this: no effective Parent Teacher Association (PTA) organization exists; and the reluctance of communities to be involved in the planning and management of school activities. A system must be developed that will involve parents in the management of their children's education.

6.3 HEALTH

6.3.1 Organization and Administration of Health Services

The delivery of health services are coordinated by the Greater Accra Regional Health Administration, under the Ministry of Health which sets all policies regarding the training of health personnel, the quality and standard of medical services, location of health facilities, personnel administration, selection and purchase of drugs, supplies and equipment, etc. The Regional Health Administration (RHA), assisted by the District Health Offices (DHO), supervises and coordinates the delivery of health services. Owing to shortages of personnel and office space, the district offices are not fully functional.

6.3.2 GAMA's Population

In 1990, GAMA had a population of 1.7 million. It is estimated to reach 3 million in 2005, with almost 14 percent of Ghana's population, which is then expected to be 23.8 million. Accra has a population of 1.2 million or 73 percent of GAMA's population with an average density of 5,290 persons per square kilometre. In Accra, the density ranged from 44,245 in Accra New Town to 1,722 persons per square kilometre in South Industrial area in 1984. The average density for GAMA was 1,322, expected to increase to 2,512 per square kilometre by 2005. It is the most urbanized region of the country, with over 90 percent of the population living in urban areas. While population is a great source of strength and economic vitality, it can also present a constraint in the delivery of health services, especially where densities are high. Certain diseases are difficult to control in high density conditions, often accompanied in developing countries by unsanitary environmental and health conditions.

6.3.3 Health Policy and Strategy

The major health policy of Ghana is to maximize the total health life of the Ghanaian people. The initial objective of the policy was to achieve basic and primary health care for 80 percent of the population of Ghana by 1990, and to attack effectively the disease problems that constituted 80 percent of the preventable deaths and disabilities afflicting Ghanaians by 1990. But this has not been achieved.

The primary means of implementing the health policy will be the Primary Health Care (PHC) system. The overall philosophy of PHC is to reduce the rate of mortality and morbidity due to conditions for which prevention, easy treatment, and control exist. Prominent among these causes are communicable diseases, nutritional deficiencies, and manageable complications of pregnancy. PHC coverage in Ghana is difficult to estimate, it ranges between 20 and 50 percent.

In GAMA the emphasis in the Primary Health Care Programme has been on child survival and development programme, in-service training for different categories of health personnel, operational research and training for traditional birth attendants (TBAs), increases in coverage in medical care, improvement in service delivery for sexually transmitted diseases, introduction of effective communication methods in health education programmes, including introduction of a Regional News Letter; improvement of mobility in health institutions, and effective monitoring and increase in revenue in the area of cost recovery. Owing to the large numbers of trained health personnel, Accra does not encourage the use of TBAs.

6.3.4 Health Conditions

(a) Major Health Problems

The major health problems of GAMA are essentially communicable diseases, diseases due to poor environmental sanitation, ignorance, and poverty. Malaria has been the number one disease in GAMA, claiming about 261,846 or 41.02 percent of all the reported cases in 1990 in Accra, 34.04 per cent in Tema, and 42.33 percent in Ga. There has been a decrease in the number of cases reported in Accra and Tema while Ga has shown an increase. The top 10 diseases are malaria, upper respiratory tract infections, diarrhoeal diseases, skin diseases, accidents, hypertension, pregnancy, intestinal worms, anaemia, and acute eye infection. Since the detection of cholera in the country in 1970, the disease has become endemic with seasonal outbreaks that coincide with the onset of the rainy seasons. The figures for 1990 were 1,671 cases and 42 deaths, most of the cases were in Accra.

Nationally, among the 15 leading diseases treated at outpatient visits, malaria ranked highest with an average incidence of 73 per 1000 population. In contrast, the next two most frequent diagnoses were for upper respiratory infections and diarrhoeal diseases at 17.2 and 16.6 per 1000 population, respectively. Obviously, malaria is key to any consideration of health status improvements, nationally and in GAMA.

(b) Infant Health Status

In GAMA the major causes of death in infancy are low birth weight and other diseases of the newborn such as infections, malnutrition, and anaemia. Lung disorders contribute significantly to infant deaths as do infant pneumonia, birth injury, congenital malformations and infections. The plan was to reduce infant mortality rates (IMR) from 120 to 60/1000 live births by 1990 in Ghana. However, in GAMA, IMR was 40/1000 in 1989.

Nationally, three-fourths of children's deaths in the one-to four age group are caused by malaria, bronchopneumonia, diarrhoeal disease, measles, meningitis, septicaemia, and typhoid. Only about 20 percent of Ghanaian children under two years of age have received fully immunized coverage. Accra has one of the highest coverages.

(c) Principal Causes of Deaths

The 5 principal causes of deaths in 1989 in GAMA, ranked from most to least frequent, are hypertension (37%), N.Y.D. (ie. Not yet Diagnosed) (30%), accidents (14%) respiratory infection (12%) malaria (8%). Nationally, they include pneumonia, ill-defined conditions, foetal disorders, measles, and heart failure. Malaria is ranked ninth. Jaundice, meningitis, hernia, diarrhoeal diseases, and anaemia are also responsible for a large number of deaths in GAMA.

(d) Maternal Health

Maternal mortality rate (MMR) in Ghana in 1987 was 10-15 per 1000. In GAMA, it was 6/1000. Ghana's population is growing at a rate of 3.2 percent. The total fertility rate is high (6.4 per woman) and 22 percent of the women are in the reproductive age group. Contraceptive prevalence was estimated at only 11-13 percent in 1987.

6.3.5 Health Services

(a) General

The government is the largest health care provider. It is engaged in curative, preventive, and promotive health care. It operates in both the rural and urban areas of GAMA. A variety of medical programmes such as dental,

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maternal and child health/family planning services, epidemiology, nutrition, environmental health, health education, etc. are provided in GAMA under the supervision of the Regional Health Administration.

(b) Maternal and Child Health/Family Planning Services (MCH/FP)

The national policy of MCH/FP states that "maternal and child health services will be integrated and accessible to all women and children in Ghana within the context of primary health care (PHC). Emphasis will be on health promotion and disease prevention through implementation of the risk approach. Referral systems will be strengthened." Six priority areas have been identified: malnutrition, maternity care, family planning, communicable disease control, diarrhoeal disease, and malaria.

The objectives of MCH/FP services in GAMA can be summarized as reduction of maternal, prenatal, infant and childhood mortality and morbidity and promotion of reproductive health and physiological development of the child and the adolescent within the family.

(c) Target Population

The characteristics of the part of the population which are the target of the MCH/FP programme include women of child bearing age which form 18-20 percent and children under five years of age which consist of 16.2 per cent of the population in GAMA. The Regional Health Administration's PHC programme had been to extend services to 80 percent of all Ghanaians and to prevent and treat the disease problems that contribute 80 percent of unnecessary sickness, disability and death afflicting the residents in the ten year period (1980-1990). This is based on the premise that service activities are part of a total social and economic development with the complete involvement of the people at the community level. For family planning service, the Regional Health Administration aimed at increasing the number of women accepting family planning methods from 19 percent to 30 percent of the eligible population by 1990.

Of the 584,700 outpatients who attended government health facilities in GAMA, over 27 percent were children under the age of 4, and 10 percent were under the age of one. There were 312 MCH/FP institutions serving the GAR in 1988, which was 27.73 percent of the total in the country. The GAR MCH/FP programme has a total of 455 health personnel, which gave a ratio of one MCH/FP personnel to 5070 population. The national average was one for 6799, WHO guidelines recommend a ratio of one to 1000.

The number of women attending the MCH/FP programme in GAR indicated that only 62 percent (65 % nationally) of the targeted population received ante natal care; maternal death for the same year (1988) was higher than Brong Ahafo and Volta Regions and; the attendance of child health service was very low (13%) compared to Ashanti (34%) and Brong Ahafo (24%). These and the general coverage of the MCH/FP programme in GAR suggest that it was likely the national, as well as regional target of achieving basic and primary health care for 80 percent of the population of GAMA and attacking effectively the disease problems that constitute 80 percent of the preventable deaths and disability afflicting the residents of GAMA by 1990 was not met.

6.3.6 Health Facilities

In 1990 there were 6 hospitals, 7 polyclinics, 13 health centres, 10 clinics, and 2 maternity homes owned and managed by the government; 2 hospitals were owned by quasi governmental organizations, and; 13 hospitals, 64 maternity homes, and 138 clinics were owned and operated by the private sector. Korle Bu, a teaching hospital, is not included. A total of 584,700 outpatients were treated at governmental facilities in 1988. Out of the total of 2,923 beds in GAMA, Government provided 1732 hospital beds, 107 maternity beds, and 201 cots, while that of the private sector included 157 hospital beds, 26 maternity beds, 130 cots, and 560 clinic beds . This means there was one hospital bed for every 905 residents of GAMA.

The health delivery system of Ghana has been categorized into A, B, and C levels corresponding to primary (health community clinics), secondary (health posts), and tertiary (district or regional hospitals) health care systems. GAMA does not have a regional hospital. There are plans to make Ridge a regional hospital after the necessary material, equipment, and human resources requirements are met.

6.3.7 Financing Health Services

In GAMA, there are three main sources of financing delivery of health services: government, cost recovery (hospital fees and drug costs), and others (in-patient, etc).

(a) Government Budget

Although there have been remarkable improvements in the country's economy since 1985, there has never been adequate money for health services to meet the target figures. It is now government policy to scale down expenditure on general administration in favour of direct medical services. The budget for general administration was reduced from 36 to 27 million cedis between 1988 and 1989. On the other hand, during the same period, the allocation for various medical services was increased from 527 to 1,149 million cedis, a 57 percent rise. This was about 620 cedis per capita, which was still low compared to other countries at a similar level of development.

The revenue for 1988 was nearly 120 million cedis compared to 349 million cedis allocated for GAR during the same period for medical services, a deficit of 229 million cedis. The revenue for 1989 was nearly 150 million cedis, an increase of 25 percent, but showing a deficit of 377 million cedis.

(b) Cost Recovery

There are two ways of recovering costs incurred in the process of delivery of medical services: Hospital fees and drug costs.

(i) Hospital Fees

Prior to the Hospital Fee Regulation Law of 1985, fees for services rendered in government facilities of GAR made little financial contribution to health costs recovery. The Law gave several new directions in cost recovery policy, including the decisions not to charge for preventive services at government facilities and to supply drugs at full cost.

Fees collected have risen dramatically since 1985. For example, they grew from 26.5 in 1985 to 150 million in 1988. Despite these increases, the health facilities have been running in deficit. For example, the total costs for rural health posts were between 1.0 and 2.4 million cedis (1987), urban health posts approximately 7 million cedis, and urban polyclinics 9-14 million cedis. The revenue for rural health posts range from .5 to 3 million cedis (1988), whereas for urban polyclinics revenues range from 5 to over 11 million cedis. The revenue returns for Ridge, Achimota, and Tema General Hospitals were about 21, 6, and 19 million cedis respectively. A national study in 1987 of three groups of hospitals (under 100, between 100 and 200, and over 200 beds) suggested expenditures to be between 18 and 27 million cedis. The revenue for Achimota with 52 beds was 6 million cedis.

For level B facility, unit cost per outpatient visit ranges from 300 to 600 cedis (as daily attendance increases from 38-134). The average costs per outpatient visit at a health post and urban polyclinics were 130 and 215 cedis respectively. The actual fee for a first visit to a polyclinic in Accra was 50 cedis for the first visit and 30 cedis for subsequent visits for adults and for children, showing clearly that government facilities heavily subsidised both out-and in-patient medical services.

(ii) Drug Costs

The drug procurement process is cumbersome, it takes a long time from tender to arrival and supply, and is done without the full consent and consultation of those involved in prescribing and dispensing drugs. The central medical stores have only 50% of the essential drugs at any one time. MOH employees are receiving up to 40% of hospital drugs free of charge. One study estimates that cost recovery from drugs was about 34% in 1987.

In 1990, hospitals used two systems of selling drugs. The first was the drugs sold at prices they were received from regional stores, i.e. without any mark-ups. The second, popularly known as "Peoples Shop" and operated by the health facility, bought and sold drugs that are normally not available in the central or regional stores for a small profit which is used to supplement various hospital expenses. The money was used for "cash and carry" of drugs from regional stores. Since then, MOH has been reluctant to allow hospitals to use the profit for hospital expenses because of fear that they would not care to request money already allocated by MFEP.

(c) Cutting Costs

Expenditures for personnel, drugs, and other items at B level health (polyclinic) range between 75-90 percent of the total expenditures. This leaves 10-25 percent to support preventive and promotive health activities. Personal emoluments for both the curative and preventive activities accounted for 60-75 percent of the total expenditures. Personnel costs are extremely high. There are a number of people on the Regional Health Administration's payroll who if taken off would not affect the delivery of health services in GAMA. It is believed that up to 15 percent of the personnel costs can be reduced without affecting the quality of service.

6.3.8 Manpower and Training

The single largest category providing service delivery is nursing personnel. Technical officers, which include medical field unit (MFU) personnel, nutrition staff, and other categories of primary health care (PHC) field personnel, comprise the second largest category. The small number of physicians demonstrates the scarcity of this highly skilled cadre of professional. In 1990, there were only 72 physicians working in governmental facilities, excluding Korle Bu hospital. Of these 10 were dental and 2 general surgeons. There were no pediatricians, ophthalmologists, and pathologists. GAMA has the highest concentration of medical personnel. The 1987 medical personnel distribution shows that there was one physician for every 3640 people living in GAR, compared with 1:13,870 for the nation. Some amount of specialised services are available outside the public sector, however, there are no statistics on them.

