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DEPARTMENT of PHYSICAL PLANNING

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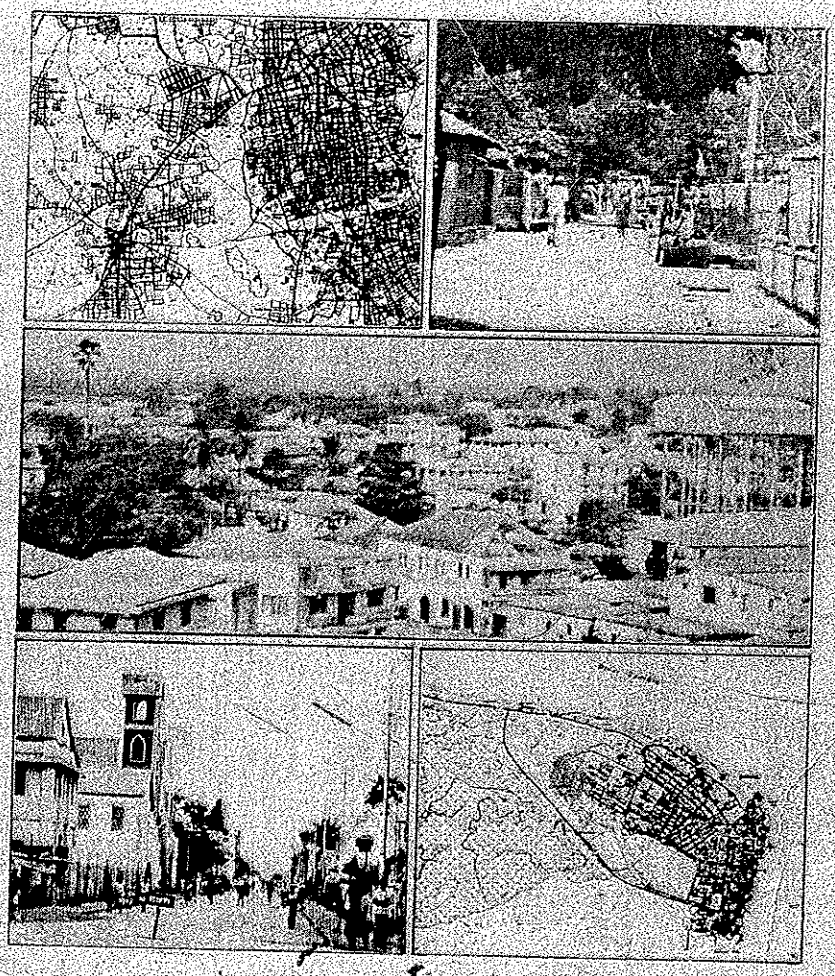
(GTZ) GmbH

PHYSICAL DEVELOPMENT PLAN FOR THE GREATER BANJUL AREA

FINAL DRAFT



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A Legal and Administrative Functions of the Physical Development Plan

1 The Demand for a Physical Development Plan

In the past twenty years the City of Banjul and the Kombo St. Mary District were characterized by a fast growing urbanization process. Banjul itself, being an island without major land reserves,has reached its physical limits to further growth, and in the Kombo St. Mary District the urban sprawl is spilling over the district boundaries into the Kombo North District.

This development took place without any major guidance and control by the competent authorities causing more and more hapharzard land allocation, scattered urban sprawl into valuable agricultural land, depletion of forests, strains of the water resources and a deterioration of those urban areas now struggling with problems of overcrowding.

Whereas in rural areas with low population densities and sufficient land reserves problems of land allocation and land use conflicts can easily be solved by informal methods on the village level, this is not the case in densely populated urban settlements. Here, the claims and needs for land and the expansion of compounds tend to be in conflict with each other and cannot be solved properly without a generally accepted land use regulation and a controlled utilization of the resources available. In order to achieve a rational, efficient, economical and equitable use of the resources, the setting up of a policy guideline for the future urban development and the establishment of an administrative machinery to implement such policies become imperative, especially if one considers that in 10 to 15 years from now the present population of the GBA (180,000) will have doubled.
This Physical Development Plan aimed at a controlled urban development of the Greater Banjul Area (cf. definition of the GBA in section 1.1 below) has been conceived as a policy guideline, the core of which is the "Land Use Plan 2000" (attached in the annex of this report). This Plan will be complemented in future by more detailed plans for those urban settlements of the GBA facing the most urgent problems and by lay-outs for new development areas (cf. section 1.5 below).

The core elements of the machinery to implement the policies of this Plan are the Physical Planning Act 1984, the Physical Planning Board and the Development Control Unit, established according to this Act, and the legal instruments provided for guidance and control of land uses (cf. section 1.2 below).

1.1 Spatial Delimitation of the Greater Banjul Area (GBA)

1.1.1 Definition of the GBA

The very first decision to be made when starting a physical planning exercise is to specify the area to which the plan refers in order to define which places have to be taken into consideration and for which areas planning regulations will be applicable. From the planner's point of view a meaningful delimitation of an urban planning region like the GBA must cover all those areas where urban development changes are presently taking place. In addition it should include most of the complementary urban and rural functions in the immediate hinterland of the urban settlements, thus providing sufficient reserves

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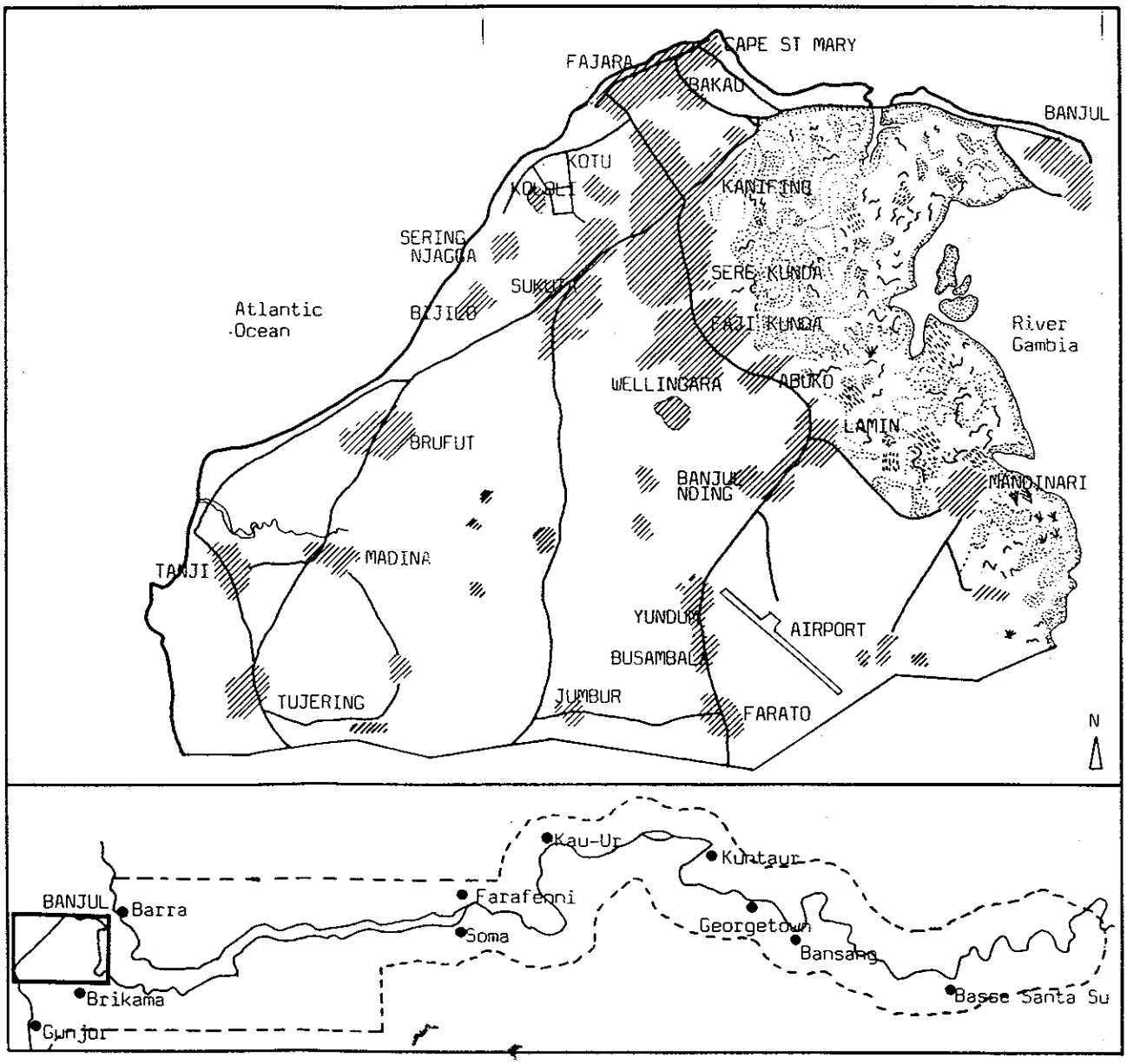
for future developments.

Even from the administrative point of view boundaries should be designed in conformity with functional units. This will appropriately adjust existing arbitrary delimitations, if they are superseded by recent urban expansions. It is also essential that the GBA be defined in a way such as to comprise all urban development areas plus reserve areas to ensure that laws and regulations with respect to urban management and planning cover this area in a uniform and comprehensive manner.

To meet these criteria and complying with the analysis of some key data of the area the Greater Banjul Area shall include the following areas (cf. Land Use Plan 2000):

GBA = City of Banjul
+ Kombo St. Mary
+ Kombo North
+ a strip of 3 to 5 km of Kombo South.

Figure 1: Greater Banjul Area



Hence the southern boundary of the GBA can be defined as follows (from east to west). In the east the boundary coincides with the existing Kombo North/Kombo Central boundary up to Galowya, then it follows the existing Kombo South/ Kombo Central boundary until it meets and follows the boundary of Kabafita and Bamba forest parks. From there the new boundary between the GBA and Kombo South runs along the forest park's boundary line, then extends from the northwestern corner of the Bamba forest park to the road junction west of Jambur. After this it follows the proposed road reserve up to Kunkunjang and runs in a straight line to the west up to the Atlantic coast.

1.1.2 Justification

Apart from general considerations mentioned above, the following criteria and indicators were used as guidelines when defining the areas constituting the GBA:

- functional relationship of settlements
- population desities and growth rates.

I. Functional relationship of settlements

The GBA comprises approximately 50 villages partly semi-urbanized (like Serrekunda etc.), partly completely rural. The decision as to whether villages should be included in the GBA or not was based on the assessment of the degree of linkages between those rural places and the urban or semi-urban settlements. Surveys have shown that most of the agricultural surplus achieved, i. e. all produce not consumed locally, in the villages of Kombo North and in places like Tanji, Tujereng, Madiana and Jambur in Kombo South is "exported" to the urban parts of the GBA. Although functional relationships between villages further south and in the GBA do also exist to some extent, these places tend to be more orientated towards Brikama.

As for Brikama itself, it is obvious that many functional relationships with the GBA do exist, such as the daily commuting traffic and the planned connection to the GBA's electricity and water supply networks; however, overall planning and political considerations suggest to look at Brikama as a secondary city and a growth centre of its own with its own development strategy enabling that town to become a counter-weight to the top-heavy urban agglomeration of the GBA.

II. Population Densities and Growth Rates

A common feature of areas undergoing urbanization is that they show higher densities and growth rates than the neighbouring rural areas. Throughout the GBA population densities are significantly higher and demographic growth is much faster than in the rest of the country. The trends of growth rates in the "old" constituencies of the GBA indicate that the degree and the speed of the urbanization process is shifting from Banjul (growth rate low and decreasing) through Kombo St. Mary (growth rate very high, but already decreasing at present) to Kombo North (growth rate high and increasing). These data reflect the typical pattern of rural-urban migration and the internal distribution of the resulting population increment over the past decennies (cf. also chapter B 1.1 on history).

Area	Densities 1973 inh/km²	Densities 1983 inh/km²	Population Growth Rates 1963-1973%	Population Growth Rates 1973-1983%	Trend
Banjul	3,077	3,500	41	14	decrease
Kombo St. Mary	522	1,360	228	161	decrease
Kombo North	95	190	81	99	increase
Western Division without Kombo North	47	66	61	42	decrease
Rest of The Gambia	38	48	47	27	decrease
The Gambia total	47	67	56	41	decrease

Table 1: Population Densities and Growth Rates in The Gambia

1.2 Legal Base - The Physical Planning Act 1984

The Physical Planning Act, effective since September 5, 1984 is the legal base for this Physical Development Plan. The Plan will undergo the approval procedure stipulated by the Act and in addition, be approved by Cabinet (according to section 14, subsection (3) of the Act), before the Minister responsible for Physical Planning will finally underwrite the plan to become an "Approved Plan" in the legal sense. Section 16 of the Physical Planning Act stipulates the function of the Plan to be an instrument which legally binds Government authorities to this Plan:

"(1) An Approved Plan shall generally be used as a standard for guidance by all authorities and public officers in the exercise of any powers vested in them.
(2) Without prejudice to the generality of subsection (1) of this section, an Approved Plan shall be used -

(a) as the basis for preparing comprehensive layout plans;
(b) for regulating the development of all land subject to the issue of a Development Permit under section 19 of this Act;
(c) for enforcing development controls."