There were 1,995 nursing personnel in GAR in 1987, consisting of clinical nurses who are engaged in medical care, public health nurses, and community health nurses who are working in primary health care, mostly in health centres and posts. The distribution of these personnel in GAR is far above the national average, but significantly lower than the WHO standard.

The category of primary health care technicians (226 in GAR) include nutritionists, medical field unit personnel, medical assistants and environmental sanitation personnel. The number and distribution of these personnel provide the basis for judging the capability of the PHC system to achieve such targets as 80 percent coverage by the year 2000. The GAR lags behind other regions in the supply of medical field assistants and environmental sanitation sub technicians.

Accra is one of the three regions having the largest numbers of pharmaceutical suppliers, once again reinforcing the growing awareness that the health system is largely curative based.

The majority of nursing schools and schools for health inspector assistants and laboratory and x-ray technicians are located in Accra. Of the 343 physicians produced between 1983 and 1987, 228 or 66 percent were from Korle Bu hospital. Several other categories of personnel, such as pharmacists and BSc level nurses are also produced in the university system.

6.3.9 Planning and Management of Health Services

Health planning is one of the weakest points of the MOH and the RHA where it does not exist. The planning division of MOH has only two employees whereas a number of professionals is required. The GAR office does not have a planning unit. The emphasis is on budgeting and is carried out by the Regional Health Secretary (Administrator). Neither do they have adequate planning information nor to assist in manpower planning, cost analysis, evaluation of programmes, formulation of objectives and strategies, preparation of plans of work and budget or projects for funding.

The district level should be the unit for health management and planning, headed by the District Health Officer. He/she will be responsible for planning, budgeting, supervising and implementing, and evaluating district health programmes, managing human and material resources, conducting district health programmes, collecting data and initial analysis, and formulating district strategies.

Supervision and coordination of district health delivery services, overall planning, budgeting, cost recovery and use of funds, development of programmes should be located in each of the regions. This includes transfer of budget autonomy from the MOH once the final allocation has been done by MFEP. The region, in cooperation with districts, should formulate regional plans and strategies, evaluate health delivery services, select and analyze data and enforce laws and regulations. The continuing and essential function of the MOH is to ensure that the concerns of equity are addressed across all regions and to provide assistance in meeting regionally defined objectives or needs and formulate national policies. The organizational structures and management styles and processes at the regional and district offices need to change in line with the demand for health services. These offices have serious deficiencies in trained manpower, especially in health planning, personnel and financial management and manpower training. The Regional Health Administration, not headquarters, should take the main coordinational responsibility, and this requires a variety of support services, both technical and managerial.

(a) Management of Health Facilities

The health facilities, at all three levels, are over used, under shaped, and under financed, especially those at B (polyclinics) and A (community clinics, health posts) levels. The Mamobi Polyclinic, for example designed to serve the residents of Nima, Kotobabi, Accra New Town, and Alajo with a total population of over 234,000, has only one physician whose daily load includes seeing an average 60-80 patients (it may reach up to 120 during certain seasons), managing the clinic, and keeping the account books, which takes about 30 percent of the doctor's time. Labadi polyclinic now serves a population of 180,000 people, much beyond its design limit, as is the one in Mamobi. Furthermore, the health facilities are badly in need of rehabilitation, and lack some of the basic equipment such as maternity chairs, laboratory and x-ray equipment, refrigerators, etc. A major investment of rehabilitation and a review of management practices are urgently needed.

6.3.10 Issues in the Delivery of Health Services

(a) Population Growth

Health services data present a bleak evaluation of the country's total health situation. GAMA's population is growing at a rate of 4.4 percent, eating up a major portion of the gains from economic recovery and structural adjustment. The total fertility rate is high (6.4 per woman) and 22 percent of the women are in the reproductive age group. Contraceptive prevalence was estimated at only 11-13 percent in 1987, and current estimates of the proportion using efficient methods differ considerably from 5 to 10 percent. The infant and maternal mortality rates in 1989 were 40/1000 and 6-10/1000, respectively. Immunization programmes have reached only one-fifth of the children under two years of age, yet measles and pertussis are the second and third largest causes of post- natal mortality.

(b) Cost Recovery

Although fees for services rendered in government facilities have increased dramatically since the 1985 Hospital Fee Regulation Act, studies indicate that both in-and-out-patient services are heavily subsidized by the government. No adequate quality medical services can continue to be provided with such heavy subsidies.

Three problems contribute to the high cost of drugs (1) delay in getting financial coverage from the MFEP for each order, and competition for scarce foreign exchange. While these happen, the time for guaranteed prices for international suppliers elapses, hence prices tend to rise for new tenders; (2) delays also occur at Tema due to lack of funds for port charges, and (3) conflicts between the procurement agency (Supply Commission), which analyzes tenders on the basis of price, and MOH which selects suppliers based on reputation and previous experience. Price affects quality consideration, particularly in storing drugs and supplies for extended periods in tropical climates. Furthermore, cost recovery from drugs was as low as 34 percent in 1987, and government employees receive a disproportionately high percentage of the hospital drugs free of charge.

(c) Inadequate Public Finance

Although there has been a remarkable improvement in the country's economy since 1985, there has not been adequate money to meet even the target health needs of GAMA. The 1989 budget for GAR was 1,149 million cedis, which was about 620 cedis per capita. This is very little compared to other countries at similar levels of development.

(d) Priority in Health Budget Allocation

Although primary health care (PHC) is the priority for health system development in Ghana, the majority of the health resources have been absorbed by the curative care system. The MOH's recurrent budget allocation (1983-87) shows that 60 percent goes to curative care at hospitals (level C and teaching hospitals). Only 20 percent makes its way to level B and A (PHC) activities. The balance of 20 percent was for administration and common services.

(e) Shortage of Specialists

In 1988, there were only 68 physicians working in government health facilities, excluding Korle Bu hospital. Hospitals and polyclinics are severely under manned. Specialists such as surgeons, pediatricians, gynaecologists, epidemiologists, opthamologists, etc. are either too few or totally missing from governmental health facilities.

(f) Inadequate Support Systems

The delivery of health services requires hospitals and clinics, drugs, hospital drugs, and equipment. The quality of buildings in which the services are provided are not acceptable, neither are the supply of materials and equipment always assured. It is not possible to provide health services where such basic support services are unavailable or often missing.

Furthermore, one of the main problems facing MCH/FP and PHC programmes is transportation to reach people living in the different sections of Accra and in rural areas of GAMA who have no access to health facilities. Transportation is an important component in the implementation of PHC and MCH/FP on which the government places high priority in the improvement of the health of the Ghanaian people. Important health services had to be abandoned or postponed due to lack of transportation.

(g) Lack of Community Participation Guidelines

It is government's stated policy to involve communities in the planning and implementation of PHC strategy. No national framework for community participation has, however, been outlined in a process that is expected to reach every Ghanaian household. An effective community participation strategy is crucial to the success of PHC and MCP/FP programmes through which it is expected to reach the national goal of 80 percent coverage.

(h) No Inter-sectoral Coordination

Health programmes require the cooperation of all sectoral activities. This is particularly important at the district and local levels where most of the actions take place. Although a PHC Intersectoral Coordinating Committee was formed years ago in the Ministry of Health, it has not produced any results. For the PHC to succeed, the participation of agencies, organizations, and businesses, as well as villages, towns and cities is needed. The mechanism for coordination of these entities is missing both at the national and regional levels.

(i) Weak Planning and Information Bases

Health activities require a lot of information about diseases, their incidence and frequency, location, distribution; future plans about location of health facilities, financing, various costs, manpower and their utilization, etc. In general, this is not available either at the MOH or the RHA. The latter collects some data but it does not have the capacity to process or analyze them for future use in planning and management. At both levels inadequate attention and recognition have been given to planning activities. There are no planning units at either the regional or district levels where they are most needed.

(j) Centralized Organization and Management System

Decentralization of health administration has never taken place, even though it was the corner stone of the 1982 PNDC health policy. Health and medical services are local activities, the organization, management, financing, monitoring, and evaluation of which should also be of local concern with the necessary policy coordination of the MOH.

6.4 WELFARE SERVICES

6.4.1 Organization of Welfare Services

Introduction

The delivery of welfare service is the responsibility of the Department of Social Welfare under the Ministry of Mobilization and Social Welfare. The Department has two main divisions: Welfare and Rehabilitation. The Greater Accra Regional Social Welfare Office administers all welfare services in GAMA. There are also district offices in Accra, Tema, and Amasaman. The Accra District office has four zonal offices in Osu, Kaneshie, Accra Central, and Adabraka. There is a plan to establish a zonal office in Ashiaman in Tema District.

6.4.2 Welfare

The work of the Department of Social Welfare is focussed on the (a) individual; (b) family; and (c) group. The work with individuals involves a relationship of one-to-one basis. This is characterised by efficient case-recording resulting from an intimate relationship with the client through visits to him in his home and visits by him to the officer at his office. During these visits the officer embarks on discussions relating to the client's problems and works together with him for possible ways of meeting them. The family case work has similar objectives, procedures, and basis of relationship. However, it has as its objective the maintenance of children, in particular, and the cohesion of the family, in general.

The group work aims beyond just merely working with groups of people; it helps individuals within it to learn to make adjustments in their relationships with others and to acquire firmness of character and the ability to overcome one's problems. It consists of programmes for social education through talks and group discussions on topical issues, recreational activities including excursions, and such other activities as may be based on sub-group interests.

6.4.3 Social Defence Services

These are statutory casework services aimed at the prevention and treatment of crimes in areas of juvenile delinquency, probation, aftercare, maintenance of children, and institutional care.

(a) Probation System

The probation system consists of a remand home and probation homes. The aim of the probation service is to give the offender an opportunity to prove himself/herself capable of change. A remand home is a cell for keeping in custody juveniles who are awaiting disposal of their cases by the courts. In order to keep inmates up and working, a programme of activities consisting of informal education and a variety of vocational training programmes are provided. There is only one remand home in GAR.

A probation home is a place for keeping juveniles released on probation by the court with a condition of residence. The inmates remain there for a period during which time they undergo a programme of activities prescribed for Industrial schools with the opportunity for eligible inmates to attend normal schools outside the home. GAMA has one probation home in Osu at the Vocational Training Centre.

(b) Court Social Work

GAMA's social welfare service provides Probation Officers to the courts to undertake such social services of the court as the judges may request. The Officers will be expected, among other things, to arrange to be present at court sittings in both juvenile and adult courts. Court officers will liaise with the zonal welfare office centres in matters of social investigations, preparations of reports for the court, and in the supervision of probationers.

(c) Industrial Schools

The basic idea of industrial schools is character training and reformation. As part of the programme of training, the juveniles are trained in various areas such as carpentry, masonry, shoe making, fitting, cane work, tailoring, and dress making and catering for girls for a period of 12 months when they are in probation.

Trade training is a programme where every inmate, in consultation with his parents or guardian, chooses the kind of trade which he would like to pursue and which will facilitate his resettlement when he has been discharged. Farming or gardening is, however, compulsory for every inmate. This is in addition to the trade of his/her choice plus whatever hobby or hobbies he may care to pursue.

Trade training does not provide formal education classes since there are often not enough inmates suitable for formal schooling to justify such classes. Inmates suitable for formal schooling are permitted daily to attend normal schools outside the training schools operated by the Welfare System, although every industrial school has a programme of informal education consisting of rudimentary exercises in arithmetic geared towards the requirements of the trades taught in the school, literacy lessons, group discussions on current affairs, religion, hobbies and any such exercises as may be considered desirable.

(d) Aftercare Services and Prison Welfare

The objectives are to bring about the smooth resettlement and reintegration for discharged inmates of the industrial schools, the borstal and the prisons. This involves the preparation of the inmates for discharge and providing constant supervision and advice after they are discharged. In some cases, the social welfare service provides money to buy tools and materials to start off the inmates who are interested in setting up businesses.

6.4.4 Children's Services

The children's services programmes provide a variety of social services such as adoption, children's homes, day care centres, school welfare services, and family maintenance.

(a) Adoption

It is a confidential service which changes the status of the child adopted under the National Adoption Act of 1962 (Section 104) and the Adoption High Court Rules. The adoption programme is linked with Children's Homes, an institution for abandoned or orphaned children, and carries out 20-30 adoptions a year.

(b) Day Care Centres

Day Care Centres are part of a children's programme under which children of working mothers are sent to these centres during working hours for proper care and supervision. There are over 120 day care centres in Accra owned and managed by private individuals and associations. The GAR Welfare division is the regulatory agency for the day care centre services. It also trains staff of the day care centres at the National Day Care Training Centre in Madina, about 16 kilometres north of Accra, for a period of 3-6 months, where various levels of training programmes are provided.

(c) Family Planning

The benefit of the programme is discussed in group sessions at neighbourhood centres among various associations such as church and NGOs in the presence of the Family Planning Assistants who act as animators. The individual programmes are geared to the problems of those members of a group who may wish to undergo treatment at an appropriate and approved clinic. The National Family Planning Programme is responsible for training the Family Planning Assistants.

6.4.5 Service for the Youth

The national youth service has been transferred to the National Youth Council under the Ministry of Youth and Sports.

6.4.6 Services for the Sick and Destitute

(a) Hospital Service

The hospital based social worker assists patients to take full advantage of the services that are available in the hospital, to conduct social investigations required for diagnosis and/or treatment of certain patients, to investigate financial capability of patients; and recommend exemption: to serve as a link between patients and their homes; and to undertake social work with orphaned and abandoned babies and with children suffering from malnutrition.

(b) Services for Destitutes

The Department provides accommodation and care for destitutes who may be brought to its notice either through the court or some other way. There is only one Central Destitute Infirmary in Ashanti Region for the whole country.

(c) Rehabilitation

The main objective of this division is to turn the disabled adult into a productive, contributing and socially effective member of the society. Services offered include: identification and registration; guiding and channeling disabled persons to the service most likely to help their resettlement problems (e.g. schools, hospitals, etc.); rehabilitation counselling; vocational rehabilitation; placement, aftercare and follow- up; and social education.

Two types of institutions namely Accra Industrial Rehabilitation Centre, and the Rural Rehabilitation Centre have been established to offer prevocational training, vocational training, and placement services. Other services provided at the centres include literacy and civic education classes, recreation, and special case-work service to solve personal problems and to help their adjustment to living and working with others. All costs of training are borne by the government.

(d) Accra Industrial Rehabilitation Centre

Courses are planned to build confidence in the disabled and to provide the psychological conditioning process required by many disabled people before they undertake specific training or employment. The Centre is designed to help the urban disabled to train for wage-earning employment, offering vocational training in bag-making, rural crafts, carpentry, basketry, leather works, cane work, shoe making, and joinery. Successful candidates are placed in "designated occupations" if they are not able to compete in the open market for employment. A disabled person placed in "designated employment" may work as lottery ticket seller, electric passenger lift operator, gateman, car park attendant, railway level crossing keeper, etc.

6.4.7 Training and Manpower

There is only one school for social work in Ghana to train junior social workers. The programme lasts two years. Two years practical experience is required before admission to either a diploma or a degree course at the University of Ghana. The annual in- take at the Social Work School ranges between 40 and 50 students. There are also degree and diploma courses given at the University of Ghana, Legon.

6.4.8 Issues in the Delivery of Welfare Services

(a) Shortage of Social Workers

Accra has 100 social workers, Tema has 11, and only one in Ga. This is about 12,500 persons for every social worker in Accra, 24,600 in Tema, and nearly 200,000 for Ga. Ideally, one social worker should handle less than 20 cases. At present a social worker handles up to 200 cases. The target should be about 75 cases by the year 2000 for every social worker.

(b) No Statistical Data or Information

Social welfare services require a variety of information and data to provide adequate services in time and place needed. Unfortunately, this is not available due to the shortage of personnel, logistical services, budgetary resources, and other facilities.

(c) Lack of Public Awareness

Although welfare services have been recognized as an integral part of urban life, the public does not seem to be aware of the services provided by the Department of Social Welfare. Nor is the importance of the services adequately supported by the government's commitment in resource allocation. Certain activities in the rehabilitation division have to close down up to 3 or more months every year due to budget shortages.

(d) Lack of Decentralisation

Social problems have local characteristics which have to be solved locally. For a variety of reasons decentralisation has not taken place in the delivery of social welfare services. Every case has to be referred to the headquarters of the regional administration. This takes time and resources.

(e) Logistical Services

Valuable welfare services cannot be provided due to shortage of logistical services, particularly vehicles. Services to hospitals, prisons, adoption centres, and children's homes and visits to aftercare services have to be cancelled or postponed because of lack of transportation. These are important services which should not be delayed or abandoned.

(f) Lack of Exchange of Experiences

Despite geographical and social differences, most social problems have similar characteristics, especially in the urban areas. Many useful lessons about control, prevention, and solution to the common social problems can be shared if the forum for exchange of experiences exist. The outcome of such exchange would be important in the design and implementation of social welfare programmes.

6.5 RECREATION

6.5.1 The Organization of Recreational Activities

The number and variety of recreational and leisure activities are limited in GAMA. They are provided by both the private and public.

6.5.2 Private

The private recreational activities are organized on 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 and Tema Golf Clubs, and UAC and SSNIT Clubs, are open to members and their guests. Other activities such as yatching 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.

6.5.3 Public

The public sector provides sports and non-sports activities. Sports are the most popular recreational activities in GAMA, with almost all of the facilities located in AMA. In creating a Ministry for Youth and Sports, the Government recognizes the need for building a strong and a healthy nation which can effectively participate in national development as well as training individuals who can compete in national and international sports and project a good national image.

The Department of Sports is responsible for policies and budgets. Its executive body is the National Sports Council which supervises and coordinates the activities of 19 sports associations and 10 Regional Sports Councils, which, in turn look after the activities of District Sports Councils. GAMA activities are under the supervision of the Greater Accra Region Sports Council which has an office in the Regional Administration.

6.5.4 The Greater Accra Sports Council

The Greater Accra Sports Council (under the National Sports Council) is responsible for promoting and encouraging the organization and development of, and mass participation in, amateur and professional sports; maintaining and integrating all efforts to raise the standards of performance in amateur and professional sports; organizing and assisting financially, the participation of Ghanaians in national and international competitions; providing sports instructors to any team requiring instruction; providing and maintaining sports centres and facilities for use by all sportsmen and sportswomen; maintaining all playing fields and stadia; and providing financial assistance to all recognized sports associations and regional sports councils. The functions of the district sports council are similar.

Its operating budget includes any grants received from the government for the discharge of its objectives and functions, loans granted to it by the government or any banking institutions; funds raised through organizations locally and/or internationally; and gifts.

6.5.5 Sports Facilities

There are three sports stadia in Accra: The National 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 which 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.

6.5.6 Non Sports Recreational Activities

The main recreational activity outside organized sports are beach going where there are several sandy beaches such as Dansoman, Labadi, Bortianor, Chorkor and Kokrobite. Some of these beaches also provide additional entertainment facilities. The children's (Ridge) Park, Botanical Gardens, the Rotary Gardens on 28th February Road, and the Kwame Nkrumah Memorial Park, (opposite the Parliament House) are the parks and gardens serving the public for recreational purposes. The Kinbu and Afrikiko Gardens located in the heart of Accra and Kanda Estate provide some entertainment activities from time to time. The Department of Game and Wildlife runs a small public zoo at the Flag Staff House in Kanda Estate.

6.5.7 Issues in Recreational Activities

(a) Land and Related Problems

First, due to the complicated system of land ownership and the long process involved in acquiring land, it is very difficult to get land for sports or other recreational activities such as parks and gardens. Second, where land has been zoned by the Department of Town and Country Planning getting a certificate of title to ownership takes a very long time, during which it can be encroached upon. Third, the Ministry of Youth and Sports does not have police authority to protect or prevent encroachment on its lands or resources to develop it. The occupation by thousands of people of the land acquired for the New Sports Complex in the Western part of Accra is a clear example of these agencies weakness, vis a vis encroachers.

(b) Training the Trainers

Sports activities suffer from shortages of good trainers. There are two training centres: the Physical Education Training Centre and the Sports College both located at Winneba. The former is a three-year course programme designed to train experienced teachers to be physical education instructors in junior and senior secondary schools. It is under the Ministry of Education. The training policy and syllabi are prepared with the cooperation of the Ministry of Youth and Sports. The Sports College, under the Ministry of Youth and Sports, is a 1-6 month course geared toward teaching the basics of coaching to experienced or retired sports men and women.

(c) Development Fund

Building sports facilities requires huge financial outlays, not generally available from government sources due to priority sectoral developments. Existing stadia also need major rehabilitation, the cost of which cannot be covered through membership fees only.

(d) Inadequate Training Capacity

Both schools have limited training capacities, manpower and equipment. Coaching has become less attractive in view of the status of sports and activities in schools and public facilities in the country.

(e) Over Emphasis on Sports

Although sport is a major form of recreation, it is not the only means. Parks and gardens, zoos, bird sanctuaries, libraries, museums, arts and crafts, theatres and concerts, historical, cultural clubs, etc. have not been adequately explored as means of recreation.

(f) Inadequate Recognition

Shortage of resources, public commitment, lack of recognition of sports as a profession and source of income, and the absence of professional associations have contributed to the low status and profile of sports and sports persons in the country. This has discouraged the participation of potential sports men and women from full time occupation in sports.

6.6 EMERGENCY SERVICES

6.6.1 Organization and Management of the Police Force

GAMA is administered by One Deputy Commissioner for Greater Accra and one Assistant Police Commissioner for Tema, both of whom report to the Inspector General of Police. The smallest police unit is the station, headed by Chief Inspector or Inspector who reports to the Deputy Superintendent in charge of a district. Between the regional officer and the district officer are divisions headed by Chief Superintendent or Superintendent. At headquarters level, the Inspector General is assisted by six Schedule Officers: Commissioners for Criminal Investigation Department (CID), Administration, Operations, Technical Services, Welfare, and Training.

There are plans to establish a research and planning unit and a legal directorate at the police headquarters. The former will be responsible for research of criminal activities (types, extent, location, frequency, times, etc.), traffic volumes, congestion pattern, and collection and analysis of other activities to enhance public safety, particularly in the urban areas. The legal directorate will handle special cases currently handled by the office of the Attorney General. The idea is to train a group of competent specialists to handle sensitive legal cases.

6.6.2 The Goals of the Police Service

The goals of the police service are to (a) protect life and property; (b) prevent crime; (c) preserve public order, and; (d) enforce laws and regulations.

6.6.3 Major Criminal Activities

The top five crimes in GAMA are theft, fraud, threat and assault, armed robbery, and rape. No statistical data is available about the extent or the frequency of these acts. Inadequate transportation and communication facilities, resulting in delays in answering emergency calls, inadequate data collection and analysis, lack of effective public cooperation, and various social and economic problems contribute to the fast increase of criminal activities.

(a) Other Problems

The tremendous traffic problems in Accra especially in the central business area, are attributed to lack of proper city planning. No proper study is made of the traffic volume, pattern, and factors contributing to the generation of traffic before designing streets, which are also too narrow and inappropriately sited. Other reasons cited by the police are rapid increases in the number of vehicles, lack of traffic education and use of vehicles by inexperienced drivers, illegal parking, etc.

Juvenile delinquency is one of the growing criminal activities in Accra, for which the cooperation and assistance of parents, various government agencies, notably the Social Welfare Department, the Revolutionary Organs, the Military and the Attorney General are vigorously sought. There is a close cooperation with the Departments of Social Welfare and Community Development in providing a variety of youth training programmes.

6.6.4 Implementation Strategy

The strategy for implementing these goals changes slightly from district to district; the most important ones include:

(1) Intensified day and night patrols. The police use beat patrols mobile car patrols especially at known crime spots. The mobile units operate round the clock.

(2) Stepped up recruitment and vigorous training for officers. There are plans to increase the police force serving GAMA as well as improving the quality of service. Since 1989, the minimal entry requirements have been raised to GCE 'O' Level or its equivalent. University graduates and diplomats are recruited to fill senior appointments, but all new entrants must go through six months of basic recruit training.

(3) Improved police public relations. The police gets some help from the community in patrolling various commercial and business areas and neighbourhoods. This is done through the Neighbourhood Watch Committees, the idea of which is to arouse the awareness of the public to the preventive methods against criminal activities, through revolutionary organs, and other associations.

(4) Obtaining more and better equipment for communication, information analysis, detective work, and defensive and crowd control equipment.

6.6.5 Manpower and Training

There are over 16,000 officers in the Ghana Police Service, which is one police officer for about 900 Ghanaians. There are plans to increase the police force to 30,000 by the year 2010. The Accra Region has 2,000 officers, that is, one officer for about 625 residents of Accra. The police plans to improve the quality of service through higher admission standards; improving the training programmes and techniques; providing adequate logistical support services; and making the police force competitive in terms of employment. The basic qualification of admission to the police force has been changed from just graduates of JSS to those with at least 5 passes in 'O' level or 2 passes in 'A' level. This is a marked improvement which is bound to change the quality of the service. In fact, Ghana will be one of the few countries requiring such high qualifications of its new recruits.

The training exposes them to a variety of courses, such as police work, psychology, politics, geography,, English and physical education, expected to last 6 months after which they are assigned to various practical training programmes covering a period of one and one-half years. A successful completion of both theory and practice entitles them to be confirmed as constable class II.

To join the Police College, candidates must be inspectors and must pass competitive entrance examinations. Graduates and diplomates must pass through six months of recruit training and eighteen months of practical training to enter the Police College for a period of six months of training during which they study subjects such as police work, management, social services, courses in liberal arts, etc.

The National Training Depot, (with sub-Depots in Ho, Koforidua, and Winneba), Police College, and Detective Training Schools located in Accra cater for the training needs of the nation. The annual in-take at the National Training Depot range between 200-500, while the College admits 50 to 60, and only 32 can be trained at the Detective School at a time. The College is the highest police training institution in the country. These institutions lack adequate training facilities, equipment, materials, and audio visual teaching aids. The plan calls for construction of new and/or renovation of existing facilities, acquisition of modern communication equipment and various audio visual aids.

6.6.6 Issues in Police Service

(a) Shortage of Manpower

Although GAMA receives the largest share of the newly trained police recruits every year (200-500), it needs a far larger number of policemen every year. This has not been possible due to accommodation problems.

(b) Delay in Emergency Services

Two problems cause the delay in answering emergency services: First, the police have acute transportation and communication problems in handling emergency services. They have no adequate vehicles, radios, or other electronic devices;

Second, public communication systems such as telephones through which the public can report or ask for emergency services are virtually non-existent.

(c) Public Mistrust

As is customary in other parts of the world, GAMA police often solicits the cooperation of the public in investigation of crimes. There are problems facing this programme: the reluctance and/or indifference of the public to report crimes, cooperate with the police in investigation, and/or prevention of criminal activities. This is mainly due to the public mistrust of the police and the confidentiality of the information.