Section 19 of the Physical Planning Act is the instrument that legally binds each individual to the Plan by means of the Development Permit:

"Notwithstanding any law in force, no person shall develop or carry out any work of any kind on any land subject to the provisions of this Act unless he has been issued with a development permit in respect of such land by the Planning Authority."

Furthermore, Section 27 of the Act provides the means to enforce a plan in existing areas:

"(1) Where an Approved Plan enters into force in accordance with section 14 of this Act, the Planning Authority shall require the owner or occupier of every land situated within the area covered by such Approved Plan to comply with the Plan."

Hence, the approved "Land Use Plan 2000" for the GBA will constitute a local law governing the present and future land use within that territory specified as "Greater Banjul Area" according to chapter 1.1 above.

1.3 The Physical Development Plan and the Five-Year-Plans

The Physical Development Plan is based on forecasts and assumptions derived from the Five-Year-Plan and complemented by own surveys and analyses. The future situation planned for and the problem solutions suggested by this Plan are referring to the period between 1995 and 2000, thus covering a longer period or else a more distant "time horizon" than the Five-Year-Plans.
The projected results to master the future situation will only be achieved, if and when the underlying assumptions are correct and do not change over time, if and when the necessary actions and investments can be launched and successfully implemented. This Plan is no exception to any other long-range plan and is thus facing the same difficulty; "knowing the future" is only possible for people with second sight, but not for planners. Hence, the planning statements have to be "conditional forecasts" meaning that given certain conditions, development trends and resources, and assuming that the recommended actions will be taken, the projected results are most likely to be achieved or, if no actions will be taken, certain problems are likely to occur.Consequently, it will be necessary to subject the Plan to constant maintaining and to find out whether existing ongoing developments are in line with the Plan or not. In addition, the actions taken to implement the planning proposals should be assessed as to their effectiveness in five year intervals at the latest and, if necessary, corrective measures be applied so to achieve the overall Plan objectives. Such five-yearly evaluations should precede the preparation of the following Five-Year-Plan.

The Physical Development Plan has a three-fold complementary function to the Five-Year-Plans:

(a) It includes and allows for those projects of the present Five-Year-Plan requiring land and having a spatial impact on the physical development of the GBA.
(b) It identifies necessary measures to improve the development of the GBA, especially with regard to land use, environmental protection and road networks which may not be part of the Five-Year-Plan.
(c) It provides a range of proposals and projects which serve as an input to the next two or three Five-Year-Plan-periods. Which of these investment proposals should be materialized and what priority should be attached to them has to be decided by politicians before setting up Five-Year-Plans, taking the overall development needs of the Nation into account. Hence, one of the necessary actions to implement the Physical Development Plan will be the step-by-step inclusion of parts of this Plan into the Five-Year-Plans (cf. also chapter C.3 on implementation and monitoring).

1.4 The Physical Development Plan and Sectoral Plans

Sectoral plans providing for extension of water supply and electricity networks, road construction, provision of school buildings, health facilities etc. were incorporated into the Plan as they were brought to the attention of the planning team and complemented by own proposals. This means that with regard to any of such facilities locations are chosen, the necessary land is reserved and accessibility is ensured; this does not mean, however, that all such facilities will be built or established within the planned time horizon, as this depends entirely on the implementation capacities of sectoral institutions. Nevertheless, it is essential to reserve land for such public uses so to avoid future problems, once funds are available to execute the projects for which the land has been reserved.

Apart from compiling various existing plans and options from other Departments and Ministries in a synoptic manner and analysing their side-effects on each other, the Physical Development Plan provides a perspective and a conceptual framework for the sectoral planners to provide services accessible to the future urban population. After approval, this Plan document is to serve as

- a basis for the exchange of information and coordination between different sectors concerned with the various aspects of urban development,
- an obligatory guideline for the location of facilities, especially those providing for the basic needs of the population.

The Physical Development Plan should therefore be considered the starting point for any relevant sectoral study which might be carried out.

Hence, the Plan should assume the function of a "turntable" by informing all parties concerned about constraints and potentials of land uses, physical developments and locations for various activities.

1.5 The Physical Development Plan as a Framework for Action Area Plans and Layout Schemes

The Physical Development Plan primarily is a policy paper defining the various development strategies for the different urban settlements within the Greater Banjul Area. It is mainly addressed to the decision-makers on Government level and serves as a guideline to make consistent, foreseeable and rational decisions in terms of land use and choice of location. As such the Plan gives the overall framework for deciding on urban areas to grow, the ones to be limited in growth, the ones to be reserved for specific future uses, the ones to be preserved, the ones to be upgraded, etc. and provides the criteria guiding the decision-making on land allocations, development permits and public investments for facilities and infrastructure in the whole of the GBA.

Consequently, the Plan is not meant to deal with the details of every streetcorner, a pile of waste or a broken standpipe round the corner. This level of detail cannot be envisaged for the whole of the GBA at the same time and it is also

not advisable to do so. It would mean a waste of effort and time, if such detailed plans were prepared for the whole of the GBA in one go since it is not possible to carry out such improvements all at once in the area as a whole. Therefore it is on the local level, e. g. the town quarter or "action area" where such detailed plans are to be prepared, area by area, according to the urgency of a problem and the capacities to implement. In setting up such "Action Area Plans" it will be essential to motivate the local population, induce them to contribute tesito work or at least inform the beneficiaries on what improvements and regulations for the overall benefit of their living quarter will be introduced. On a technical level maps have to be drawn up on a larger scale (between 1:1000 and 1:5000) and showing more details than the maps of the present Physical Development Plan which is between 1:10,000 and 1:30,000. The Plan provides the framework for selecting and guiding such action area plans to be set up in line with the policy statements.

The same applies to lay-out plans for new development areas which should be derived from the Physical Development Plan rather than being drawn up in the sometimes arbitrary manner of the past. The lay-out plans for new areas must be embedded in the overall framework of policies suggested by the Physical Development Plan.

2 The Plan's Functions for Urban and Rural Development

This chapter briefly touches upon those issues which the Plan cannot influence.

The Plan restricts itself to policies of land administration, mainly consisting of improving the internal structure of the urban area and foreseeing locations for facilities and economic activities which may be established if the necessary funds can be raised and the market conditions allow for new urban workplaces. Hence, the Plan can only create the necessary preconditions for such developments, e. g. keeping the land available and defining the infrastructural requirements. This alone, however, is not sufficient to materialize the developments suggested in the Plan. Whether or not industries will develop and workplaces be created, whether or not overall economic development will produce sufficient revenue for investments in infrastructure and social amenities will depend on the successful promotion of economic activities and on the nature of private investments. By pursueing the policies stated in the Plan it is much more likely that such public or private productive investment can be attracted and programmed more efficiently and that overall running costs and investments in consumptive infrastructure be minimized more effectively. However, this is still no guarantee that all the facilities and industries for which the Plan is reserving land only will really come into existence up to the year 2000.

Sometimes it is argued that policies for the improvement of the internal structure of urban areas, for the provision of land and for paying the way for investments contribute unduly to the attractiveness of the urban area and thus enhance rural-urban migration. Extensive migration research over the past twenty years, however,

provide sufficient evidence that this assumption is a myth. The streams of rural-urban migration are much more due to intra-rural inequalities and problems of the rural economy than rural-urban disparities. Hence, the Plan can hardly influence this phenomenon, nor can it contribute much to a redistribution of industrial investments in favour of rural areas, by for example not providing land for industrial development in the GBA. Especially in the case of The Gambia with its very limited non-agricultural industrial sector, it would be an inappropriate policy if attempts were made to divert the scarce capital resources to unfavourable locations (in terms of access, transport, technical infrastructure) up-country, before a sufficiently strong urban economy has not developed in the GBA. At this stage of the national economic development it would be too early to promote non-agricultural investment capital elsewhere rather than in the GBA.

As a consequence, the growth and development of the rural areas should rely heavily on the agricultural and agro-industrial sector especially for the procurement of inputs, incentives and marketing outlets in the rural growth centres. In addition to the efforts to improve and diversify agricultural production, a policy should be designed to develop the "urban functions in rural development". This could greatly contribute towards upgrading rural growth centres to market and service centres for their rural hinterland, thus providing additional job opportunities and potentially absorbing some part of the rural-urban drift.

Physical Development Plans for the urban development of three such centres (Brikama, Farafenni and Basse) will be prepared until 1986.

B Urban Development Problems and Potentials in the Greater Banjul Area

1 Social Structure

1.1 History

1.1.1 History of the Settlements of the Greater Banjul Area

There are two historically very different settlements in the GBA which have become similar in appearance only in the last 20 years: The colonial settlement of Banjul and the various villages of the Kombos.

Banjul was founded as "Bathurst" in 1816 on the island situated at the southern side of the mouth of the River Gambia. Strategically this island was a very good site to control the entrance to the river and offered the only natural port in this area. However, the island was often flooded at spring tide and during the rains and was therefore an unfavourable place for setting up a human settlement. This was also the reason why the island was uninhabited until the military and trading interests of the colonial power gained ground over the disadvantages of the place. But even then the surrounding swamps and the generally unhealthy conditions frequently caused epidemic diseases among the early settlers.

In the early 18th century, the town was built following a lay-out by Captain Grant who was somehow a town planner in advance of these times. His lay-out followed the principle of designing streets and open spaces first and subdividing the remaining plot areas accordingly. Land was partly reclaimed and the place was drained with tidal sluices to prevent flooding. Although house construction was difficult due to a complete lack of building materials - stone was fetched from the mainland and lime provided by burning of oyster shells -, the settlement grew fairly rapidly with a population growth of 600 in 1818, 4,000 in 1850, 7,700 in 1911, 27,809 in 1963, 39,197 in 1973 and 44,572 in 1983.

In 1821, the public buildings included a government house, baracks, officers' quarters, a mess, a jail and a hospital.

In these early times, Banjul consisted of the following five small hamlets grouped around the large green space of MacCarthy Square:

- Portuguese Town, mainly for Mulattoe traders emigrated from Goree and St. Louis;
- Jolof Town, mainly for Wolof servants and artisans also having emigrated with the Mulattoes;
- Soldier Town for the retired soldiers of the "Royal African Corps" and "West India Regiments";
- Mokam Town, the poorest part of the town at the southern tip of the island, to be named "Half Die" after the Colera outbreak in 1869;
- Jola Town where some Jola families from the Kombos had moved and later many "liberated Africans" were to settle.

These hamlets were intended to be used for cultivation and pasturage. In 1844 there were

still 40 acres on the island under cultivation, but the poor soil never sufficed to support the population. As the population increased, vacant space was built up and a single town was formed. The nutritional base was entirely shifted to the Kombos (apart from imported goods).

Nowadays, the subdivision into the five original quarters has vanished and has been replaced by the three constituencies of Banjul West, Central and South.

The Kombo villages in the 19th century were part of the Kombo Kingdom. Its ruler Suling Jatta had ceded one part of the Kingdom (today's Kombo St. Mary District) to the British Governor who transferred a large number of liberated Africans from Banjul to the mainland. At that time the main villages were Sabiji (today Sukuta), Bakau, Busumbala, Yundum and Brufut.

As a consequence of the Soninke /Marabout wars, the villages of Kombo North came under the authority of British rule at the end of the 19th century (Protectorate Ordinance, 1894).

Until after World War II the villages grew only at a relatively slow rate. The area between Abuko and Latrikunda/ Pajara to a large extent was still thick bush and agricultural land, and the villages were seperated and could be distinguished well. But in the 1970's, the "Greater Serekunda" agglomeration started growing together, forming a uniform settlement which today is far bigger in size and population than Banjul.

The Alkalolu of the former villages still are the administrative and political representatives on the lowest level. Apart from the Area Council (KUDC) for the Kombo St. Mary District there is no uniform town administration.

1.1.2 Customary and "Modern" Land Tenure System

A major historical constraint to today's needs of guiding the fast urbanization of the Greater Banjul Area is the fact that there exist two different kinds of land tenureship in the same area which are reflected by the Lands (Provinces) Act and the Lands (Banjul and Kombo St. Mary) Act. The former is almost entirely confined to the traditional system whereas the latter is more government controlled in the sense that the government can intervene and control land allocation. In spite of the stipulations of the Lands (Banjul and Kombo St. Mary) Act, the customary land tenure and allocation system co-exists. Conflicts and confusion often arise due to the application of both systems within the same area.

The functions and geographical delimitations of these two Land Acts have since long been superseded by the fast growing urban expansion which has gone beyond the boundaries of Kombo St. Mary District.

1.1.3 Guidelines for Physical Planning

Certain guidelines for the future planning for Banjul and the Kombos can be derived from this historical record, taking the different results of the historical development into account.

a) Banjul City

- The former subdivision into the originally five "towns" has become largely obsolete with the exception of Half Die which to some extent still is a community of its own. The former differentiation of the "towns" or quarters by ethnicity or social and/or economic status has been superseded by a more mixed population and should not be considered for planning purposes.

- Town quarters should be defined by the existing social cohesion and predominant land uses rather than by historical subdivisions, also taking into account the political constituencies.

- The remaining physical inheritance should be preserved wherever the quality of the buildings (both structurally and aesthetically) permit. Any indiscriminate alterations or bulldozing of the few remainders of the colonial architecture should be thoroughly examined since it is generally accepted that the colonial period is part of the Nations's history.