(d) Inadequate Public Relations

The police have not done enough to convince the public of their commitment to protect them and to seek their alliance in the prevention of crimes.

(e) 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 the public interest has been awakened in support of the police.

(f) The Multiplicity of Agencies

The multitude of agencies involved in the planning and development of AMA 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 in GAMA.

6.7 FIRE SERVICE

6.7.1 Organization of the Fire Service

The Ghana National Fire Service (GNFS) is under the administration of the Fire Marshal in the Ministry of Interior. It is responsible for fire prevention, suppression, and fighting all types of fires, and rescue of persons, animals and property from the ravages of fire, floods, earthquakes and other natural disasters. The operational head of GNFS is the Chief Fire Officer. It is organised along administrative lines with offices in all the regions and districts. GAMA's fire service is provided through four district fire stations (2 in Accra and 2 in Tema), each of which is headed by a Divisional Officer. Fire hydrants are installated on sizeable Ghana Water and Sewerage Corporation mains in strategic locations in the metropolis to facilitate fire fighting operations. They include; the major industrial and commercial zones and also along principal streets.

6.7.2 Manpower and Training

There are 3,219 fire service personnel in Ghana, which is one officer to about 4,700 persons. GAMA has 1,109 officers in Accra (1 for about 1,130 residents) and 104 in Tema. GNFS has a Training Depot located at James Town in Accra which has a capacity for training 400 recruits every year. It has very selective admission standards, accepting only those with GCE "O" level, City and Guilds and Royal Society of Arts passes. In its nine-month long training programme, followed by three months practical training, a variety of courses ranging from building construction, firemanship, hydraulics, and sciences, to drills, fire investigation, fire prevention first aid, rescue operations, etc. are taught. However, the training facilities are inadequate.

6.7.3 Major Causes of Fire

About 2,500 fire incidents are registered nationally every year, with an estimated cost of damage of about 400 million cedis a year. It is believed that for reasons of communication (telephones), transportation, distance, and the fact that people were able to extinguish them, a substantial number of outbreaks of fire are not reported. A total of 231 people have died due to fire from 1989 to 1991. The main causes of fire are electrical, fuel and fats, gas, cigarettes, and children playing with matches.

6.7.4 Fire Regulations

The basis of fire regulation in Ghana is the 1963 Act of Parliament, Law No. 219, which has been adopted from the British Fire Code with the some adjustments for the conditions in Ghana. A new fire code is under preparation. This is being done without the consultation, cooperation, and input from the relevant agencies such as the Department of Town and Country Planning, Electricity Corporation, Ghana Water and Sewerage Corporation, Factory Inspectorate, etc.

6.7.5 Agency Coordination and Cooperation

The GAMA Fire Service, either at the national or regional level, has no consultative, cooperative, or regulatory relationships with agencies responsible for approving building plans and permits, electrical installation, water, road building, etc. The Service does not, for example, have a representative on the Committee which approves zoning, new developments, and building permits.

6.7.6 Fire Services

The basic means of providing fire service in GAMA is the fire tender which has a capacity of 600-800 gallons of water. There are five fire engines for Accra and one for Tema. There are about 500 fire hydrants in Accra, however, it is estimated that only about 50 percent of them are in good working condition. Over 3,000 fire hydrants are plannéd to be installed in GAMA during the next five years, this includes replacements for those which are defective or out of service. GAMA's Fire Service has no record of either the exact number or the location of the fire hydrants in Accra or Tema. Some of them are buried under soil sediments.

6.7.7 Location of Fire Stations

The location of fire stations is determined on the basis of prevailing fire hazards, population growth, availability of infrastructure, strategical considerations, (access to other areas), and regular sources of water supply, either from supply lines or static water body. One of the main problems facing the selection of fire stations is the shortage of land in the built up areas. Ideally, a regional fire headquarters should have 30 acres of land for offices, garages, housing for the firemen, and recreational facilities, while the requirements for district and sub-districts fire stations are estimated to be between 15 and 30 acres.

6.7.8 Public Relations

The GNFS has an extended public education program centered around fire stations numbering about 49 throughout the country. A variety of methods such as lectures at public places, demonstrations, bush fire suppression, fire prevention campaign, and occasional radio and TV programmes are used. The program covers industrial, commercial, public, and private facilities. Over 100,000 volunteer fire fighters have been trained so far.

6.7.9 Issues in Fire Service

(a) Inadequate Fire Service

The delivery of fire services is constrained by distance and length of fire fighting operations because of the congested nature of roads in GAMA, and low capacities and qualities of fire fighting engines.

(b) Unreliable Supply of Water

The Fire Service relies on the existing fire hydrants and stagnant water for refilling the fire engines. The capacity of the engines does not allow the fire engines to operate for more than 2 or 3 minutes uninterrupted. The erratic supply of water coupled with the poor conditions of a lot of the fire hydrants, pose real difficulties during prolonged fire fighting operations.

(c) Street Address

Three issues are involved: access roads to houses, street names, and house numbers, without which it is difficult, if not impossible, to provide fast service, save lives or protect property.

(d) Communication Delay

The Fire Service believes it can save and protect more lives and property if fires were reported immediately. The biggest constraint is the lack of telephones and other means of transportation, especially in the outlying parts of Accra. There are no fire designated lanes in Accra, causing further delays in responding to calls.

(e) Other Emergency Situations

GAMA is an earthquake prone zone for which no adequate preparation exists educationally or operationally, to protect life and property.

(f) Multiplicity of Agencies

One of the problems facing the future of Fire Service in GAMA is the absence of co-ordination in the plans and programmes of agencies like the Department of Urban Roads, Town and Country Planning Department, Metropolitan Works Department and others whose work impact on the delivery of fire services. Also important are the problems of:

(g) inadequate funds to support fire service operations,

(h) lack of maintenance of existing fire hydrants.

6.8 NATIONAL SECURITY

6.8.1 Defence Facilities

The National Defense Forces of Ghana, (the Army, Navy, and Air Force), each have bases in GAMA. The largest is that of the Army at Burma Camp. The Air Force has a small base near to the International Airport. There is also a small Naval Base near the harbour in Tema.

6.8.2 The Implications of the Military Bases in GAMA

The presence of the military installations and support services present both economic opportunities and constraints in the development of GAMA. While there is a tremendous economic advantage to be derived from the supply of some goods and services, it has also put further constraint on others that are already in short supply or unavailable.

6.8.3 Contribution of Defense to the GAMA

(a) Economy

It is very difficult to assess the economic impact of the Armed Forces in GAMA. However, it is possible to indicate the magnitude and sectors of the economy in which the Armed Forces have made significant contribution to the local economy. These include: employment; transportation; and procurement.

(1) Employment

The defense installations employ about 400 civilian employees on a permanent basis, mostly middle level personnel in administration, accounting, secretarial, and technical services, more than 50 percent of whom are women. There are also a number of labourers who are employed on a temporary basis. The permanent employees and their families are provided with free medical services, subsidized education at the first and second levels, paid vacations, and free higher education. No monetary figures are available to gauge the impact on the local economy.

(2) Transportation

Except military equipment and other sensitive materials, the military uses civilian transportation services to transport goods throughout the country where there are military installations. These include railways, buses, and road transportation. An important service is also given in the form of Operation Airlink where military pilots and planes are provided to Ghana Airways for domestic flights as well as to the Middle East to airlift military personnel for peace keeping purposes.

(3) Procurement

Hundreds of enterprises and thousands of individual traders are dependent on the various goods they supply to the military. The military contracts civilian suppliers for food, managing their messes, petrol and oil products, stationery supplies, and other supplies the military requires for its operation. The indirect (multiplier) impacts are much greater than the direct financial outlays on the purchase of such goods and services.

(b) Social Services

The military services also contribute to the social development of GAMA, principally in education and health.

(1) Education

There are 25 primary and junior secondary schools built and furnished by the services, accommodating 20,000 pupils (18,000 in Accra and 2,000 in Tema), 30 percent of whom are children of the defense's civilian employees and the public living in the area surrounding the military bases. The military pays close attention to the running and physical maintenance of the facilities, providing financial support from the Armed forces educational subvention administered by the Garrison Officer and incentives to the teachers who are employees of the Greater Accra Regional Educational Office.

(2) Health Service

There is a large military hospital in Accra and clinics at Teshie, Tema Naval Base, Michelle Base, Meadow Lanes, and Araka manned and financed by the Armed Forces and their personnel. The facilities are better staffed, equipped, and maintained than the civilian facilities. These facilities are open to the civilian population after the need of the military personnel and their families have been met.

6.8.4 Constraints upon Development

The presence of the military installations presents further constraints on certain goods and services already in short supply, such as land, housing, and infrastructural services.

(a) Land

Access to land is very difficult in GAMA. The three military installations including the military training school and the firing range on the coastal road to Tema occupy hectares of prime land. Burma Camp alone occupies hectares of land in one of the elected residential areas of Accra. Their presence is partly responsible for the land problem in Accra.

(b) Housing

There is an acute shortage of housing in Accra where the average occupancy is 3 persons per room and 23 persons per house. The military service can only provide about 50 percent of the housing needs of its personnel. The remaining 50 percent compete for housing with the civilian population in the open market, exacerbating the already limited housing supply.

(c) Infrastructural Services

There are vast resources of power and water to last well into the next century. But there are serious problems of distribution which can be further strained as a result of the extra demand imposed by the needs of the military installations. The capacities of the telephone lines, sewage and garbage collection services are limited. The addition of the military bases severely affects the availability of these services to other parts of the city, as priority is often given to the military bases.

On balance the contribution of the military installations far out weighs the constraints they impose on the provision of goods and services not available in sufficient quantities in GAMA. In order to overcome these problems, the military has undertaken a number of actions, including stand-by generators and "sewage farms", to mitigate the problems faced either by interruptions to or lack of these services. Arrangements are also being made with SSNIT to provide housing for the service personnel. In addition there are plans to abandon the firing range located on the main coastal highway between Accra and Tema, thus releasing a large piece of land for public or private development.

6.9 DISASTER RELIEF AND REHABILITATION

6.9.1 Organisation and Administration

The Ministry of Interior has ministerial responsibility for disaster relief and rehabilitation in Ghana. It operates through a 15-member National Disaster Relief Committee which comprises all Ministries. The committee was established in 1987 and is headed by a Chairman appointed by government. It has Regional Sub Committees headed by PNDC Regional Secretaries throughout the country. The need for and extension of relief services is channelled through these sub-committees. It is important to note that the Committee operates on an ad-hoc basis.

6.9.2 Functions

The Committee has responsibility to plan and extend relief and rehabilitation services to all sectors of the Ghanaian community who are distressed as a result of natural or man-made disasters like earthquakes, floods, fire, war and the like. It operates an annual budget of 5 million cedis for relief services. Its ad-hoc nature and limited funds constrain it to deliver relief services only, responding to distress calls as and when the need arises; it does not have the capacity to do rehabilitation of affected victims. In times of disaster, meetings of the Committee are convened to assess the nature of the problem and extent of support needed. Policy decisions are taken on the mobilisation of support. Appeals are then made to public organisations like the Armed Forces, National Fire Services and NGO's like the Red Cross, Catholic Relief Services among others, for both support and implementation of the decisions of the Committee.

6.9.3 Relief and Rehabilitation in GAMA

The Greater Accra Regional Sub Committee which should be responsible for GAMA is defunct. Its responsibilities for GAR and, GAMA for that matter, are consequently discharged by the National Committee. The need for relief services in GAMA has not been urgent. Apart from the major earthquake of 1939 which led to the demolition of substantial numbers of buildings and some major flooding problems in the late 1980's and early 1990's, there have really not been the need for relief services. The 1939 earthquake led to the building of estates at Mamprobi and Chorkor, among others; while the floods of the late 1980's led to extensive dredging of the Odaw stream.

6.9.4 Issues

Ghana has enjoyed relative freedom from natural and man-made disasters - at least at scales that do not warrant frequent and massive relief interventions. This in part, is accountable for the ad-hoc approach and non-serious commitment to relief and rehabilitation planning. However, there have been experiences in the recent past that should be indicators to the need for a national disaster relief and rehabilitation preparedness plan. Among these are the large scale bush fires of the mid 1980's, particularly 1983, and the resulting unprecedented famine in Ghana's history; the recent serious tribal conflicts in various parts of the country and cases of floods and storms which rendered whole populations of settlements homeless. Such a plan should be of benefit to GAMA from a number of view-points, including national security.

In the particular case of GAMA the need for relief and rehabilitation arrangements appear more urgent in a number of areas. They include the risks of:

1. Earthquakes: According to the Geological Survey Department, tremors are being recorded almost every week of late. The highest recorded was in 1991 and it registered 4 on the Ritcher scale. The fact that the last most serious earthquake occurred in 1939 and it is generally believed that such earthquakes have 40 years cycles, underscores the urgency. The situation is made even more critical if the large scale residential developments in the McCarthy Hill area, believed to be the epicentre of a possible earthquake in Accra, is considered.

2. Flooding: This is becoming an increasingly important problem in GAMA. Various residential communities such as Dansoman, Mataheko, sections of Darkuman and Odorkor and Alajo are subjected to severe flooding during the wet seasons and this poses danger to life and property. Although the AMA is trying to address drainage problems in the city to alleviate some aspects of the sufferings, a more comprehensive relief and rehabilitation arrangement is needed.

3. Slum Areas and Threat of Epidemics: In addition to population pressure resulting from high growth rates (8.6% p.a. in some communities) these areas lack social and economic infrastructure. The practice of disposal of liquid and solid waste under conditions of poor, choked or no drains, under-provided, and overcrowded public toilets; limited or no disposal points; coupled with the substandard housing conditions and limited access in these areas, are pointers to the serious threats of epidemics in GAMA.

4. Ignorance: People are generally uninformed about the dangers of earthquakes, epidemics etc. and therefore do not see the need for serious precautionary measures.

5. Lack of Funds: Limited funds and lack of appreciation of the urgency underscored by imminent risks of, particularly, earthquakes and epidemics in GAMA, have led to no effective planning and budgeting being made.

6. Absence of Standing Disaster Relief and Rehabilitation Body: The absence of such a body has contributed to a poor understanding of the nature of the risks GAMA faces and the steps that need to be taken in a preparedness plan to avert, mitigate and contain the situation when it occurs.

Chapter 7

URBAN MANAGEMENT

7.1 MANAGEMENT OF DEVELOPMENT

The process of urban development is one which involves executing myriads of decisions taken from the highest policy level on what to develop, to that of an individual deciding on the siting of a building and the materials to be used in its construction. There are many different management levels of decision making, and decisions made at one level will impact upon lower or upper order management decisions and vice versa. Not all decision making is vertical or related to a hierarchy, but ensuring that there are proper avenues for communication between decision making levels is essential to effective urban management.

There are nine broad management levels of decision making which impact on the urban development process in GAMA. These are:-

international community, central government, regional administration, local government, development agencies, business and corporate sector, non governmental organisations, traditional land owners and private individuals. Organizations or individuals at each level spend much of their time monitoring immediate higher and lower levels of management to lobby and secure resources, materials and political support necessary to carry out specific actions, projects and programmes.

7.1.1 International Community

The international community, comprising political, financial, trade and business sectors, has a significant influence upon investment in the national and local economy. These matters have been addressed in more detail in Chapter 3, the economy. The economy of Ghana in the international rankings is very small and therefore it is less able to compete for the external resources needed for development. This will always be a major factor influencing the rate of development and the planning process must recognize this.

Major international organizations (apart from Governments) influence management decisions in both the national and local economy. The IMF, World Bank, United Nations, African Development Bank, international donor agencies, and multinational corporations have a significant influence on public sector investment in GAMA and are funding most of the major infrastructure projects in the metropolitan area. The Ministry of Finance and Economic Planning is responsible for coordinating and monitoring technical assistance investment through the Public Investment Programme.

7.1.2 Central Government

The provision of government services and execution of development programmes is undertaken by the sector ministries, development agencies or specially constituted technical committee or task forces. Sector ministries also develop national policies, strategies and programmes to guide development in their specific areas of concern, such as health, education, roads, power, etc.

At the execution level, the policies, strategies and programmes of central government are implemented through various departments, State and other parastatal organisations under each ministry. In many cases this is delegated to the district office of the ministry or development agency. Each ministry co-ordinates the budgetary estimates of the organisations reporting to them and is supposed to coordinate development and the delivery of services.

The Government has established a National Development Planning Commission and this will bring about significant changes to the process for coordinating and managing funds for development by ministries in future. The Commission will be responsible for determining resources to be allocated to all levels of government - including state corporations. The finance ministry will continue to maintain responsibility for revenue collection and disbursement of funds.

Central government responsibilities in the management of development in GAMA include: ensuring that there are adequate land and funds allocated to the construction, maintenance and operation of facilities for government purposes, such as defense, the ministries; provision of land and engineering services for development; facilities for national cultural, recreational and civic purposes and international affairs such as facilities for diplomatic and consular missions. Government is responsible for determining standards, provision of engineering services, communal and judicial services, general security and emergency services. Government is also responsible for funding most of the public works programmes of the three assemblies in GAMA and supports salaries and other operating costs.

7.1.3 Regional Administration

The regional administration has the role of coordinating budgets and planning in the Greater Accra Region. Under the provisions of the National Development Planning Law, (yet to be gazetted) development plans prepared for the district assemblies will be submitted to the Greater Accra Regional Coordinating Council for consideration. A composite budget (including all district development plans and projects for the year) will be submitted to the National Development Planning Commission for approval. Funds will be released directly to the three assemblies in the metropolitan area for projects approved in the composite budget by the National Development Planning Commission.

The regional administration has in recent years played an important role in local development projects, being involved in programmes like TASIT (Transportation and Sanitation Improvement Task Force), the acquisition of sites for composite markets in the peripheral areas of GAMA, and improving sanitation and other public infrastructure. Under the provisions of the Local Government Law PNDCL.207 these responsibilities now pass to the district assemblies and the role of the regional administration will be one of planning and budget coordination for the district assemblies in the region.

7.1.4 Local Government

(a) Functions of Local Government

After the fall of the first republic the role of local government as a local democratic decision making body diminished. The responsibility for the provision of municipal services have been under the control of centralized corporations such as GWSC, ECG and Public Works Department. The intent of the Local Government Law, 1988 PNDCL.207 is to decentralize many management functions of central government and associated development or service corporations, by transferring responsibility back to the newly created district assemblies. In the case of GAMA, the Accra Metropolitan Assembly, Tema Municipal Assembly and Ga District Assembly now have greater responsibility for:

Overall development of the districts and ensuring the preparation and approval of development plans and budgets for the districts.

Formulation of programmes and strategies for the effective mobilization and utilization of the human,physical, financial and other resources of the districts.

Promotion and supporting productive activity and social development in the districts.

Initiation of programmes for the development of basic infrastructure and provision and maintenance of municipal works and services in the districts.

The development, improvement and management of human settlements and the environment.
Maintenance of security and public safety in co-operation with appropriate national and local security agencies.

Generation of revenue to facilitate effective discharge of their functions.

(b) Organisation of Local Government

Under the provisions of PNDC Law 207, 107 district and 3 metropolitan assemblies have been created in Ghana. The assemblies have a membership of which one third are appointed and two thirds are elected. An executive committee is appointed comprising no more than one third of members of the committee. In the Accra Metropolitan Assembly the executive committee is referred to as the Accra Metropolitan Authority. This executive committee or Authority is headed by an executive chairman or as is currently the case, a PNDC appointed secretary. Under the Executive Committee there are a number of sub-committees. For the Accra Metropolitan Authority these are:

Finance and Administration
Planning
Technical Infrastructure
Environment, Health and Sanitation
Economic Development
Justice and Security
Education and Social Welfare
Public Relations, Protocol and Mobilization

The Assemblies' Departmental structure comprises the:

Metropolitan/District Managers Department
Metropolitan/District Engineers Department
Metropolitan/District Health Department
Wastes Management Department
Roads Unit
City/District Treasurer's Department
Education Department
Legal Department

The metropolitan/district secretary, medical officer of health, and engineer are all members of the metropolitan/district planning committee. The district/metropolitan secretary is the chairman of the planning committee which is the statutory body responsible for planning policy and development control. The engineer, in addition to being responsible for works, is also responsible for issuing of building permits and certificates of occupation before new buildings can be occupied.

The roads unit is responsible for the design, construction and maintenance of roads. In recent past this unit was put under the Department of Urban Roads to increase its effectiveness. Such is the case for Tema and Ga. It has, however, reverted to the Assembly in the case of Accra.

Besides the main structure described above the Accra metropolitan area has been divided into six constituencies with sub district offices: that of Ashiedu Keteke, Ablekuma, Ayawaso, Okaikwei, Osu Clottey and Kpeshie. These offices have no planning and executive powers. They facilitate revenue mobilization, performance of public health services and minor local government administration at the local/constituency level.

The regional office of the Town and Country Planning Department functions as the secretariat for planning authorities for the AMA, Tema Municipality and Ga district and is concerned with functional and spatial integration of development. It has the responsibility for:

- the formulation of goals and standards relating to the use and development of land;

- preparation of comprehensive development plans for the districts and designs of detail plans and proposals to direct growth and development of areas within the districts;

- the coordination of the diverse types of physical development promoted by various departments and agencies of Government and private individuals;

- provision of various forms of planning services to public authorities and private developers aimed at securing a good measure of health efficiency and order in the physical environment.

It is important to note, however, that owing to weak internal capacities of metropolitan/district assemblies the lack of co- ordination of plans and programmes of development agencies and land litigation problems, enforcement of development control and cordinated development have not been very effective.

7.1.5 Development Agencies

The land development industry in Accra is dominated by State corporations and organizations. The contribution by the private sector, except in respect of land delivery, is minimal. The organisations involved in the management and execution of development in GAMA include:

Ghana Water and Sewerage Corporation
Electricity Corporation of Ghana
Post and Telecommunications
Department of Urban Roads
Ghana Highway Authority
Survey Department
Lands Commission
Land Title Registry
Tema Development Corporation (Tema only)
Technical Services Centre
Bank for Housing and Construction
Land Valuation Board
Ghana Education Service
Stool Lands Boundaries Settlement Commission
Architectural and Engineering Services Corporation.
Town and Country Planning Department
State Housing Corporation

Generally these development agencies are responsible for one or more of the following functions;

Land administration and management
Infrastructure service design, delivery and maintenance.
Housing delivery
Social services delivery
Planning

7.1.6 Business and Corporate Sector

The business and corporate sector makes a very important contribution to urban development. It is involved in manufacturing, wholesaling, retailing, real estate development, and significantly contributes to the delivery of education and health services. It comprises companies, partnerships and individuals whose funds are generated from private sources viz. private savings, funds accruing from shares, loans and debentures from financial institutions. Among the business corporations playing a major role in development in the metropolitan area are banks and (to a lesser extent) the insurance companies which provide funds, the Social Security and National Insurance Trust (SNNIT)(which is the largest developer of houses) large manufacturers and producers such as Valco and the entrepreneurial merchants.

The business and corporate sector is now recovering after years of decline and subsequent flight of capital from the country. The sector is expected to play a more dominant role in the future, but it will be many years before the capital base of the business sector is increased sufficiently to take over the dominant role played by the public sector in the development process. Most businesses in the private sector face cash flow problems and this allows very little capital to be invested in plant and equipment to expand operations or to prefinance development.

7.1.7 Non Governmental Organizations

There are a large number of non governmental organizations (NGOs) which play an important role in small scale development projects in the metropolitan area. Some are supported by international bodies, but the majority are organizations of political, religious or humanitarian leanings which are supported by local fund raising activities. NGOs play a major role in the provision of community and social services such as schools, markets, clinics, etc. They generally operate with a less formalized organization structure than business and government organizations and tend to be very efficient in the delivery of services.

7.1.8 Traditional Land Owners

Traditional land owners (stools and families) have a significant influence on the land development process in GAMA. Over 90% of land currently supplied for housing derive their origin from such traditional sources. There are serious problems facing the land delivery system which have been discussed elsewhere in this volume.

7.1.9 Private Individuals

Collectively, individuals are the largest contributors to the development process in the metropolitan area. This factor is often not appreciated by those involved in policy decisions about development. The higher levels of management determine the ground rules and guidelines by which individuals make decisions to develop land for housing, business, etc. And collectively the decisions of individuals have a direct impact on the success or otherwise of planning and business strategy at higher levels. Thus the scope or choice that individuals have to develop in the metropolitan area will have a strong bearing on the rate, form and sustainability of development which takes place in GAMA.

7.2 URBAN MANAGEMENT ISSUES

7.2.1 Lack of Defined Responsibilities in Organizations

A major problem facing the management of the metropolitan area is the lack of clearly defined functional responsibilities within the service and development agencies. This is an important issue with respect to maintenance - especially of public assets.

The central government departments and parastatals also maintain obligations to sectoral ministries and tend to see local government as more interfering than assisting. Thus many projects and programmes sanctioned at the sectoral ministry agency level are implemented without reference to local government. In the particular case of GAMA ministries become entangled in the process, and the responsibility for implementing actions becomes even more confusing. This often results in recourse to government at the highest political level to have relatively simple matters resolved.

The lack of clearly defined responsibilities within government, local government, the service and development agencies leads to departmental struggles, numerous disputes, duplication of effort, wasted expenditure and resources, resulting in endless delays in the development and service delivery process. Some of the problems are created by a lack of clarity or poor legislation. Most are the result of policies and practices which have been adopted over the years by more dominant agencies in order to ensure that their organizations' objectives are met. The fact that this causes great disruption to other organizations and the community is of little concern to them. There is a need for a comprehensive review of service and development agency legislation and organizations, to ensure that infringing, overlapping and inappropriate responsibilities are removed.

7.2.2 Coordination

There is no overall coordination mechanism for ensuring effective delivery of services and development in the metropolitan area. Tema Development Corporation has overall responsibility for the development of Tema, but the corporation currently has serious cash flow and management problems which have effectively made it non-operational. There are several organizations which have responsibility for coordinating components of development and service agency activities, such as the assembly planning committees, the regional administration, Project Management Unit, of the PIP, Ghana Investment Centre and the Technical Services Centre. However, there is little or no linkage between these coordinating bodies.

For effective management of development in the metropolitan area there should be at least three levels of coordination. These are policy, technical and implementation or project management. There are numerous committees and boards set up to determine policy, but the lack of an overall plan and strategy for urban management means many of the policies set by individual agencies and organizations bear no relationship to each other. The net effect of this is that implementation of policies through various technical and implementation stages is never carried through in a coordinated manner and this results in haphazard development, half completed projects lacking adequate services to operate efficiently and community facilities sited in the wrong locations.

At local government technical level the planning committees in GAMA are supposed to ensure that technical aspects of developments are properly coordinated. However, the powers vested in the planning committees by law are not sufficient to ensure that actions to be undertaken by a development agency to ensure completion of a project are met. At a lower technical level there is a total lack of multidisciplinary coordination between professional and technical officers in different organizations. Professional and technical staff are dependent on directors of departments disseminating information, and in many case this does not filter down to the same level within the organizations involved in a project. Thus professional and technical officers in development agencies and service organizations make decisions without being fully informed. For coordination to be improved at the technical level much more use must be made of informal technical meetings, discussions, project teams and information routing systems.