- The historical lay-out of the street network (and the geographical limitations of the island) call for restrictions as far as populations density and land use intensity are concerned. In order to avoid overutilization of the streets and related infrastructure, upper limits of building heights have to be established; three stories for housing and maximum 6 stories for office and commercial buildings should become the rule (this rule will have to be specified in the forthcoming Action Area Planning exercise).

b) Kombos

- The Kombos partly consist of urbanized and to a large extent of rural areas providing the nutritional base for the urban areas. To avoid uncontrolled continuation of the trend of urban sprawl, the following guidelines are to be observed:

  - Clear definition as to which areas are to be urbanized and which are to be protected to provide and improve the nutritional and agricultural base of the population.

  - Establishment of Green belts between settlements (where this is still possible) to avoid further conglomeration of formerly distinct settlements.

  - Maintaining the identity of the former villages and present town quarters in the urbanized areas by looking at them in terms of urban neighbourhoods (if the number of inhabitants permits), which means facilities appropriate on that neighbourhood level. This implies a decentralized multi-core development approach.

1.2 Demography

1.2.1 Present Situation

a) Demographic Structure and Distribution

Approximately 26 % of the total population of The Gambia

District	Popul. 1963	in % of total	Popul. 1973	in % of total	AAGR[1] %	Popul. 1983	in % of total	AAGR[1]
Banjul	27,809	56.5	39,179	41.1	3.5	44,500	24.6	1.3
Kombo St.Mary	12,208	24.7	39,404	41.4	12.4	102,900	57.0	10.1
Kombo North	9,245	18,8	16,710	17.5	6.1	33,300	18.4	7.1
Grand total[2]	49,000	100.0	95,000	100.0	6.8	180,000	100.0	6.6

1) Average Annual Growth Rate 2) Figures are rounded
Source: Population Census 1963, 1973, and Census 1983 (preliminary results)

Table 2: Population Development in the GBA, 1963-1983

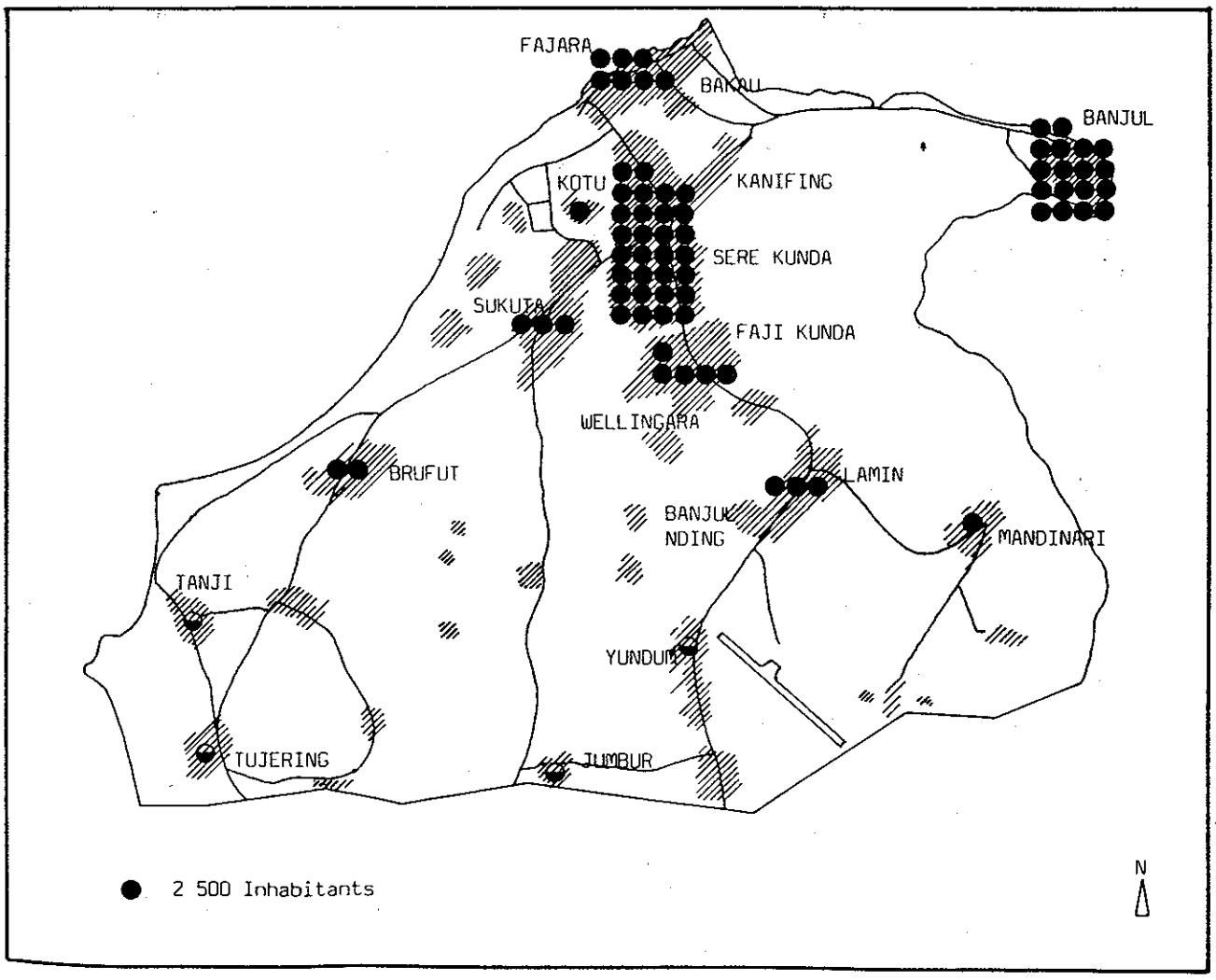


Figure 2: Present Population Distribution

(700,000) is presently living in the GBA.

According to the preliminary results of the 1983 census, the Kombo St. Mary District has the highest population with 102,018 inhabitants, followed by Banjul with 44,572 and Kombo North with 32,115.

The population figures of the last three decades clearly demonstrate the outstanding position of the Kombo St. Mary District in the recent population development. Having accomodated roughly one fourth of the population of the GBA in 1963, it increased its share to more than one half in 1983. Moreover, it shows by far the highest annual average growth rate of 10.1 % between 1973 and 1983 which is approximately four times higher than the natural annual growth rate being somewhat around 2.6 %. Bajul which was the most populated area in The Gambia until 1963, experienced a decreasing growth due to the saturation of the limited space which has already lead to an outmigration from the city. The population increase in Kombo North is less spectacular than the one in Kombo St. Mary, but it still shows an annual average growth rate of about 7.1 % which is somewhat less than three times the natural growth rate.

If the natural annual growth rate of 2.6 % is applied to the GBA to estimate its population growth from 1973 to 1983, a population of some 123,000 people would result for 1983. Consequently, approximately 57,000 people (32 %) must have immigrated from outside into the planning area during the last decade. Between 1963 and 1973 the net immigration totalled even some 63,000 people equivalent to 66 % of the Greater Banjul population of 1973.

Although the period observed is quite short, it can be presumed that immigration to the GBA in future will rather decrease than increase.

Table 3: Population in the Economic Active Age by Sex in 1983[1)]

District	Age distribution	Absolute	Sex 2) ratio	Male absolute	Female absolute
Banjul	57 %	25,365	110	13,291	12,074
Kombo St. Mary	59 %	60,711	133	34,666	26,045
Kombo North	54 %	17,982	115	9,620	8,362
Grand total	58 %	104,058	118	56,360	47,698

1) percentual distribution and sex ratio according to census 1973
2) sex ratio: males per 100 females

Source: Census 1973

The decline of the average annual growth rate is an indicator for such a development.

b) Population structure

Looking at the structure of the population, it is obvious that both the age structure and the sex ratio in the GBA are unbalanced. There is a high proportion of children below the age of ten and a relatively low share of people in the age group of 70 and above.

The sex ratio is showing more male than female inhabitants in Banjul, Kombo St. Mary and Kombo North. This relatively high sex ratio in the GBA can be explained by the incidence of in-migration of Gambians from the countryside on the one hand, and immigration of non-Gambians into the planning area on the other hand. These groups consist mainly of single males.

1.2.2 Future Trends

Population projections demonstrate the increase or decrease of the population over a period of time ahead. However, since projections are forecasts based on assumptions, any results achieved are necessarily an approximation.

The forecast for the GBA up to the year 2000 is based on three levels of growth, viz a low level, a moderate level and a high level.

The high level forecast is based on the assumption that the present AAGR remains nearly constant. This means that the average annual growth rate of 6.6 % is kept until 1990 and only after 1990 the growth rate will vary.

In the medium level forecast, the annual average growth rate declines slightly until 1990 and then a steeper decline is assumed until the year 2000.

The low level forecast assumes a steady decrease in the annual average growth rate up to the year 2000.

All the three levels are based on the following two basic preconditions:

i) The natural average annual growth rate will decrease in the medium and short

Table 4: Population Forecast up to the Year 2000 under Different Growth Conditions

Time Horizon Levels	1983	AAGR	1985	AAGR	1990	AAGR	1995	AAGR	2000
High	180,700	6.6	206,000	6.6	282,000	6.5	386,000	6.4	526,000
Medium	180,000	6.6	205,000	6.2	277,000	5.5	362,000	4.5	451,000
Low	180,000	6.2	204,000	5.0	260,000	4.0	316,000	3.0	366,000

term. Although there will be a higher life expectancy and increased birth rate due to improved medical and basic services, changes in social attitude will alter this trend. The family size is likely to decrease as typical of most urbanized areas and a relatively high rate of singles will be seen in the GBA.

ii) The overall annual average growth rate will also decrease due to decreasing in-migration to the planning area. This is on the assumption that intensification of the agricultural sector and greater job opportunities in rural centres would absorb potential migrants.

Hence, the present population of 180,000 of the planning area will have doubled in the year 1995. The following table shows the distribution of the projected population by districts.

at a decreasing rate, i. e. there will be a natural increase while at the same time the city will be losing population to Kombo St. Mary.

Kombo St. Mary will experience the highest growth rate. By 1995 approximately 71 % of the population of the GBA will be living in Kombo St. Mary.

In Kombo North the growth rate will be rather moderate due to the present low state of socio-economic development. However, after 1995, with more economic development taking place and Kombo St. Mary approaching its saturation, a steady increase in population is anticipated for Kombo North.

1.2.3 Guidelines for Physical Planning

In view of the expected population increase and the socio-economic development to take place, the following three guidelines should be observed:

1. The future population should be provided with residential areas and required social

Table 5: Population Forecast and Distribution by District up to 1995

Year / District	1983	in % of total	AAGR	1985	in % of total	AAGR	1990	in % of total	AAGR	1995	in % of total
Banjul	44,500	24.6	2.3	46,571	22.7	2.0	51,418	18.6	1.5	55,392	15.3
Kombo St. Mary	102,900	57.0	9.3	122,895	60.0	8.3	183,379	66.2	7.0	257,683	71.2
Kombo North	33,300	18.4	3.3	35,534	17.3	3.5	42,203	15.2	3.0	48,925	13.5
Total	180,700	100	6.6	205,000	100	6.2	288,000	100	5.5	362,000	100

The following conclusions can be drawn from above:

Due to physical limits to growth, Banjul will increase

and technical facilities.

2. Modification of the land use according to the possible social transformation; present and future socio-economic developments will require more space for urban activities such as commerce, industry, administration and for a new standard of educational and recreational facilities.

3. Reactivation of some habitual neighbourhood activities and responsibilities in order to minimize the planning and upgrading costs involved.

1.3 Social Organisation

1.3.1 Problems, Potentials, and Constraints

The GBA comprises rural, semi-urban and urban parts (cf. map LUP 2000 in chapter C.1) which differ, amongst other things, in the structure of the social organisation. Whereas in the rural parts the village society is structured in the traditional way, the urban society is in a more transitional stage on its way to other forms of social organisation mainly due to the transition to an urban economy.

The traditional organisation into kabilas[1] including the kunda[2] and the sinkiro[3] of the rural society is strongly related to the necessities of agricultural activities. Apart from such socio-economic links, the traditional social organisation is also determined by socio-cultural and kinship links. The latter links are less affected by the transition to the "urban way of life". Hence, even in the most urbanized areas of Banjul the majority of the population is living in a kind of "urbanized compound" where Kabila, kunda and sinkiro are no longer of much relevance with respect to the organisation of production as in the rural context. The coherence of an urban kabila or kunda depends on the socio-cultural links such as kinship, and the mutual support of relatives and kunda members is a very strong social obligation.

The difficult conditions of finding employment and housing in the urban settlements are partly compensated for by the mutual support of relatives and compound members. Nevertheless, the overcrowded compounds and the lack of public and private open space in the centres of the GBA (Banjul, Bakau, Serekunda) quite often put considerable strain on the relations of the inhabitants.

In the same way the traditional forms of village labour organisation like the Dabada 1° and Kafo 2° work (Sate Kafo 3°) are of less relevance in the urban

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1) A patrilinear kin group (several families of same descent); the kabila of the founding patrilineage has a central position of authority and prestige in a village.

2) Kunda is an equivalent to a compound, or the group of inhabitants of a compound.

3) Group of people who eat and belong together. The man, his wife or wives and their children usually constitute the core of a sinkiro. Physically sinkiro means the fire or cooking place.

areas. They are more and more replaced by wage earners, governmental, private organisations or enterprises (such as PWD and Cleansing Services). Women kafo, however, do still exist. Their main purpose is the support of its members in case of sickness, joint preparation of feasts like marriage and naming ceremonies, mutual work support in gardens and rice fields, and common dancing festivities.

With the exception of Banjul City, the Alkalo (village head) still plays a key role in leading and administering the local communities. The functions of traditional alkaloship are:

- allocation of residential and agricultural land;
- collection of "compound rates";
- settlement of disputes among the villagers;
- settlement of litigations concerning land tenure or criminal offences.

Within the Kombo St. Mary District the most important traditional function of the Alkalo, the allocation of land, was reduced to an assisting function to the KUDC and the government. Hence, the Alkalo is only competent to collect compound rates, to settle disputes, to assist the government and to inform the population of governmental decisions concerning the settlement.

This reduced authority is often exceeded by some Alkalolu since they continue to allocate land, in many cases against payments ("selling of land"). This is creating major problems to the land and planning administration.

1.3.2 Guidelines for Physical Planning and Local Administration

a) The smallest "planning unit" in terms of population is in most cases the compound or a kunda, usually consisting of more than one sinkiro. Most of the middle and high income strata of the population form only one sinkiro or a "small family" per compound (cf. also chapter B.2.1. on housing).

b) Every attempt should be made to get the remnants of the traditional work organisation (sate kafo) revived and mobilized for self-help community work in construction and maintenance of communal infrastructure and social amenities. In view of the demand and the high costs for such facilities it is necessary to complement government efforts by such self-help contributions. Apart from cost-savings also the socio-psychological advantages of "tesito"-commitments are evident. Popular participation should already start

1° Joint work force (male members of a patrilinear kin group). Semi-autonomous group within the larger family structure (compound).
2° Generic term for group, assembly, association. Each group of people either sitting, talking, dancing, or working together can be called "kafo". They are mostly organized in age groups.
3° Sate kafo may comprise all village inhabitants for the execution of common work such as maintenance and cleaning of streets and roads, construction and repair of bridges, roads, and mosques.

when planning any major change within existing settlements.

c) The role of the Alkalolu with respect to land allocation should be reconsidered. Since the GBA comprises more than Banjul and Kombo St. Mary, this role should be defined in a uniform manner for the whole GBA (this refers mainly to the Banjul and Kombo St. Mary Lands Act).

Rather than further depriving the Alkalolu from their traditional power it seems to be advisable to involve them more in the land allocation procedure as agents of the government. This would require training them to some extent and ensuring an active communication approach when it comes to a local Action Area Planning and lay-out planning for new areas.

2 Land Use Structure

The current land use in the GBA can be differentiated into three main areas, viz Banjul, Kombo St. Mary and Kombo North.

2.1 Banjul

For practical reasons the constituency of Banjul should be looked at as consisting of two parts which differ considerably from each other.

2.1.1 Banjul City

Banjul proper is defined as the city of Banjul in its built-up limits. Land use of the city can be split up into the following main categories:

Residential

The largest share of the built-up area is taken up by residential and mixed use. The way of residential living is characterized by the concept of compounds. These compounds predominantly consist of a number of detached one or two storey buildings. About 60 to 70 % of the plot area is built-up. The non-built-up area of the plot often has trees, mostly fruit trees. Some small-scale gardening is occasionally to be found. A high percentage of the buildings is in bad condition. The compounds are partly equiped with water standpipes and sewerage disposal facilities. Density is approximately 500 inhabitants per hectare which results in an overcrowding of this type of urban fabric.

Business and Commerce

The core of the city centre is dominated by commercial activities resulting from Banjul's function as the capital of the nation and from its location as a port. These activities entail wholesale, retail and storage as well as other facilities such as banks and other services associated with commerce and business. They all form a continuous zone running parallel to the harbour area, stretching north-south and cover about 15 ha. Land use is predominantly commercial, but other uses also exist.

Industry

Industry uses just a minor share of the land and is essentially limited to a few factories situated along the port, mainly processing fishery prod-

ucts. Other industries only exist in the form of informal sector activities that tend to agglomerate in the city centre and are associated with commerce and business, but are not dominant.

Public Administration and Services

Administration and public services are located essentially on the northwestern fringe of the commercial zone and stretch more or less parallel to the northwestern shore. From there the area continues towards the end of the built-up area limited there by several cemeteries. Other locations are the southern tip of Banjul and some smaller areas scattered all over the city.

Social Amenities

The most important social facilities of The Gambia are concentrated in Banjul City. This implies that they are partly also used by people from the surrounding areas and even from up-country. Educational and health facilities particularly are in high demand with the consequence of being overcrowded. Generally, standards are high since in crowded situations a higher physical standard and technical infrastructure are needed.

Access

Access within the city in general is good, the street surface, however, often is in a rather bad condition. Road access to the city is limited to the main highway linking Banjul with the Kombos and the rest of the country. The ferry linking Banjul to Barra on the north shore theoretically works on a regular schedule but is commonly delayed. River transport up-country is restricted to a monthly service in the rainy season and a weekly service in the dry season.

Port Area

The port area stretches more or less from Banjul Point in the north to the area of the Public Works Department on the southern tip of Banjul.

The area comprises several wharves, storage facilities and the ferry terminal.

2.1.2 Banjul's Outlying Areas

Outlying areas are defined here as areas belonging administratively to Banjul, but not being part of the City's built-up areas. Land use of this area can be subdivided into two categories: used and unused areas. The vast areas of mangrove swamps are not intensively used. The areas under use can be separated into the following uses:

Industry

Industrial use of this area is so far limited to the area of Denton Bridge, where the factories of the GPMB's groundnut sector are located. Denton Bridge lies about five kilometres to the west from Banjul City and is accessible by road and for barges from the river via the Chitabong Bolong.

Agriculture and Gardening

All other areas are used for agriculture and gardening. Agriculture is carried out on a secondary basis for a subsidiary income. The nature of this agriculture is in most cases a kind of gardening.

Social Amenities

Three areas, more or less loosely bordering each other, are being used for public facilities such as health, security and utilities. These areas separate the tourism area from the city.

Access

All parts of the outlying areas can be reached by the main road leading from Kombo St. Mary to Banjul. It branches off at some point into the Bund Road and the main road continuing to the city. The Bund Road lies on a dyke which prevents the polder from tidal flooding.

Tourism

Two stretches along the coast at the north of the main highway are used for tourism, separated by facilities of the GUC. One of the tourism zones consists of two hotels, the other one, once allocated for tourism, consists of an unfinished hotel complex which should be put to administrative uses.

2.2 The Kombo St. Mary District

Kombo St. Mary is located between Banjul and Kombo North and covers an area of about 75.6 sq km. The significant uses for this area are residential, gardening, commercial, industrial and touristic. The built-up area is densely and extensively used and is inhabited by the largest share of population of the Greater Banjul Area.

Residential

The main part of the built-up area is used for residential purposes that can be subdivided into three types:

- densely populated compounds of a similar design and condition as in Banjul; the majority of dwellers live in this type of compounds;
- compounds characterized by a large area used for gardening activities;
- residential plots characterized by a modern design and a high building standard.

The first type is the most frequent one, the two other types are to be found in typical locations. Gardening compounds tend to be located along the urban fringe while the modern plots tend to agglomerate towards the coast and along Kairaba (old pipeline) Road.

Whereas parts of Serekunda and Bakau are very densely built up, such places like Sukuta and Latri Sabiji are characterized by a large amount of open land and under-developed or undeveloped plots.

Business and Commerce

Activities of the commercial sector are concentrated in a few areas which are partly limited in space. Major areas are the Serekunda market followed by the local markets of Bakau, Latri Sabiji etc. A second centre for commercial activities, but on a different scale, is found in the Kanifing Industrial Area. Other types of commercial activities that supply the population with basic goods, the small retail shops, are scattered all over the area.

Industry

Industrial activities belonging to the formal sector are concen-

trated in the Kanifing Industrial Area which at the same time is the largest agglomeration of industrial activities within The Gambia. All other such activities belong to the informal sector. They are located either in the main commercial areas or tend to cluster along the main roads. They are dispersed throughout the residential areas.

Agriculture and Gardening

Gardening activities can be broken down into market gardening and subsistence or supplementary gardening, whereby the food supply for the family is the main reason for such activities. Gardening areas that include rice growing on a small scale are located predominantly in low lying areas with alluvial rich soils and good drainage such as the Kotu stream valley and the area between the mangrove swamps and the built-up areas. Another area of gardening and agriculture, especially for ground-nuts as cash crops, is the area north of the Kanifing Industrial Estate and the area west of the Kotu Stream that is gradually changing from gardening to residential use at present.

Access

There are two types of access. The access to residential areas is usually unpaved, of irregular shape and between two and six metres wide. The maintenance of these roads is unsatisfactory, especially during the rainy season.

Local and regional access roads are mainly between 8 and 30 m wide. They are provided with a 4 to 6 m hard surface and partly have foot paths, street lighting and trees. Only in a few cases the quality of the roads is fully satisfactory.

Tourism

Tourism facilities, i. e. hotels mainly, are lined up along the beaches from Cape Point to the west and later southwestwards. Most hotels have associated facilities, a little tourist market and the like. There is a certain seasonal fluctuation in the degree of utilization of these facilities, and some of the hotels even close down during the low season in summer (rainy season).

Social facilities

The existing social facilities are decentrally located within the Kombo St. Mary District. Their number is very limited. The consequences are that, on the one hand, too many people have to use them and, on the other hand, the radius of the catchment area is relatively large. All the facilities, especially those for education and health, are overcrowded and not adequately equipped.

2.3 The Kombo North District

Agriculture is the main land use in Kombo North and there are also several smaller forests. The typical settlement in the area is rural and only along the Banjul - Brikama highway the settlements tend to become urban in character.

Residential

The typical settlement of Kombo North is the village where usually large compounds are to be found, most of them having gardening areas within the

compound. Along the highway, however, there is a more densely built-up area with many compounds of higher plot ratios; some of these do not have gardening activities within the compounds.

Commerce and Industry

Commercial activities in the form of small-scale retail shops are to be found in the village cores. Some of the villages have smaller markets. Industrial activities are limited to a few establishments scattered along the Banjul - Brikama highway.

Agriculture/Gardening/Fisheries

Agricultural land use is dominated by the growing of cash crops, predominantly groundnuts, other foodcrops rank second. The use of land for agriculture depends on the soil conditions and the possibilities for irrigation. Gardening is taking place in compounds and the surrounding areas. In the GBA only some areas are used for fishery, mainly for fish smoking, like in and around Ghana Town and at the Tanji Fish Curing site (already part of the Kombo South District).

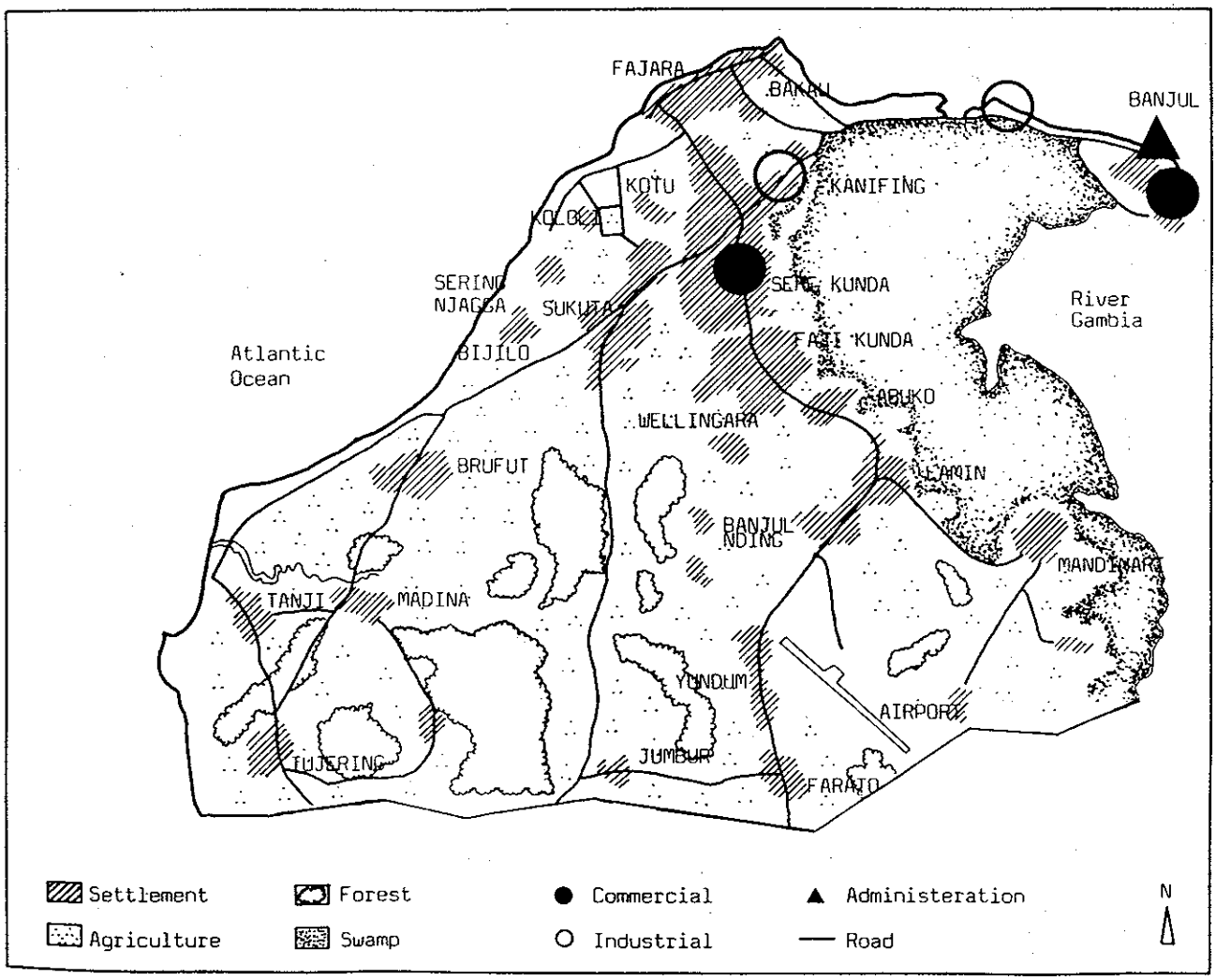


Figure 3: Present Land Use

Social Amenities

Generally the area is very poorly served with social facilities. The radius of the catchment area is in some cases unacceptably wide. Health facilities, such as sub-dispensaries and dispensaries are not adequately equipped and not attended regularly.