One of the most serious and expensive areas of coordination failure is at the implementation or construction stage. Every year serious damage occurs to underground and surface infrastructure as one agency commences work unaware that the services of another agency are buried where new works are proposed. The cost of replacement and severing of services is very high. The problem arises because of the lack of readily accessible information about location of services, availability of materials, release of finance and technical matters. In the case of supply agencies insufficient or excessive stocks or supplies results in shortages or wastage. These are all the result of poor project management and a lack of coordination.

2.3 Planning

anning is a tool designed to allocate resources in order to achieve specific objectives or expected outputs. e lack of planning in the metropolitan area has been one of the major contributors to the problems outlined ove. Planning in the metropolitan area falls into a number of disciplines, with responsibility vested in many fferent agencies and organizations.

) Financial Planning

he Ministry of Finance and Economic Planning is responsible for the national planning and the release of unds for services and development organizations. The Public Investment Programme (PIP) is a document hich sets out intended public or capital works investment for the country. Projects for the metropolitan area re listed in this document. The PIP sets the expenditure ceiling for all capital works and other services which re dependent on government approved funds. The budgets set the limits on operational and other ongoing osts for ministries and development agencies.

major problem in financial planning which affects capital works in the metropolitan area is the timely release f funds. In many cases projects are dependent on multiple sources of funds from ministries, agencies or overnment funded institutions. The lack of coordinated budget planning often results in funds being released r a project by one agency and not by others. In other cases funds allocated are not spent because they are ependent on work being executed by another agency beforehand. This often results in funds for a project eing taken from a department budget the following year and is one of the reasons why so many multi-agency rojects are abandoned.

b) Town Planning

e Town and Country Planning Department functions as the Secretariat for the AMA and the other two district ssemblies in GAMA. It has responsibilities for:

) Preparing Town Planning Schemes

The Department usually initiates the preparation of a town planning scheme which is followed by discussions with affected land owners, the community and/or expected beneficiaries, state and parastatal agencies. The scheme is submitted to the metropolitan/district planning committee for approval. Once accepted, the scheme is then deposited/advertised and displayed publicly for three months for comments and reactions, articularly from those whose proprietary interest are affected. After the three month period, the scheme is inalized, taking into consideration comments made, and granted statutory approval.

There are major problems with the current process of preparing and approving town planning schemes. Many schemes are prepared after development has taken place, there are no standards or procedures for ensuring consistency in plan preparation, plans are too detailed and inflexible and the approval process takes far too long. The Town and Country Planning Department does not have the resources necessary to prepare planning scheme layouts and if they did the costs are not recovered from those who benefit. Many problems with town planning schemes could be solved with the adoption of new planning standards, guidelines for preparing new simplified planning schemes, subdivision plans and by fully recovering planning approval costs directly from applicants.

(ii) Development Control

The Town and Country Planning Department prepares planning schemes, processes planning applications and makes recommendations to the planning committee. It has very little authority to manage development once it has occurred. The building byelaws of the metropolitan and district assemblies are the basis for enforcing control upon development which is carried out by the Engineer's Department of the Assemblies.

This separation of the functions of planning and enforcement is a real weakness of the existing development control machinery.

There are several other reasons why development control has proved ineffective. The planning law prepared in 1945 is out moded, there has been a lack of political and judicial will to enforce provisions of town planning schemes, enforcement is not consistent, few people have any knowledge of the provisions of plans or the restrictions they impose on development and there is simply not enough manpower resources to enforce the provisions of the law. There is a need for a less ambiguous system of development control which transfers responsibility for managing development back to community leaders. This should be supported by strong legal backing and clearer directives in planning information given to the public.

(iii) Planning Administration

There are over 100 planning schemes in the GAMA at various stages of preparation and approval. Few of these schemes have been reviewed since they were prepared, and most were out of date before they were approved. The procedure for processing planning applications is also bureaucratic, bringing about long delays in the approvals. Few developers, are fully aware of the correct procedures to be followed in gaining straight-forward planning permission. There is a need to review and simplify the whole process of obtaining planning permission for development.

(c) Local Economic Planning

There is very little appreciation of the need for local economic planning in the GAMA. This is partly the result of the centralized political structure which has been in place over the last 20 years and the absence of skilled personnel to prepare such plans. The absence of economic plans, which set out strategies and incentives for development, poses serious problems for investment, especially business, infrastructure and social services.

(d) Social Planning

Social services planning has been severely neglected in recent years and as a result no social service sector is capable of meeting the demands placed upon it. While it is recognized that resources needed for education, health, etc, have been less than sufficient, rationalization of resources using social planning would have prevented many of these services running down to the extent which they have. Government has realized the need to strengthen social services planning capacity, but the sector is still encumbered with major structural adjustment problems and lacks clear policies, strategies and priority works programmes. These matters will have to be examined closely in the process of transferring social service departments to local government in future.

7.2.4 Organization of Local Government

For many years local government has been weak, with many of its traditional responsibilities being undertaken by State or parastatal organizations. PNDC Law 207 is designed to restore the traditional role and responsibilities of local government. The PNDC law sets out the various departments of the district and metropolitan assemblies, however, the responsibilities of the various departments are not defined. There are serious problems within the AMA over which department is responsible for carrying out particular duties and in the disparity of resources allocated to the different departments and between the AMA and the development and service agencies. There is a need for a much more clearly defined organization structure within the AMA and other district assemblies, and for the functions of departments and responsibilities of officers to be defined clearly. This is essential if the district and metropolitan assemblies are to deliver the services expected under PNDC Law 207 in an efficient and effective manner.

7.2.5 Resource Management

Over and under utilization of resources is a serious problem which results in considerable wastage and expense annually. Improved management of manpower, finances, materials, technical and natural resources would significantly reduce these losses.

(a) Manpower Resources

The GAMA economy has a severe skill deficiency in the professional and technical levels, but utilization of manpower resources overall is very poor. Restructuring of the civil service has significantly reduced man power levels in the government sector, however this has not brought forward improved efficiencies. The lack of reward is a major constraint on the efficient use of manpower resources. This must be recognized as the most significant management impediment to improving administrative and product output.

(b) Financial Resources

Some issues affecting financial planning and allocations have been discussed elsewhere *(see Financial Planning 7.2.3 (a))*. However, a very serious issue in financial resource management is the problem of delayed payments to, and prefinancing requirements for, suppliers, developers and other concerns awarded government contracts. These two practices have a serious impact on the cash flow of businesses and delivery times. There is a total lack of understanding on the time value of money and the cost that delayed payments have on delivery. Some prefinancing (with conditions) and a prompt payment system must be introduced as part of improved financial resource management practice if delivery times and costs are to be reduced.

(c) Technology Resources

The range of technology used to facilitate development, process information, deliver services and monitor the environment varies significantly between organizations. Unfortunately most organizations are operating using old and inefficient technology - which in many cases has been idle for long periods awaiting repairs. The mismatch of technology between organizations poses major problems to the overall delivery process. There is a need to ensure that there is greater uniformity and linkage in technology systems between dependent agencies especially in the areas of land, infrastructure, finance and town planning. The use of appropriate technology is discussed below.

(d) Supplies

One of the most serious and costly delays to the development process and service organization delivery system is that of timely delivery of supplies. In many cases whole projects are held up for months because of minor parts which were not ordered. A similar situation occurs when equipment or delivery systems break down. The lack of comprehensive supply management systems which ensure material resources and supplies are delivered or are available on time or on call needs to be addressed if development, delivery and operational costs are to be reduced in future.

(e) Entrepreneurial Resources

There is a serious lack of entrepreneurial skills in the business, commercial and government sectors. This acts as an impediment to development - especially in the manufacturing and export sectors. There are historic reasons why entrepreneurial resources are deficient, but creating an environment favorable to the development of entrepreneurial skills is important. Entrepreneurial skills are specifically required in fields of product promotion, product development, innovative financing and product assurance.

7.2.6 Information Systems

The development and investment industry depends on information supplied through a number of sources: census, publications, reports, investigation studies. The speed, reliability and extent to which information is transmitted is also critical to decision making. However there are two problems: (i) lack of information and (ii) the non availability of data in a manageable form in some sectors of the economy. Most organisations keep records but seldom are these aggregated or presented in a usable form. The slowness and inefficient delivery of census and economic material is a major constraint on planning and marketing in the economy.

Dissemination of information within organizations is a major constraint on administrative efficiency. In many cases junior officers remain uninformed by senior staff on matters that are essential to the conduct of their work; lower order staff therefore rely on the informal information network. Few organizations have well developed information systems and this leads to internal defficiencies - especially repeated work, delayed delivery and duplication.

The lack of good systems for the collection and dissemination of information in the GAMA acts as an impediment to economic growth, effective planning and decision making. The serious problems with the lack of maps and plans discussed elsewhere in the report can be overcome by making use of spatial databases and geographic information systems. For other quantitative data, more modern technologies and computer applications must be applied.

7.2.7 Project Management

Project management is a skill which involves knowledge and expertise to ensure all elements of a delivery process are put in place on time, within a budget and in accordance with a set of design or delivery requirements. The severe shortage of skilled project managers in the metropolitan area adds substantially to development, efficiency and delivery costs each year. Coordination at the implementation level will only be improved by increasing the number of project managers and more effective planning.

7.2.8 Appropriate Technology

The need to update technology to support the efficient operation of government and business is recognized by both the public and private sectors. However, the appropriateness of some of the technology in terms of the supporting infrastructure, operational costs and use are often overlooked. In many cases technology introduced is not appropriate, and less sophisticated applications should be adopted. In other sectors, such as the construction sector the techniques used are outdated and expensive. For example, the use of standardized reusable moulds for concrete constructions, would avoid expensive, job specific construction of mouldings which are disposed of after use. There are many others which add significantly to the total cost of development works. On the other hand, elaborate computer systems which do not have the technical and service back up located in areas with poor electricity are again inappropriate technology applications.

The introduction of procedures to standardize and limit the range of equipment, adoption of national design standards, adoption of reusable technology products and ensuring backup support systems for introduced technology is essential to making the best application of new or locally developed technologies. While the above suggestions are national concerns, organizations operating in the metropolitan area would also significantly benefit if the above measures were adopted in individual departments or business enterprises. The initiative, however, must come from government.

7.2.9 Maintenance and Monitoring

The lack of proper maintenance is a serious problem facing every sector of the economy. Assets are left to deteriorate and run down because no one is prepared to take responsibility for maintenance or the funds are not allocated for this purpose. In the case of buildings and infrastructure these assets are being left to deteriorate rather than appreciate resulting in a serious run down of the capital wealth base. All facilities and equipment require maintenance, whether it is emergency, routine, or periodic. There are few organizations which have easy to follow maintenance procedures. Where organizations have adopted such procedures they are often frustrated by a lack of supplies, expertise and or workmanship which prevents maintenance taking place.

To resolve problems of maintenance will take time. It is not just the physical process of repairs: it is an educational one as well - making individuals realize the benefit that regular maintenance can have on the protection and value of property and assets. The preparation of maintenance programmes by all organizations is an essential step towards improved maintenance. There must also be provision made for maintenance in all budgets and instructions given to ensure maintenance - especially on equipment - is carried out.

Monitoring is an important component of preventative maintenance. It involves checking performance against projected outcomes such as budgets, production plans and programmes and the analysis of historic events and the impact these have on the environment studied. Little attention is given to monitoring, and as a result equipment or events are allowed to continue to the point where breakdown occurs or emergency measures must be taken to avoid catastrophes occurring. The development of simple monitoring programmes in organizations for equipment operation and performance, trend analysis, change in environment, etc, would not only provide better information for planning but also for maintenance.

7.2.10 Law Enforcement

The apparent unwillingness and inability to enforce the provisions of legislation is one of the reasons urban development has got out of control in the metropolitan area. In other cases - especially land issues - perverse judgments only seek to undermine the intention and ability to enforce the law. The need to review much of the legislation affecting urban development has been outlined elsewhere in the volume, and must be reiterated again. There is, however, a need to place less emphasis on using the judiciary system to enforce the provisions of legislation. Government simply does not have the machinery to enforce the law. Delegation of responsibility to the community level to enforce provisions of legislation, with recourse to the courts if necessary, would ensure more effective control over development. This procedure will be more effective than centralized policing. It is also more likely that the intent of the law will be upheld.

7.2.11 Conclusion

Many of the matters discussed above relate to inherent problems facing management in Ghana as a whole. Nevertheless, the problems of planning, coordination, project management and maintenance exist at the metropolitan, district organization and business levels. These management issues can be addressed separately by organizations and are not all totally dependent on national directives. With the growth of the regional economy exceeding 5% per annum, management practices must change if efficient use is to be made of the limited resources available for development. Changes in management will be slow, but corrective measures applied should be directed to areas that remove the most immediate bottlenecks in delivery systems. What is necessary is an overall programme to guide changes in management and this must come as a national directive.

7.3 ALTERNATIVE MANAGEMENT STRUCTURES FOR GAMA

The GAMA area is experiencing a period of rapid urbanization with development encompassing three local government districts. The AMA and the Tema and Ga District Assemblies are responsible for the management of development in their respective areas, however, they have very limited expertise and resources to cope with the problems of urbanization and in particular, metropolitan management. This suggests there is an urgent need for a strong mechanism for coordination and cooperation on matters of metropolitan planning, management and development so that the limited resources of these assemblies can be better utilized. This could be achieved under a single or multiple local government structure for the National Capital District or a National Capital Authority managed by government. Possible organizational frameworks which could improve urban management in the metropolitan area are discussed below.