Access

Local and regional roads are in relatively good condition. The width of these roads is between 3 and 8 metres and only a few of them are paved.

2.4 Guidelines for Physical Planning

2.4.1 Banjul

As the spatial potential of Banjul is very limited, there are hardly any possibilities in allocating space for new purposes. Therefore, the development strategy should concentrate on stabilizing the existing land use, except for the port and harbour area and for industries depending on a close neighbourhood to the port; for those some land can be claimed around the junction of Bund Polder Road and the main highway.

Port Area

The port of Banjul will have an increasing significance for the national economy. The impact of this will lead to additional spatial demand. One among several possibilities in meeting this spatial demand will be the reclamation of offshore land adjacent to the present harbour, as it was proposed in the second Port Project Masterplan. The port expansion might also require a relocation of part of the "Half Die" housing area to the present Shell Tank Area, provided the tanks can be moved to the above mentioned new industrial area around the Bund Polder Road.

2.4.2. Kombo St. Mary

Kombo St. Mary will be the main urban development area of the Greater Banjul Area. Therefore, the spatial requirements will be extensive and more and more diversified and modified by a number of special land uses.

Residential

The main land use will be of residential use resulting in a large demand for space for this purpose. The open land and the large number of undeveloped and under-developed plots within the urban and semi-urban settlements have a special potential for future residential requirements.

Commerce

Apart from improving existing commercial centres it is very important and necessary to create new smaller centres for the already existing and the planned new settlement areas to meet the basic demands of the population.

Social Amenities

As there is a lack of social facilities in the area, it is necessary to reserve locations for the present deficit and the future new demand.

Recreation

Generally, the present recreational activities are taking

place in the neighbourhood. Therefore, it is necessary to reserve sufficient space for such activities in the new settlement areas, as most of these activities are taking place on the roads and in the open spaces. In addition, seaside recreation is becoming increasingly significant, especially for the younger generation. Therefore, it is important to create sufficient access to the beaches and to keep the greater part of the Tourism Development Area free from private housing developments which might block free access to the beaches. Some space should also be reserved for recreational facilities such as sports-fields, play grounds and parks of different sizes.

2.4.3 Kombo North

Kombo North should be subdivided into two areas: One of them is the area along the Banjul - Brikama highway and the other is the rest of the District. This seems appropriate since developments will affect primarily the first area. It is this area which is being referred to below.

Residential

There will be an increasing demand for smaller residential plots, only partly with gardening possibilities. That means, the present land use which is more semi-urban in character will change into an urban one.

Commerce and Industry

Space should be reserved for smaller commercial areas supplying both residential areas and industry. Areas with easy access to the main highway should be reserved for industrial use.

Social Amenities

East of the village of Mandinari is the only area which could be made accessible from the Gambia River and therefore possesses the potential for becoming a larger free trade or free industrial zone. It is the only site in the GBA with such access possibilities. Plots should be reserved for social facilities, especially for health and education.

Special emphasis should be put on the land use of the other agricultural and forestry areas, and the strategy for development should lead to a smooth development while protecting agriculture, forestry and the villages.

3 Sectoral Aspects of the Physical Structure

3.1 Housing

3.1.1 Problems, Constraints and Potentials

Even if the housing situation in The Gambia does not yet look as grim as in other countries, it is quite obvious that owing to the urbanization process housing problems are likely to become more and more pressing and may become a potential source of social and political grievances, especially in the cores of the older urban settlements like Banjul, Bakau and Serekunda. On the other hand, more and more spontaneous settlements are springing up on the fringe of settlements without any planning and without any basic needs facilities being provided for them.

The Government should therefore focus on policies and actions to tackle the existing and to prevent the foreseeable housing problems.

I Felt Problems

According to the social science surveys carried out by the planning team, the felt problems mainly are:

- crowding in congested compounds (density problem)
- social frictions due to lack of privacy
- lack of facilities and/or their overutilization, especially with regard to water supply for drinking, washing and toilets and to kitchen facilities (utilities problem).

a) The Density Problem

Although the highest overall net densities in parts of Banjul of around 600 inh/ha are not extremely high by international standards, there are many significant cases of overcrowding in terms of persons per room, per toilet or other facilities.

For a growing share of the population, the minimum basic needs of having an own place to sleep, sufficient room to store and to lock up private belongings, a safe shelter from rain and enough space to meet with other people, to cook and to eat outside the house are not available. In this context, it is essential to recall that social life in The Gambia is not centred on a set of rooms, but on the open space outside the house. European living standards and privacy concepts, relevant only for the upper class members of the society, are misleading when considering housing for the majority of the Gambians.

The following table gives some quantitative information on densities from compound sample surveys in Serekunda, Bakau and Banjul.

Table 6: Housing Density

	Mean number					% of households		
	per compound Rooms	Households	People	people per Room	Household	Per room over 2.5	3.5	in one room
Serekunda [x]	7.3	2.4	13.3	1.8	5.5	16	5	21
Banjul [x]	8.8	3.1	15.6	1.9	5.0	27	11	27
Old Bakau	-	3.4	2.4	-	7	-	-	-
Fajara/New Town	-	1.4	8.9	-	6.1	-	-	-
	-	2.2	16.2	-	7.5	-	-	-

[x] Source: M. Peil: Cities and Suburbs. London, 1981, Page 125
all other data: own surveys 1983

There are, however, some constraints to solving the density problems:

- The natural growth of families is one of them. The figures under "people per household" in the above table indicate an increase of about 2 persons per household between 1981 and 1983. If family members or whole families are not willing or able to move out of a compound, crowding cannot be avoided, since there is - at least in the densely built-up areas - no space for expanding the compound itself.

- It seems that crowding is likely to occur even if there was enough room for the nuclear family because family visitors and/or visitors from the same place of origin tend to stay for periods of months or even years if there is enough room for them. There is a strong normative pressure on urban residents to accept new arrivals and help them to get on their feet, even though this results in a deterioration of housing conditions for themselves.

- People's inability to pay for more generous living space which is only to be found in distant locations on the fringes of existing settlements, thus increasing the transport problem, limits the possibilities of an effective settlement policy for congested areas. Hence, in the case of The Gambia, it is more advisable and economical to upgrade such areas physically rather than trying to push out the low-income residents for the sake of ensuring a certain standard of density. International experience has shown that such resettlement policies tend to create many new problems because they disrupt the economic and social network on which the low-income population depends. The consequence very often is that resettlers return to the original site, or, if this is physically impossible, aggravate the situation elsewhere.

b) <u>The Utilities Problem</u>

Surveys have shown that most people can cope with a relatively low standard of utility services, but that certain basic essentials have to be met to avoid social conflicts and health hazards.

These are:

- sufficient toilet or latrine facilities;
- sufficient individual bathing places;
- a cooking place for each sinkiro/household.

The provision of water, be it on the compound itself or outside, is more important than the provision of electricity.

The lack of utilities is, of course, worst in the outlying spontaneous settlements; to provide such areas with basic infrastructure would be most difficult

and costly due to their scattered and irregular lay-outs and their (initially) low densities.

Insufficiency and/or over-utilization of utilities is to be found more frequently on renters' compounds than on owner-occupied compounds.

Outside the compounds, sanitation and waste collection services are generally poor (with some exceptions for waste collection), particularly in the dense neighbourhoods in the north-western part of Banjul, in Bakau and in Serekunda. Lack of surface water drainage creates considerable health hazards in the rainy season (cf. also Chapter 2.3 on infrastructure).

II General Problems

In addition to the immediately felt problems of the low-income population, there are some general issues linked with the housing question:

- Security as to land tenure and land availability;
- housing finance;
- rental accomodation;
- ethnicity issues.

a) Land Tenure and Land Availability

Unlike in other countries, land tenureship in The Gambia de facto is fairly secure, even for spontaneous settlers. If they have acquired their plots from the local Alkalolu or if they can otherwise claim customary ownership of their plot, land can hardly be taken. Within the GBA, there is, however, a lack of legal tools (outside Banjul and Kombo St. Mary) to prevent unauthorized land allocation by the Alkalolu and land hoarding by influential people. There is also a reluctance on the authorities' side to fully use the existing legal instruments in order to prevent spontaneous settlements and other forms of irregularities.

However, for the case of spontaneous settlements and land invasions, it is much wiser to be flexible in the application of regulations, otherwise the problems will emerge elsewhere. On the other hand, increasing land seizures and urban sprawl cannot just be tolerated by a "laissez-faire" attitude, but have to be counteracted by:

- provision of enough planned and "legal" plots;
- restrictions of plot sizes;
- providing for empty plots in existing lay-outs to be developed.

b) Housing Finance

In general, a formal housing finance in The Gambia is only at the reach of people having a regular income. Apart from SSHFC and the commercial banks there are no other institutions to finance house building costs. There are also severe restric-

tions on the refinancing resources of the creditors or the Government due to the fact that land in The Gambia (like in most African countries) has little or no monetary value. In addition, land taxation being insufficient, only very small revenues can be generated which potentially could be used for reallocation to housing finance and investment funds (this problem is presently being tackled on a pilot basis by the World Bank sponsored Urban Management and Development Project). As long as the Government cannot provide budgets to promote housing finance, its interventions must be restricted to cost-free measures of establishing order.

In order to improve the access of low-income groups to funds for housing, it might be a worthwhile attempt to develop traditional forms of credit and savings clubs ("susu") into some kind of Saving or Loan Associations for housing on a cooperative basis to complement the financing tools of the SSHFC.

Another effect of the inappropriate housing finance situation is the evident problem of undeveloped plots and unfinished houses, resulting in a waste of space and capital ("investment ruins"). It seems as if both borrowers and creditors frequently overestimate their potentials and underestimate the costs. The dimensions of projects often indicate that people are thinking too big rather than applying a step-by-step development approach. Possible remedies may be a better scrutiny of borrowers' solvency and good standing, but also the establishment of a Housing Advisory Service offering assistance in both financial and technical issues.

c) Rental Accomodation

There are no detailed quantitative data available on the proportions of rental and total housing supply so far. The surveys carried out indicate that the majority of tenants are living on a compound together with their landlords and that, in general, tenants seem to be more satisfied in owner-occupied compounds than in those where there are tenants only. Problems of crowding, overutilization of facilities and social frictions drastically increase with the size of the compounds and the number of houses, flats or rooms to let; some few owners seem to be quite ruthless in letting every space in their compounds for the sake of profit-making which, of course, considerably deteriorates the standard of the dwellings. The fluctuation of renters is lower where the owner lives on the compound and facilities tend to be of better standard and to be better maintained. It is estimated that about 80 % of property owners in The Gambia are living on their own compound (with or without renters).

The provision of a sufficiently large proportion of rental housing is essential to accomodate seasonal migrants, newcomers to the town and those who cannot afford or do not want to acquire own property. In many cases rental accomodation is the only option for low-income people especially since rents have risen much more slowly than other prices.

A rental housing market in The Gambia has only developed over the past 30 years or so. Due to a more or less small-scale private land-lordism, rental housing is still relatively free of usury and other forms of tenant exploitation. Hence, this part of the overall housing supply is considered to have a potential for further development, but will require guidance and control.

d) Ethnicity Issues

Unlike some other African countries with multi-ethnic societies, The Gambia, in general, is characterized by a very tolerant atmosphere among the different ethnic groups. Apart from usually minor prejudices and teasing jokes, there are no major ethnic problems nor segregations. In Banjul and Serekunda, for example, 90 % of the multi-family compounds have residents of more than one ethnic group.

In areas in the Kombos which have urbanized only recently, settlements can be distinguished by certain ethnic majorities and minorities (cf. also Chapter B 1.1 on history). This can be explained by the tendency of immigrants settling down close to their old-established kin or friends of the same place of origin, normally of the same ethnicity.

However, with the growth of the urban area and due to the tight housing situation, even this indirect process of ethnic concentration is decreasing. It will become more and more difficult for a newcomer to chose himself the place where he would like to stay; he will rather have to settle down wherever he finds a place and can afford to do so.

3.1.2 Housing Policy Proposals

For practical reasons these policy statements have been broken down, according to their budgeting requirements, into policies which are more or less cost-free and those which require substantial budgetary or other funding. It would, in general, be very unrealistic to assume that the Government will be in a position to solve the housing problems by conventional and extremely costly approaches like social or subsidized housing, state or parastatal developers etc. Such approaches showed very limited effects even in more affluent economies.

The policy statements mainly refer to the urban poor or low-income groups, if not stated otherwise. Policies usually have to be different as they

are geared to different target groups. Therefore it is argued that for the middle and higher-income groups no promotional government housing policies will be required unless these groups want to invest in rental housing which is affordable to low-income groups.

Hence, policy proposals must

- be relevant for the low-income groups forming the majority of the population;
- be capable of implementation with minimal subsidies, mainly utilizing the country's own resources;
- be based on a maximum of understanding of the existing situation under its social, cultural, economic and physical aspects;
- be able to be administered without the need for a high degree of sophistication and continued support from outside expertise;
- be realistic, i. e. must be implementable within the existing administrative and executive set-up and not require fundamental legal or organisational reforms;
- be implementable within the shortest possible time;
- be capable of modification with increasing experience and change of external factors;
- be reapplicable, in form and content, to other sites in the future.

I. "Cheap" Policies

a) Since the provision of suitable land is the basic requirement for a housing policy, the government should claim large areas for government land, subdivide it into lay-outs and demarcate it for housing areas giving preference to low-income groups and "legal squatters". Later on the areas could be upgraded by community and self-help action, if no other means are available. Land titles should be issued stipulating the conditions of tenureship.

b) People should be allowed and encouraged to build their shelter on their own, even if the initial house does not immediately meet the building standards and no utilities can be provided. It should be accepted that low-income shelter built through self-help might appear like a shanty town. Only gradual improvements over the years should be imposed by the land title, and sufficient time and technical advice should be given for upgrading the house to a minimal standard required to safeguard structural soundness, a certain fire security and to avoid health hazards.

c) Technical advice on the use of local materials, construction techniques and cost-effective designs should be made available by the government as well as on the regulations to be followed and on financial matters.

d) In order to promote social integration, a certain heterogeneity in the

composition of each neighbourhood as to ethnic, status and income groups should be safeguarded by applying appropriate criteria in the land allocation procedure. As a consequence, housing development areas designed for specific groups within a narrow range of income such as in Fajara or the Ganoc Housing Estate should no longer be encouraged.

In the same manner, segregated government quarters like "Mile 7" should neither be replicated nor extended. Such housing schemes should be limited to the indispensable minimum in the Greater Banjul Area because they absorb too many funds and contribute little to solving the broader housing problem.

e) The rental housing market should be encouraged to some extent, especially if the owner lives with renters on the same compound. This could be achieved by land tax reductions for such owner occupiers who wish to invest in rental housing.

However, this market should be controlled in order to reduce usury and speculation

- by allocating no more than two housing plots to one owner in the whole of the Greater Banjul Area;
- by providing some legal protection to the tenants against unfair contracts and eviction without reasonable periods of notice;
- by rent control to set and monitor standards of cost covering rents and acceptable profit margins.

f) Undeveloped and underdeveloped plots should be re-entered and subject to compulsory liquidation if the owner fails to develop the plot within a given period of notice. Stricter criteria should be introduced and gazetted as to the exact definition "development of a plot". No lease documents should be given out without a development clause.

II. Expensive Policies

a) The above-mentioned strategy of allowing for "legal squatters" on surveyed plots could be complemented by the Government providing primary infrastructure and financial or building material assistance to settlers, if funds are available. At best, the Government could apply a strategy of providing sites and services which in the ideal case should create sufficient revenue to replicate similar programmes on other sites. The crucial point, however, is to generate enough revenue from land taxation and utility fees to be in a position

- to establish a revolving investment fund;
- to exempt certain areas

- and desirable projects from these taxes (e. g. self-help housing cooperatives, small private investments in rental housing).

b) Incurring of high expenses could be avoided by the upgrading and maintenance of existing settlements which is less costly than developing new areas. In addition, this will enhance political and psychological identification with the neighbourhood and the community in general. In existing settlements it is also relatively easy to mobilize self-help contributions to communal work since the traditional "kafo-work" still subsists to some degree. If the beneficiaries are involved in the identification and execution of improvement projects, they often voluntarily contribute at least by providing free labour.

In principle, public funds should only be allocated if and when private efforts can be mobilized or if revenue can be generated from the allocation.

3.1.3 Guidelines for Physical Planning

In order to contribute to the above stated policies and objectives, the following guidelines were derived and applied to the Physical Development Plan:

I Provision of Land for Housing

Housing can be made available

- either on new plots in new areas adjacent to the existing settlements
- or by densification of the existing settlements e. g. those with a low density only.

a) New housing areas should be located as closely as possible to existing concentrations of work-places and services because increasing transportation costs both for passenger transport and the supply of utilities are incurred due to the growing size of settlements.

b) As many areas are built-up in a scattered manner and with low density, as many unused plots as possible should be put to use. Especially for low-income groups depending on informal jobs and for small scale traders and craftsmen, it is essential to find central locations anyway.

c) By limiting urban sprawl and by densifying the settlements the Government should contribute also to the preservation of natural resources (cf. chapter B 2.4 on land-scape).

II Layout Principles

a) Housing plots have to be sufficiently large to

- accomodate at least one household (average 7 - 9 persons)

- provide at least space for the minimal basic needs.

b) When detailing the strategic recommendation of the Physical Development Plan by Action Area Plans, the appropriate number of plots to accomodate extended families has to be identified and provided for.

c) Land reserves for social facilities have to be kept free. The number and the standard of such facilities to be provided should be slightly above the present situation. Maintaining the present standard in the future will already be a valuable achievement.

III Design Standards

a) The plot sizes should range

- from 250 - 500 m² in Urban Areas
- from 400 - 800 m² in Semi-Urban Areas
- up to 2500 m² in Village Areas.

The plot ratio (built-up area as part of total plot area) should not exceed 50 % in general; no more than two storeys for house building should be permitted.

b) Further standards for the lay-outs of housing areas should be established when setting up Action Area Plans; these standards should deal with:

- the maximum number of inhabitants using one toilet/latrine
- the provision of cooking places and/or kitchen houses for each sinkiro/family
- the provision of a bathing place for each family
- the minimum distance to be kept between compound wells and latrines, eventually stipulations on the location of wells.

In the Action Area Plans also exception from the rules may be granted such as multi-storey buildings etc.

3.2 Economy

3.2.1 Problems, Constraints and Potentials

An analysis of the economic situation in the Greater Banjul Area (cf. detailed description and data in First Draft Report Chapter 5, pp 42-99) shows some unfavourable perspectives for the future (formal) employment situation in general, since it is very likely that the forecast population increase will overshadow the economic growth.

Apart from this overall problem, the following difficulties exist from the physical planning point of view.

I Agriculture and Gardening

The agricultural development in the GBA has already more or less reached its limits in terms of spatial expansion. There is a tendancy of increasing land use conflicts with forests and other protected areas on the one hand, whereas, on the other hand, agricultural

land is encroached by urban sprawl and subject to be converted into built-up areas.

This problem has to be considered with special care since not only in The Gambia as a whole, but also in the GBA agriculture is a vital primary and secondary source of income for the vast majority of the population.

The necessity of increasing food production grows proportionally to the population, especially if, at the same time, the economy of the GBA is changing from subsistence to more or less urban forms of economy with a more distinct division of labour. As a result, more food has to be produced on the same or even a decreasing area of land. Otherwise the degree of self-sufficiency of the planning area in food production will be reduced and must be compensated for by increasing food production further up-country.

II Fishery Resources

At present, the fish resources are not yet fully utilized. However, considering the various fish processing projects at present applying for approval, this situation may quickly change towards a trend of over-exploitation, especially with crustaceans. From the town planning point of view, the location of fish processing and cooling facilities becomes difficult, if direct access to the sea is required. But since this seems to be a dispensable prerequisite, it is more reasonable to locate part of these facilities in the Kanifing Industrial Area.

III Industry and Commerce

There is a strong imbalance in the areal distribution of non-agricultural workplaces with a concentration on Banjul City. This is also the reason for the high amount of commuter traffic and the required capacity increase of the long infrastructural "umbilical" from the mainland of the Kombos to the outlying Banjul Island. Also the congestion of Banjul City in terms of traffic and lack of land reserves is likely to increase due to the concentration of urban functions to this spatially limited island.

IV Informal Activities

The provision of land for informal manufacturing, commerce and trade activities tends to create locally limited land use conflicts. But since informal activities play a major part in the overall economy and deserve to be promoted rather than prohibited, such minor land use conflicts should be tolerated. A major problem of lack of space exists in some markets, especially in Serekunda. Rather than letting this market grow further, other decentralized markets should be promoted and/or expanded.

V Tourism

No major physical planning problem is encountered in the location of tourism facilities due to the generous Tourism Development Area (TDA) reserve. This reserve is to be redefined and should accomodate other compatible uses. It should not, however, be extended further southwest than up to the Brufut Heights (near Ghana town).

This coastal strip, however, should be kept free from all physical developments other than hotels and compatible uses and related leisure facilities (including nature reserves like Bijilo forest park). Any new facilities should, just like the existing ones, be grouped together with park-like areas in between; this arrangement is a touristic asset which gives The Gambia a comparative advantage over similar international beach resorts which are often too densely built-up and intruded by private settlements reducing accessibility and free movement. Industrial activities like the sand digging near Bijilo forest park should be banned within the TDA (cf. also chapter 2.4 on landscape).

3.2.2 Guidelines for Physical Planning

General Guideline

The contribution of Physical Planning to the overall economic promotional activities of the Government is limited to creating and safeguarding the locational prerequisites for enhancing production and commerce and ensuring accessibility for the workforce to the workplaces and for the producers to the markets, in order to minimize transport costs for goods and people.

In order to enhance the potential for establishing small-scale and informal economic activities, sufficient flexibility in the land use zoning should be allowed in compounds and in mixed use zones.

Special Guidelines for the Greater Banjul Area

I Areal Distribution of Economic Functions

The port-related functions and the associated banking and commercial functions of Banjul shall be enhanced. The administrative production and partly the housing functions, however, should be redirected to the Kombos, mainly to Kanifing (industrial area and new administrative centre) in order to bring the jobs to the main agglomeration and to minimize commuter traffic.

II Resource Protection

a) Agriculture, gardening and forestry areas are natural resources for the nutritional base and have to be protected by limiting the urban sprawl. Intensifying agriculture and gardening becomes a paramount necessity, since exploiting new agricultural areas and transforming bush and forest land into farmland have already reached their

ecological limits (cf. chapter B 2.4 on landscape).

b) Existing and future water production well fields are to be kept free from any new building constructions and should be re-afforested, wherever possible, with fruit trees to make economic use of the water production zones.

c) Mineral, sand and clay deposits are to be kept free from any new buildings to facilitate future exploitation.

III Safeguarding of Locations

a) Port-related economic and commercial activities should be located by taking due account of the requirement for access by sea, for instance:

- in the proper special port area
- in the Mile 1 to 2 area (around junction of Bund Polder road and main road)
- east of Mandinari.

b) The Commercial Area should be located close to the Airport.

c) Informal and small-scale industrial and commercial activities should be encouraged by mixed-used zoning in favourable locations along arterial roads and at certain junctions.

d) The Tourism Development Area should be kept free from any other uses except compatible ones, the low density of tourism facilities should be maintained as a touristic asset.

IV Intensified Use of Existing Industrial Area

The Kanifing Industrial Area has to be brought to full use before any new industrial areas are developed. New industrial areas only are to be developed if and when

- the existing Kanifing area is fully used and developed
- the proposed extension of that area is also fully used.

3.3 Infrastructure

3.3.1 Water Supply

At present, the water supply for the Greater Banjul Area is obtained primarily from the Koto Basin aquifer, a clean sand aquifer found at depths of 10 to 25 metres below the surface. Water from this aquifer is pumped from 12 boreholes located in three different well fields; Fajara (5 boreholes), Sukuta (2 boreholes) and Wellingara (5 boreholes). A larger aquifer, that of the Tanji basin, underlies the southern portion of the GBA. It is presently tapped by one borehole at Yundum. Studies carried out for GUC estimated the total potential yield of the Kotu and Tanji aquifers

at 13.85 million gallons per day (m. g. d.).

Water from the 12 boreholes in the Kotu Basin well fields is piped to two treatment plants, Serekunda Works and Fajara Works. From these plants it is then distributed to Banjul and the more urbanized portions of Kombo St. Mary. The Yundum borehole has no treatment facilities, and it supplies the airport and limited areas of Kombo North.

In 1983, there were an estimated 106,000 domestic consumers in the Greater Banjul Area (59 % of the total population). Of these consumers it is estimated that 44 percent use public standpipes, 43 percent compound yard taps and 13 percent have full plumbing. The remaining population obtain their water from individual compound or village wells.

Total water consumption in 1983 was 3.6 m. g. d. Per capita consumption (on the basis of domestic consumers) ranged from 10 g. p. d. in Kombo North to 33.6 g.p.d. in Banjul and 38.1 g. p. d. in Kombo St. Mary. Higher figures for Banjul and Kombo St. Mary reflect the sizeable water demand by hotels, commerce and industry, and government. Although the theoretical maximum total yield obtainable from the 13 boreholes in operation is 3.84 m. g. d., the operational limit of the present system is 3.55 m. g. d. Consequently, the present system is being taxed to its maximum output.