7.3.1 Joint Development Planning Board.

Section 14 of the as yet to be promulgated National Development Planning Law provides for the designation of special development areas and the establishment of Joint Development Planning Boards to be responsible for the formulation of development plans for such areas including social, economic, spatial or sectoral policies, as well as the mobilization of their human and physical resources. The National Development Planning Commission is responsible for designation of the special areas and establishment of the Joint Development Planning Boards. Government is now taking steps to set up a Joint Development Planning Board for GAMA. This is an important step which should hopefully ensure more coordinated planning and development between the three districts.

The establishment of a Joint Development Planning Board, however, will not solve the long term problems of disparity in the resources, expertise, levels of investment, tax base and political power between the assemblies and the development agencies. The current political structure of the assemblies also creates a gerrymander (disproportionate representation) between the districts. While these disparities exist, it will be difficult to implement many of the proposals contained in a development plan. Rationalization of the existing metropolitan local government structure is necessary to remove these disparities and to establish a long term coordinated development programme for the metropolitan area.

7.3.2 Accra National Capital Assembly

The setting up of one large assembly for the National Capital District by amalgamation of the three district assembly areas of Accra, Tema and Ga is an organization structure that has many merits. The area could be given a capital territory or district status and be administered by a National Capital Assembly comprising a legislative assembly and executive with departments and executive committees (see Figure 7.1). Department heads would be executive appointed but approved by the assembly.

The amalgamation of the three assemblies into one large assembly has significant benefits. One large assembly would have responsibility for overall planning and management of development and delivery of services in the national capital. There would be costs savings in administration, better utilization of resources manpower and skills, and better control and coordination of development. A national capital assembly would also avoid the problem of allocation of resources on a proportional basis to districts, rather than on need. For example, Ga district has a greater need of funds for roads and infrastructure in its urban area than AMA, but if funds were allocated on a population basis, there would be very few services delivered to Ga district. This district would become increasingly disadvantaged over time.

There are other disadvantages to amalgamation. It will reduce the level of political representation in Ga and Tema district; it will effectively dissolve the Greater Accra Region and is likely to be opposed by the Greater Accra Regional Administration and other interested groups. Amalgamation may be viewed as running contrary to the process of decentralization and be seen outside the region as building a powerful political structure which will take more than its fair share of the nation's resources.

The disadvantages can be off set to a certain extent by creating additional sub district areas within GAMA, introducing additional sub district councils which could formulate local plans and administer decentralization of some functions of local government. For example, sub district council offices would handle services such as planning, building control, revenue collection and some social services. This framework would encourage broader representative local government than currently exists in the AMA and more effective delivery of services than at present.

(a) Political Structure of the National Capital Assembly

There are two political options which could be adopted for the structure of the national capital assembly.

(i) Democratically Elected Assembly and Executive Head

This option would provide for a totally democratically elected legislative assembly. The chief executive would be elected separately and be responsible for the administration, planning, budgeting, operations and management of the National Capital Assembly. The chief executive would have Secretary of State status to ensure national issues in the capital city are dealt with without continual recourse to central government. Most countries have not found the need to elevate the head of the assembly to such a position, but have nominated a Minister of State for the national capital who raises matters of national concern with central government.

(ii) Partially Elected and Ex-officio Appointed Assembly

The second option provides for an assembly comprising predominantly democratically elected members, with some ex-officio appointments to represent national government, services sector and traditional land owners interest. This is currently the practice under existing local government legislation. Like the above, the chief executive would be elected and could have the status of a sector secretary or minister of state or alternatively a minister of state could be appointed with whom the chief executive would liaise. The executive structure would not change under this option, with appointments for boards, committees and heads of Departments approved by the legislative assembly.

The advantages of the first option are greater political autonomy and accountability of assembly members to the electorate. The advantage of the second option is having sector ministry and service agency representation on the assembly and is more likely to improve interagency coordination on policy formulation, planning and implementation. The first option is preferred in the long term as it assures accountability, but the realization of the many difficulties involved in restructuring and transferring departmental responsibilities to local government deems the second option more expedient in the short term.

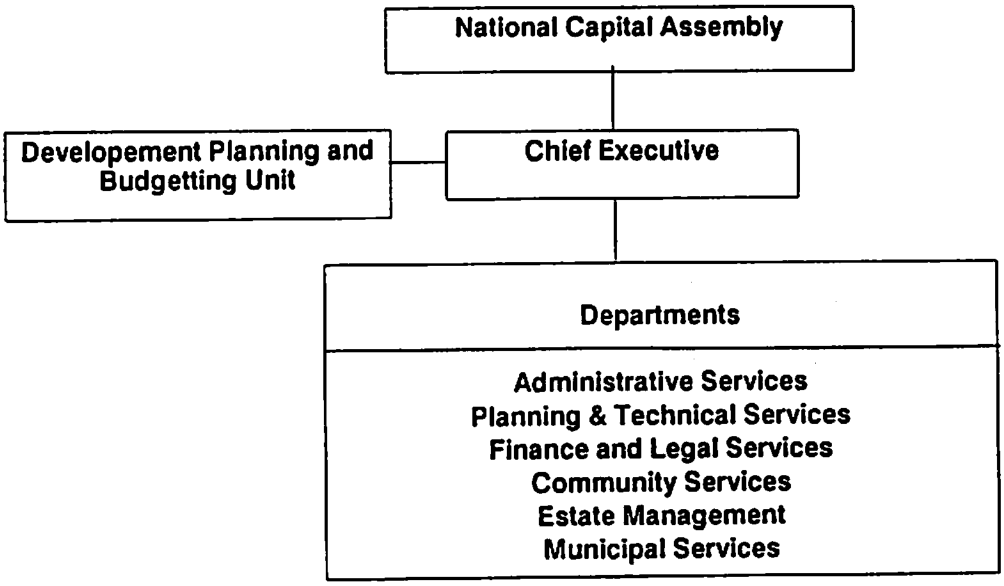
National Capital Assembly
Developement Planning and Budgetting Unit
Chief Executive
Departments
Administrative Services
Planning & Technical Services
Finance and Legal Services
Community Services
Estate Management
Municipal Services

Fig 7.1 Proposed organization structure for the National Capital Assembly

(b) Organizational Structure

The organizational structure of local government for the national capital assembly would involve the setting up of departments and committees directly under the chief executive. Each department would have an appointed director and a committee comprising elected members of the assembly, representatives of the relevant sector ministries and services agencies and technical staff. *(See Figure 7.1 for proposed structure).* The committees would meet regularly to determine policy, issue approvals and formulate plans and budgets. These would be submitted to the chief executive for consideration by the assembly. The chief executive would have a secretariat (The Development Planning and Budgeting Unit) which would coordinate matters raised by the committees and departments.

The organization structure proposed would strengthen the role of local government in the national capital. Currently, there are too many agencies and organizations acting independent of the local government. This undermines the authority of local government, which should be the principal coordinating body for managing development and delivering services in GAMA.

It is recognized that there will have to be a transitional stage for the transfer of service agencies to the National Capital Assembly. Services such as health and education will continue to be delivered by the subregional offices of the sector ministry for some time to come, as it would take time to build up the capacity of the assembly to take over these functions. However, planning could easily be transferred to the development planning and budgeting unit and community services board. It will take up to 5 years to effect transfer of responsibility for some of the major sector ministry departments.

7.3.3 National Capital Commission

An alternative organization structure is that of a national capital commission (NCC). Under this structure the AMA, Tema and Ga assemblies would come under an umbrella organization, the national capital commission. A commissioner would be appointed as the chief executive responsible for overall coordination of planning and budgeting for development and delivery of services. The respective district assemblies, decentralized sector ministries and service agencies would be responsible for executing development, the delivery of services and maintenance. The commission could also play an active role in the development process through the establishment of a development corporation.

The benefits of the NCC are that the existing local government structure remains in place and service agencies retain responsibility for execution of works and delivery of services. Their planning and coordination functions, however, would be handled by the NCC. The structure would encourage the districts to prepare more localized plans, but within an overall framework set by the commission. There is flexibility in the structure to create additional district assemblies within the national capital district if this was desired.

The disadvantage of the NCC is the establishment of an organization above local government which would either be under the regional administration or competing with it. This would weaken the authority of the three districts, and especially the role of the District Secretaries. A multiple assembly structure will also involve significant technical assistance to enable the three assemblies to carry out their functions and responsibilities. This assistance will require significant capital investment for each assembly in buildings, equipment, technology and manpower resources.

(a) Political Structure

The organizational structure for the commission would be different to that of the National Capital Assembly. However, like the National Capital Assembly there are two options on the nature of representation.

(i) Elected Commission

This option involves elected persons only on the commission. Members could be directly elected or elected from members of the respective assemblies in GAMA. The basis of representation would have to be determined. The chief executive of the Commission, the Commissioner, would be elected, but would not have the status of a Minister of State. There would be appointed a Minister of State or Secretary for the National Capital with whom the Commissioner would liaise on State related matters.

(ii) Composite Commission

Under this option the Commission would comprise members who have been elected to district assemblies and ex-officio members from sector ministries and service agencies. To preserve the principle of democratic representation, the majority of members on the Commission would be district assembly appointees. The Commissioner would be elected or appointed according to the option selected and would have the status of a Sector Secretary or Minister of State for the reasons outlined in the NCA structure. The advantages and disadvantages of these two structures are similar to those outlined in the national capital assembly.

(b) Operation of the Commission

The role of the commission would be to approve plans and budgets and ensure coordination of development and the delivery of services. The commissioner would be responsible for operation of the commission and for bringing matters before the commission. The commissioner would be supported by a small secretariat involved in supporting the various committees, development planning and budgets. The commissioner would liaise with the central government through the secretary of state. The execution of works and delivery of services would be undertaken by the respective district assemblies, sector ministries and service agencies. The commission would have a small project management unit to monitor outputs of the plan.

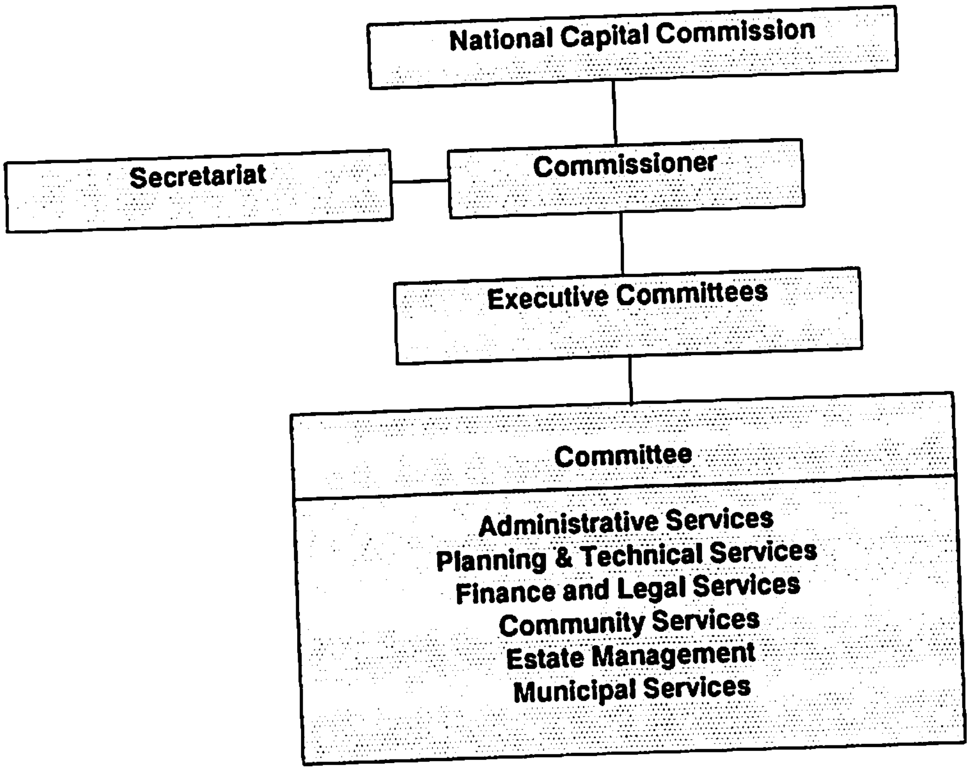
National Capital Commission
Secretariat
Commissioner
Executive Committees
Committee
Administrative Services
Planning & Technical Services
Finance and Legal Services
Community Services
Estate Management
Municipal Services

Fig 7.2 Proposed National Capital Commission Structure

While the NCC structure has been successfully adopted in many countries for large metropolitan centres, it involves a high degree of organizational support and cooperation to work. Given the disparity in resources between the assemblies and the service agencies, the inherent problems that already exist with the lack of coordination between sector ministries and agencies and the perceived weakening of the role of the assemblies within the National Capital District there will be problems in making the NCC work. It is therefore not recommended as the management framework for the national capital city.

7.3.4 National Capital Development Authority

A fourth alternative is the setting up of a National Capital Development authority. This would be government run authority similar to that set up to develop Tema. The authority would plan and develop land, handing over infrastructure to the service agencies to operate and maintain. Membership of the authority would be by appointment. Such authorities have been successfully used to manage the development of new national capitals in several countries, however they are not particularly well adapted to national capitals that are well established.

There is a tendency for national capital development authorities to become very large and powerful organizations holding a monopoly on development. Because such authorities are often not democratically elected bodies, they are not as accountable to the public and changes in policy are hard to effect. National capital development authorities are prone to inefficiencies, corruption and direct political interference. For these reasons many countries have taken the decision to wind up their capital development authority and replace it with local government.

7.3.5 Conclusion

The lack of coordination between, sector ministries, service agencies, the AMA and district assemblies within the metropolitan area on development matters makes it almost impossible to achieve efficient and effective delivery of services. The current local government structure in the metropolitan area is weak, the service agencies highly centralized, independent and generally inefficient. A new approach to manage the national capital city of Ghana is now required.

There are four options put forward to improve the management of the nation's capital city. The amalgamation of the districts of Accra, Tema and Ga into one large national capital district with an elected national capital city assembly is the recommended urban management framework for the Greater Accra Metropolitan Area. It is however recognized that a joint development planning board is a necessary interim arrangement.

Strong and well managed local government is essential to effective planning and development of the nation's capital city. This will not be achieved without transferring some powers and responsibilities currently vested in sector ministries and agencies to local government. This will not be easy, given the reluctance of powerful centralized agencies to devolve and divest responsibility. However, if this is not done, it will become more difficult for the existing urban management structure to ensure efficient delivery of the services and amenities to the greater metropolitan area.

Chapter 8

RURAL ENVIRONMENT

8.1 INTRODUCTION

The land which surrounds the urbanized parts of GAMA is an important resource, not only for meeting some of the basic requirements such as food, fuelwoods and construction materials for the metropolitan area, but for the long term needs of land for urban development, its water supply and recreational requirements. Many parts of the rural area are being over exploited through excessive clearing and cultivation, experiencing sporadic development, along road corridors and speculative developments in advance of the urbanization process. The rural area's infrastructure and services are poorly developed and revenue collected from taxes and other sources is insufficient to cover the cost of even basic community facilities. The following review describes the characteristics of GAMA rural area, its relationship to the metropolitan area and issues affecting its future development and conservation.

8.2 THE PHYSICAL ENVIRONMENT

The rural area of GAMA covers 96,135 ha, of which 11,333 ha are in Tema District, 4,846 ha in Accra and 79,956 ha in Ga District. This represents about 74 percent of the total area of GAMA. It incorporates a triangular area at the western end on the Accra coastal plain and the central catchment area of the Densu River and tributary streams. The Akplarku Hills form a divide between these two geographic areas. The topography varies from flat to gently rolling terrain with some isolated hills. The Weija lake lies on the south-western boundary. The land has a general elevation of about 75 m 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.

The vegetation of GAMA consists of coastal shrub and grassland, where once existed a forest which provided material for constructing canoes. However, constant felling of the trees, bad farming practices and annual burning have altered the vegetation from "dry forest" to the present grassland. The vegetation as it exists now is made up of thicket and grass. The thicket which occupies a corridor occurs more commonly in the western outskirts and in the north towards the Aburi hills. It consists of dense clusters of small trees and shrubs which grow to an average height of 4 m with little grass. The grassland vegetation forms part of the coastal Savannah. The grasses are a mixture of species found in the undergrowth of forests and are short, rarely growing beyond one metre.

There are two forest reserves in and around GAMA: Achimota Forest; and Dechidaw Forest near Afienya, north of Tema. The former, a plantation forest reserve, was planted in 1924, but had been dwindling in size over the years. In 1969 it covered 74 ha, but in 1989 it was only 36.5 ha. The Dechidaw Forest-Reserve is smaller, and served until recently as a national habitat and protective watershed for the Dechidaw catchment. The Shai Hills to the north of Tema but outside the GAMA area has an extensive nature reserve. The rural area contains two important wetlands, Densu Delta and Sakumo lagoons. Both these lagoons provide habitats for over 20,000 species of birds many of which are migrant and endangered species. The two lagoons, plus the Korle Lagoon are being considered as Ramsar sites of environmental significance as defined by the Ramsar Convention of which Ghana is a signatory.

8.3 POPULATION

According to the 1984 census, the population of the rural areas of GAMA was 133,739 (Ga - 107,994, Accra - 17,264, and Tema - 8,481), or 10.3 percent of the total population of GAMA. Over 79% of the total population of Ga was considered rural while those for Accra and Tema were 1.8% and 4.4% respectively. Women represented 49.2 percent of the total population of rural GAMA (49.6% for Accra, 49.2% for Tema, and 49.0% for Ga districts).

Taking the three districts as a whole the populations of Tema and Ga Districts grew at faster rates than Accra District. Between 1960 and 1970, the populations of Accra, Tema, and Ga Districts grew by 5.1%, 14.2%, and 6.9% respectively, while the growth rates for 1970-84 period was only 3.1%, 4.5%, and 5.3% respectively. The rate of population increase in the rural areas of the three districts however, grew much slower than that of the urbanized areas. In Accra it was 3.3% pa in Ga 4.05% pa and Tema 3.57% pa. While these figures are slightly higher than the natural population growth rate, most of the growth has been absorbed into smaller settlements and towns along the main regional roads. There has been a slowing down in the growth of villages due to increased levels of migration, with some small settlements experiencing little or no change in population between successive censuses. The slow down in the growth in rural population centres in GAMA away from the principal access roads is expected to continue in future. The reasons for migration can be attributed to rural poverty, lack of services, employment opportunities and perceived economic benefits of urban centres.

8.4 LANDUSE

The most important land uses in the rural areas of GAMA are agriculture, fishing, water storage, forestry and industry. There are over 630 rural settlements in GAMA, ranging from a few houses to centres with over 5,000 population. The land used for settlement is a tiny fraction of the total rural area. It is estimated that over 75 percent of the land is used for agricultural purposes where the main crops are maize, rice, cassava, and groundnuts, and vegetables such as beans, pepper, okro, garden eggs, and tomatoes. There is also an extensive cultivation of pineapples, yams, mangoes, bananas, and other crops. Livestock production such as cattle, sheep, and goats and non-ruminants like poultry, pigs, and rabbits occupies a large portion.

Fishing is a very important activity in GAMA, concentrating mostly in small villages along the 65 kilometres of the sea coast, where salting and smoking of fish also take place. Facilities for fishing activities are very poor, resulting in heavy pollution at landing areas and harbours. Weija, Dawhenya, and Ashiaman are fresh water lakes used for water storage and fishing. Besides, these storage areas there are a number of lagoons such as Densu, Sakumo, Gbefi, Gbegbeyise, Kpeshie, Sangaw, Mokwe, Osu Clottey, Chemu, Gao, and Laloi which are fish breeding areas. These are also fished.

The Achimota and Dechidaw forests are the only large bushland areas in Accra, the former is now surrounded by urban development. Only small pockets of indigeneous forest remain in the more isolated valleys of the hill country within GAMA. There are, however, large areas of land which remain fallow. Many of these areas have regenerated forest and thicket growing.

Industrial and commercial activities cover a small area of the land. The largest land user is the canning factory. Public institutions also have control over large areas of land but most of this is vacant.

8.5 SETTLEMENT PATTERN

There are several medium size settlements scattered throughout the rural area of GAMA. These include: Michel Camp (4,243) in Tema District and Bortianor (3,298), Mallam (4,943,), Pokuase (2,427), Odupon Kpeshie (2,597), and Weija (2,464) in Ga District (1984 population figures). Apart from these centres, Ga District has 14 settlements with a population of over 1,000 people, one being Amasaman which is the administrative capital of Ga district with a population of 1,333. The rest of the settlement pattern is given on Table 8.1.

Table 8.1 Settlements in GAMA Rural Area

Settlement size	Tema	Ga
0 -10	7	128
11-30	84	9
3-50	3	-
51-100	4	49
100-500	8	167
50-1,000	3	-
1,001-5,000	2	6
20,000-50,000	2	1
over 100,000	1	-

8.6 ECONOMY

There are three economic activities in which the rural areas contribute to the economy of GAMA. These are agriculture, industry and recreation.

8.6.1 Agriculture

The main agricultural activities are:

(a) Crop Production

Maize, cassava, yams, rice, and groundnuts grow extensively in the rural areas of Ga and Tema districts. The production of maize and cassava have shown steady increases since 1987 due not to any appreciable expansion in acreage but rather to increases in yield per hectare. Most pineapple farms in Ghana are located in GAMA region around Amasaman, and Pokuase. Three farms accounted in 1989 for about 54 percent of the total pineapple export earnings. In addition to pineapple exports, vegetables are beginning to enter the export market, with pepper leading the group of vegetable exports. The principal vegetables produced in GAMA are pepper, okro, tomatoes, beans and garden eggs.

(b) Fisheries

Fishing employed over 20,000 persons in GAMA in 1984. The fishing industry in GAMA is an important economic activity providing employment to a wide range of people. The canoe fishing activity which accounts for the bulk of fish landings annually, i.e. 53 percent in 1990, provides employment for most of the fishing communities along the coast of GAMA. In addition, it engages thousands of women in the processing and distribution of fish both within GAMA and the rest of the country. The GAMA coastline stretches for 65 km and provides a wide range of fishes including tuna, sardines, mackerel, snapper, tiger fish, cassava fish, grouper, shrimps and lobsters. There is some fishing in the Weija Lake of tilapia in very small quantities. Surface dwelling fishes such as sardines, anchovies, and mackerel have been heavily depleted in GAMA waters because of over fishing.

(c) Livestock Development

Livestock production consists of ruminants such as cattle, sheep and goats and non-ruminants like poultry, pigs, and rabbits. In 1990, there were 12,130 herds of cattle in GAMA representing (1.3%), 36,125 sheep (2.0%), 40,296 goats (2.1%), 11,197 pigs (2.3%), 2,067,185 poultry, and 5,437 rabbits. Except for poultry which grew by 73.5% since 1988, the population of the rest of the livestock has been decreasing, presumably due to competing landuses. In addition, there is wild game hunting of grasscutter, antelope, duiker, bush fowls and ducks. Poultry farms in GAMA are the largest concentration of modern poultry industry, with sophisticated management techniques, accounting easily for about 65 percent of the 8.7 million poultry in Ghana in 1989.

8.6.2 Industry

The rural areas of GAMA are the homes of some minor wood and food processing industries, bricks and hollow concrete block manufacturing, salt ponds, and some chemical industries.

8.6.3 Recreation

There is no national or regional park in or around GAMA. There are three possible areas for the development of parks for recreational purposes:

The forest reserves in Achimota just north of Accra and the Dechidaw near Afienya, north of Tema.

The rural areas contain considerable scenic and natural resources such as the Densu River and lakes (Weija, Dawhenya, Asutuare, and Aveyime) around which various regional parks can be developed.

8.8 SOCIAL SERVICES

8.8.1 Education

There are 30,742 pupils enrolled at the basic education level in the rural areas of Ga and Tema districts, 5,520 of which are at the JSS level. Two SSS are located in the urbanized parts of the districts, namely at Madina and Tema. The average school and class sizes are smaller than the urban areas of GAMA. The pupil/teacher ratios are also smaller. Most school buildings are incomplete or equipped with only the necessary facilities and materials for teaching purposes.

8.8.2 Health

There were 7 hospitals (4 in Tema and 3 in Ga) in 1984. In addition, Ga had 2 health posts, 16 maternity homes, 5 private clinics and 55 traditional healing health services, whereas Tema had only 4 traditional healing centres. Most of these health facilities are incomplete, lacking materials and supplies and sample laboratory equipment.

8.8 RURAL INFRASTRUCTURE

Almost all of the large settlements are located along the main highways, and are thus served by regular public and private transportation. Ofankor, Dome and Taifa are also on the railway line to Kumasi, while Sakumo lies on the Tema line. Most of the other small settlements are served by secondary roads, accessible during the dry parts of the year. Except for hamlets and small villages, the rest are covered by the mail service. There are, however, no telephone lines serving any of the rural parts of GAMA. The rural electrification programme covers only the large villages and towns.

The rural population gets water from various sources. The 1984 census provides the following details on sources of water supply to settlements in the rural area. These water supplies, except those supplied through extension of the Accra water supply system, are not always safe to drink, especially those from dams which have been polluted through industrial discharges.

Table 8.2 Settlement Water Supply

Type	**Number of Settlements** **Ga**	**Tema**
Well	-	97
River	-	134
Pipe System	102	31
Bore holes	60	1
Dam	63	6
Dug Out	123	-

Amasaman was connected to the Accra water supply system along a 100 mm main. This main was damaged during the construction of the realigned Nsawam Road over 10 years ago leaving Amasaman without a reticulated water supply.

8.9 ISSUES AFFECTING RURAL DEVELOPMENT

The main issues facing rural development in GAMA are:

Many villages lack access to the main urban areas or major markets over an all-weather road.

Rural electrification, safe water, and sanitation services reach a much smaller proportion of the population than in urban areas.

Education, on the whole, is poor with facilities well below urban standards. Attracting good teachers to rural areas is a problem. Adult illiteracy rates are higher than urban areas. School attendance is frequently interrupted by the demands of farm work.

The land tenure and distribution system do not provide incentives for more production. The Greater Accra Region has the highest proportion (93%) of land holdings of less than 1 ha. and only 0.8% have over 2 ha. Over 72% of the farms in GAR are owned and operated under possession rights.

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United Nations Administration

A. Alaka (Mrs) Programming Officer, UNDP
A.J Adu Sarkodie (Mrs), Administration Assistant
S.Yankey (Ms) Secretary

Local Consultants

Kesse Tagoe and Associates
Plan Consult Ltd
Housing and Urban Development and Associates
Ebenezer Acquaye and Associates
Department of Geography and Natural Resources
Environmental Management Associates
Architectural Co-Partners
Partners May Landscape Consultants
Design Consultants
A. Mensah, Consultant Economist
J.K. Hagen, Electricity Consultant
T. Botchway, Telecommunications Consultant