Future consumption of piped water depends on the extent of the network constructed and the number of households connected. A recent study of the urban water supply for Greater Banjul by Lewin, Fryer and Partners provided estimates of future water demand. In the year 2000, with a regional population of 360,000 and all but 10,500 served by the piped water system, the total demand is estimated at 12.5 m. g. d., or over three times the existing consumption.

The tightness of the present demand versus the supply situation has become evident in the planning for the World Bank sponsored Urban Management Development Project. The residential "Site and Service" project proposed for Kanifing plus the up-grading proposals for Serekunda will create additional demands for water which cannot be met without some expansion of the system. As a result, certain emergency works to increase the water supply by 0.9 m. g. d. have been included in the Urban Development Project. The water distribution network will be expanded in Serekunda and Kanifing East, and three additional boreholes have been drilled in the Sukuta North field.

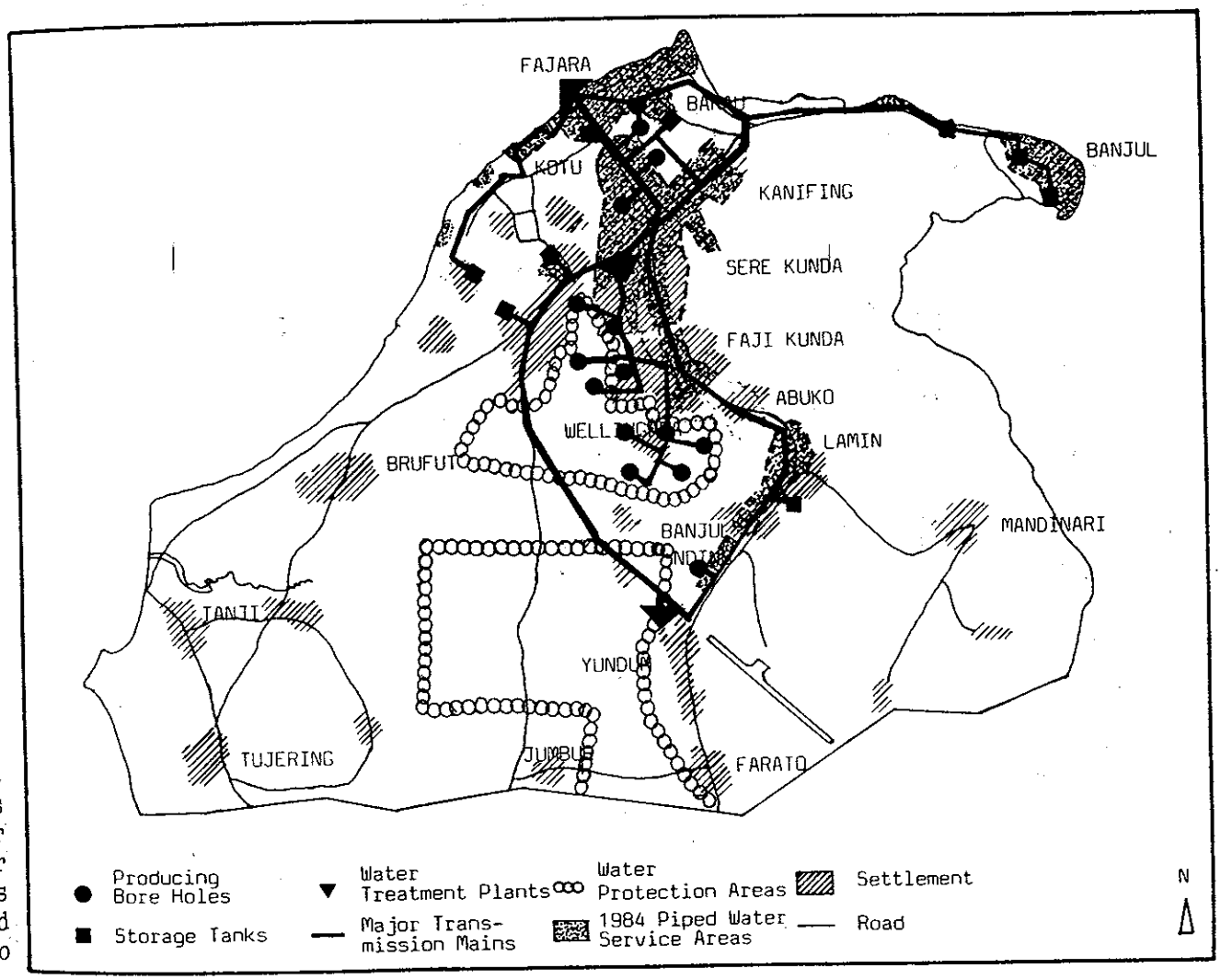
To meet the expected demand for the piped water forecast for the year 2000, the report by Lewin, Fryer and Partners proposes a programme of major works to increase the water supply system. Phase 1 of this programme would be commissioned in 1986, and is designed to provide an additional 2.1 m. g. d. for a total consumption of 6.6 m. g. d. This increase in water supply is needed to provide the additional water required for operation of the Banjul Sewerage Scheme as well as permit the staged extension of the water distribution system to urban areas earmarked for densification and upgrading.

The work would include: 7 new

production boreholes in the Tanji Basin aquifer near Yundum, a new treatment works at Yundum, a new transmission ring serving Lamin, Kanifing, Serekunda and Sukuta, plus expanded facilities for storage and local distribution.

These zones have been identified on the land use map, however, their exact boundaries should be worked out in consultation with GUC as part of the area action plans.

Figure 4: Water Supply and Distribution



Guidelines

1. Water protection zones should be established to protect existing and future well fields from urban development which could potentially lead to contamination of the aquifers.

2. The development of the increased water supply system as proposed in the Emergency works of the Urban Management and Development Project, and the Phase 1 programme recommended by the Lewin, Fryer and Partners report should be implemented on schedule to avoid serious

water supply shortfalls.

3. Extension of water distribution networks should be jointly worked out by GUC and the Physical Planning Department, and detailed in the Action Area Plans. Priority should be given to areas marked for densification and upgrading of services together with areas around producing well-fields which suffer a drop in water table.

3.3.2 Sewage Disposal

Banjul

In Banjul, septic tanks, cess pits (pit latrines) and a night soil system are presently used for sewage disposal. Government quarters and some private compounds use septic tanks. These are emptied on a regular basis. Densely populated areas without septic tanks use the night-soil system. Sanitary wastes are deposited in special carts which are emptied daily. Other compounds rely on cess pits.

A study completed in 1975 by the United Nations Development Program and the World Health Organization recommended that a standard water-borne sewerage system be installed in Banjul. Separate sanitary and storm drainage systems are proposed. The planned sanitary sewage network consists of one main sewer running from the southern to the north-western corner of Banjul with lateral tributary sewers joining it at intervals. A new pumping station is required at Albion Place with a second, at Box Bar Road, where the sewage is pumped into a sea outfall.

The system has been designed to accomodate a population of 67,000 and the estimated cost is 36 million dalasis. Work on the project is expected to begin in 1985.

Kombo St. Mary/Kombo North

A combination of septic tanks and cess pits is used in Kombo St. Mary and Kombo North. Bakau, Fajara and Serekunda have a fair percentage of septic tanks. More rural areas rely primarily on cess pits.

Assuming favourable soil conditions, cess pits can be safely used for population densities of up to 200 inhabitants/hectare. Most settled portions of Kombo St. Mary and Kombo North have population densities well below this figure, however, in the Serekunda area, this density has been reached.

Sewage Disposal practices in Kombo St. Mary/Kombo North have not yet constituted a health hazard, in the opinion of the Medical Officer of Health. He believes that inadequate surface drainage is a much more serious problem. However, GUC water supply engineers have expressed some concern over the potential contamination of the aquifers supplying water to the urban area which could result from densifying populations, continuing to rely on ground disposal methods for sanitary sewage.

The UNDP - WHO report on sewerage and drainage for the Banjul/Kombo St. Mary area recommended that a water-borne system be planned for installation in those sections of Kombo St. Mary which will be developed to population densities in excess of 200 inhabitants per hectare, or will be used for

industrial or administrative purposes. However, because of the investment costs required to develop a water supply system sufficiently large to permit full plumbing in most compounds as well as finite limits to the amount of groundwater available in the GBA, the Department of Physical Planning advocates that a more cost-effective solution to the sewage problem be sought.

The sewage treatment plant at Kotu was built to treat water-borne sewage from coastal hotels. However, the plant is presently working far below its capacity and there is little prospect that enough additional hotels will be constructed in this location to have the plant working at full capacity. The potential exists to equip the Kotu-east layout with a water-borne sewerage system linked to the existing plant, provided that the cost is competitive with other treatment options.

The Physical Development Plan does not propose specific solutions to the problem of sewage disposal in the GBA. Solutions require a more detailed study on a local settlement basis and will be included in the Action Area Plans.

Guidelines

1. Alternate options for sewage disposal should be reviewed in conjunction with land use proposals and the expected population densities on a local settlement basis.

2. The review of alternate options for sewage disposal should include the following criteria:

   - the separation of the disposal and treatment of sanitary wastes from surface water drainage;
   - the reuse of water and wastes emanating from the treatment process;
   - the conservation of groundwater resources and the protection of the water quality:
   - the minimization of capital and energy costs;
   - the development of self-help programmes for improving sanitation in existing settlements.

3.3.3 Surface Water Drainage

Poor surface water drainage in both Banjul and parts of Kombo St. Mary is a serious health hazard in the opinion of the Medical Officer of Health. The problem is especially serious in the Campama section of Banjul and the centre of Serekunda where no drains exist at present.

In 1975, the Kocks report on Sewerage and Drainage for Banjul and Kombo St. Mary made a series of recommendations for surface drainage works.

For Banjul, the report concluded that the existing drainage system would be adequate with a few modifications and proper maintenance. It recommended that:

- sections of the Box Bar and Ring drains be enlarged,
- new pumping equipment be installed in the Bund Polder pumping station,
- the drainage system be extended to include Campama.

Most of these improvements will be carried out as part of the Banjul Sewerage Project, however, it will not include provision of drainage for Campama. It is important that this latter improvement be given high priority.

In Kombo St. Mary and Kombo North, only Bakau has a few drains which are often ineffective due to poor maintenance and cleaning. The Kocks report concluded that drains are not needed for low density residential areas like Fajara, however, it recommended a system of storm drains for Serekunda where the level of urban development is denser.

As part of the Urban Management and Development Project, storm drainage will be improved in Bakau and introduced into the central portion of Serekunda and the Kanifing "Site and Service" project. A staged programme for extending surface drainage along major streets to those areas designated for urban development and densification should be worked out jointly by GUC and the Physical Planning Department. Drainage plans for individual settlements should be detailed as part of the Action Area Plans.

Guidelines

1. Priority should be given to the provision of adequate surface drainage for Campama in Banjul.

2. Surface drains should be provided along major streets in all areas designated for urban development.

3. A staged programme of providing surface drains should be detailed in the Action Area Plans.

4. An effective programme for the cleaning and maintenance of surface water drains should be introduced.

3.3.4 Energy Supply

Electric Power

Within the Greater Banjul Area, electric power is generated at two diesel engine power plants; Half-Die in Banjul, which has a present capacity of only 1 MW, and Kotu which has a capacity of 6.9 MW. A new generator is being installed at Kotu which will add an additional 6 MW in 1985, bringing the total capacity to 13.9 MW.

At present, the generating capacity is insufficient to meet the demand, and this situation will continue in the foreseeable future. The estimate for the annual maximum demand at the end of 1986 is 13.9 MW - equal to the generating capacity, which leaves a serious shortage when the large 6 MW generator is shut down for annual maintenance.

GUC hopes to have a fourth generator installed at Kotu by 1987, but this will depend on available funding.

The electricity distribution network covers most of the more urbanized portions of the GBA i. e. Banjul, Bakau, Fajara, Kanifing, Latrikunda and Serekunda. Service beyond these areas is concentrated along the main transmission lines. Older portions of the distribution network are in poor condition, causing heavy line losses. As part of the World Bank Urban Management and Development Project, funds

will be provided for some upgrading of distribution networks in Serekunda and Bakau, as well as the provision of street lights.

GUC plans for expansion of the electric power distribution system include the following major items:

- extension of the present 11 KV line serving the Ganov Housing Estate at Bakoteh and Sukuta with a loop back through Bundunka Kunda to join the 11 KV line to Brikama;
- provision of a third distribution line through Banjul;
- modernization of older distribution networks to cut down on line losses;
- eventual upgrading of the 11 KV line to Brikama to 33 KV and the extension of 11 KV loop to Sanyang and back through the coastal villages to Kotu.

Guidelines

1. In case of the electricity distribution network, priority should be given to those areas proposed for densifica-

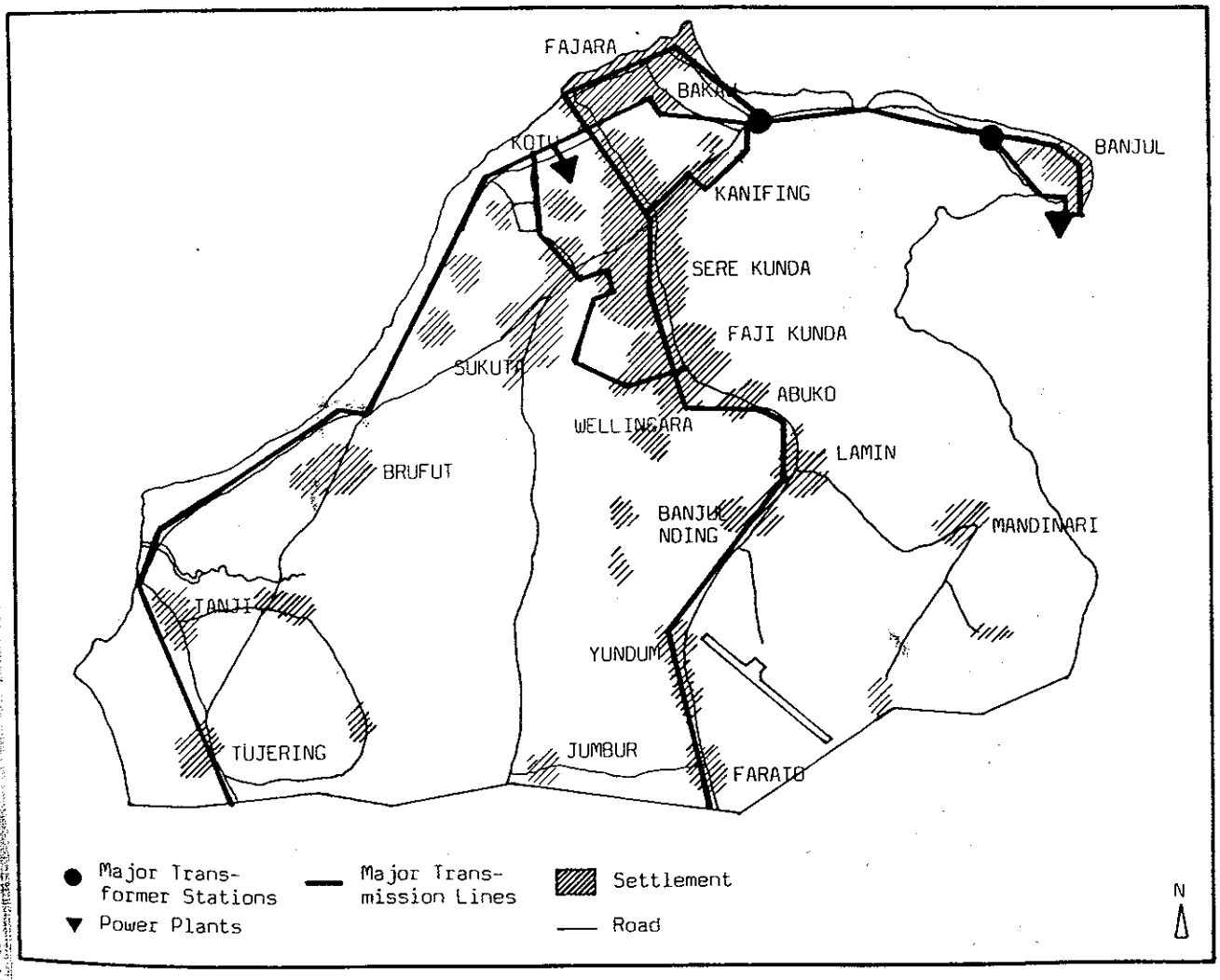


Figure 5: Electric Power Distribution

tion and urban development. Phasing can be worked out as part of the Action Area plans.

2. Security strips of up to 20 m wide should be reserved along routes for high tension lines (33 KV). A 10 m width would be adequate for 11 KV lines.

3. Street lighting should be provided in those areas proposed for densification and urban development. The lighting standards and phasing should be worked out in the Action Area Plans.

Firewood

Firewood accounts for 84 percent of primary energy consumption in The Gambia. Even in the urbanized portions of the Greater Banjul Area, it remains the predominant energy source for cooking. As a consequence, the production of fuel wood is an important requirement. Although most of the forestry activity will be concentrated outside the GBA, it is important that forest reserves within the GBA be strictly managed and their exploitation controlled. The potential also exists for reafforestation of buffer zones and greenbelts separating the various urban communities. Reafforestation areas will be defined as part of the Action Area Plans.

3.3.5 Solid Waste Collection and Disposal

At present, collection and disposal of solid waste in Banjul and Kombo St. Mary is carried out by a private contractor. Some waste is collected from individual compounds having registered dust bins; however, most domestic waste is picked up from public waste depots distributed throughout residential areas. In addition, the service collects waste from hotels, hospitals, markets and government buildings, and cleans streets and drains.

The Kocks report on Sewerage and Drainage for Banjul and Kombo St. Mary also studied the problem of solid waste management in 1974. Some of the more significant problems identified were:

- irregular cleaning of streets, stormwater drains and solid waste depots,
- uncontrolled dumping, and
- pollution of the Bolongs through the waste tip at Mile 2 in Banjul.

These problems are still existing. In addition, the waste dumping site serving Kombo St. Mary on the southern fringe of Bakau has exceeded its capacity and is beginning to cause environmental problems.

Guidelines

1. The waste collection service should be efficiently organized and controlled to ensure regular collection and cleansing in all urbanized portions of the GBA. In case of service extensions priority should be given to areas designated for densification.

2. Additional neighbourhood waste depots are required in the urbanized portions of Kombo St. Mary to introduce a waste collection system similar to the one

in Banjul. These depots should be conveniently located so that walking distances are reasonable. Fencing around depots in Banjul should be repaired.

. The Bakau waste dump should be closed and replaced by a sanitary landfill operation in the Bakoteh quarry, south of Manjai Kunda.

. To ensure efficient transportation of wastes, additional dumping sites will be identified within the GBA as part of the Action Area Plans. For the time being the Mile 2 waste dump shall continue to be used; however, as it is to be feared that the proportion of chemical (batteries, plastics etc.) and medical waste substances is increasing and the consequent pollution of the Bolong becomes intolerable, the Action Area Plan for Banjul shall include a new, safer location for the waste dump.

. Unauthorized dumping of waste in all other areas should be strictly prohibited.

. The current administration of solid waste disposal should be renewed with a view to involve the local authorities in the areas as much as possible.

3.3.6 Roads

For purposes of the Physical Development Plan, two categories of roadways are defined:

i) Highways - referring to roads through unbuilt-up rural areas with the function of providing an all-weather network of roads that permit fast and convenient transportation between centres of activity on both international and national scale;

ii) Streets - roads through built-up urban areas which serve two purposes to varying degrees: mobility and access to land. Three classes of streets are recommended on the basis of how they perform these functions: arterial, collector and local streets.

It is recommended that design standards for particular roadways be based on anticipated traffic flows: more heavily travelled roadways would require higher design standards. For highways, the recommended standard for road reserves ranges from 30 m to 50 m. Arterials, the main urban roadways, have their primary function to move larger volumes of traffic over long distances; land access is secondary. Their recommended road reserve is 20 m to 24 m. The function of collectors is to pick up traffic from local streets and conduct it to arterials. Their recommended road reserve is 16 m to 20 m. Local streets, serving mainly to provide access to property, have recommended road reserves of 10 to 12 metres.

The land use map for the GBA shows only two classes of roads, the National Highway and major roads and streets. This classification is based on the function these roads have in connecting settlements and providing a continuous transportation network rather than on their expected traffic loads and

technical design standards.

The National Highway is the main south-bank link connecting Banjul to Basse. Its present route passes through the principal settlements of Kombo St. Mary and Kombo North. A road reserve to the east of the urbanized area, 7.5 km in length from Old Jeshwang to Abuko, will allow relocation of the National Highway and permit through traffic to bypass the more densely settled portions of Kombo St. Mary. The network of major roads and streets in the GBA has been designed to link settlements in both east-west and north-south directions. It includes secondary highways in rural parts of the GBA and primarily arterial streets in the urbanized portions. The following new roadways are proposed:

i) extension of Badala Parkway: to the east through Kanifing to Old Jeshwang, and to the west to Serign Njagga and Sukuta(5.2 kms),

ii) a new road from Sukuta to Fajikunda through the Tallinding buffer zone (4.6 kms),

iii) continuation of the Kotu to Bakoteh road south to Latri-Sabiji (1.6 kms),

iv) a new road connecting Sukuta with Banjul-N'ding and Yundum (6.3 kms),

v) extension of the road from Management Development Institute to link up to Mile 7 road near Radio Gambia (1.5 kms).

Guidelines

1. Main roads through Serekunda will be reconstructed or resurfaced by the World Bank as part of the Serekunda upgrading project. Additional improvements to main roads should give priority to areas marked for densification and urban development.

2. Road reserves for major new roads should range from 20 metres to 50 metres in width, depending on the expected traffic volumes and speed. Details will be specified in the Action Area Plans.

3. In addition to the main roads mentioned above, a number of local streets will require upgrading, especially in areas marked for densification and urban development. Detailed proposals will be contained in the Action Area Plans.

3.3.7 Passenger Transport

Public passenger transport services within the Greater Banjul Area are provided by the Gambia Public Transport Corporation (G.P.T.C). The corporation operates approximately 75 buses on approx. 10 bus routes connecting Banjul with the major settlements of Kombo St. Mary and Kombo North. As a result, bus services are concentrated along the main Banjul - Serekunda - Brikama corridor with the exception of the one linking Serekunda to Bakau, and there is very little transferring from one route to another. This pattern of transport service reflects the present dominant position of Banjul as the employment and service centre of the region.

With increased urbanization of Kombo St. Mary and Kombo North, the shift of administrative, institutional and indus-

trial functions from Banjul to the Kombos and the construction of new major road links, the present public transportation system will require modification. In addition to increased passenger capacity, it will be required to offer a service that provides more opportunities for transportation between the communities of Kombo St. Mary and Kombo North with less emphasis on travels to Banjul.

In addition to the public transport system, taxis, vans and buses operated by the non-formal sector, have an important role in regional passenger transport. Because of the flexibility of these operations they can provide specialized transport services which the public system is unable to offer. The centre of private sector transport services is the local taxi park. As the Physical Development Plan forecasts the continued importance of private sector passenger transport, taxi parks are included in the provisions for expansion of settlements within the GBA.

3.4 Landscape

3.4.1 Problems, Constraints and Potentials

- Soil

The important soil groups to be considered in the planning region are of three types. The first soil type is a highly developed soil characterized by a high water carrying capacity, available nutrients, and temporal flooding during the rainy season. This soil type is located along the seasonally active water courses (Kotu Stream, Lamin Stream and the Tanji River) and is suitable for rice cultivation and dry season gardening. The second and third types are upland fertile and infertile soils. Despite some slight differences, these soils have the following characteristics in common:

- low chemical fertility
- poor structure and hard consistency
- sandy or loamy sandy surface horizon
- high porosity and good drainage
- high water storage capacity or the mineral components of the soil.

The fertile upland soils are located furthest away from the water courses and are suitable for cultivating maize, millet, and groundnuts. The infertile upland soils are the least suitable for agriculture because of insufficient drainage and lack of soil depth; this third type is mainly found in depressions and valleys.

- Water Resources

Two broad river basins (Kotu stream and the Tanji River) are responsible for draining the planning area. These river basins are generally dry except during the rainy season. There are three main groundwater reservoirs (10 - 25 metres below the ground with a depth of two to three metres) capable of providing the total water supply of the planning area with good quality water.

- Landscape Elements

The planning region features four different types of landscapes: mangrove swamp, forest, farmland, and shrub savana.

Approximately 90 km² of the Gambia River Estuary in the planning region are covered by mangrove swamps. The vegetation consists almost exclusively of avicemmia, a shrub-like plant of up to five metres in height. This landscape type is used for small scale oyster fishing and the felling of fuel wood. The roots of the mangroves prevent erosion of the soil along the estuaries. This area is also the habitat for tropical birds, reptiles and insects. The forests in the planning region can be defined as having a transitional vegetation consisting of tree and shrub savanna (free canopy of less than 10 %), open woodland (10 % - 50 % tree canopy) and forests (more than 50% tree canopy). The only tropical primary forest within the planning area is one which is being protected at Abuko Nature Reserve. No woodland can be found in the immediate vicinity of centres like Banjul, Bakau and Serekunda. Larger forest areas are situated south of the Tanji River.

Areas featuring intensive farming are characterized by farmland without trees or farmland with more than 10 % tree stands. The burning of vegetation to clear farmland has resulted in a selection of fire and drought resistent species consisting mostly of rhun palm, acacia and baobab.

The areas covered by shrub savanna are mostly used for extensive pasture farming and can also be considered a vital habitat for African flora and fauna. The vegetation consists of bush and grassland. Scattered trees do not grow higher than 5 metres.

In addition to these four main landscape types, there are the coastline and moist woodland in the valleys which should be classified as landscape types with characteristic features of their own.

The following urbanization problems either currently exist or are likely to come into existence within the planning area. These problems may either cause jeopardy to the ecological equilibrium of the area, impair natural resource potentials, or destroy the landscape.

1. Use of valuable agricultural land for non-agricultural purposes,
2. erosion of the coastline,
3. landuse conflicts, e. g. industrial and agricultural uses near Abuko Park or urban sprawl into gardening areas etc.,
4. contamination and depletion of groundwater,
5. salinization of fertile soils,
6. uncontrolled urban sprawl.

When trying to alleviate the above mentioned problems, it is important to remember to do so by taking into consideration the constraints of the existing socio-economic structure of the planning area and also the existing environmental conditions of The Gambia. In many cases it is the unavareness

of possible environmental hazards resulting from inappropriate land uses and the traditional way of allocating and hoarding land which set the limits to avoiding such problems. In addition, the necessity of cultivating and partly irrigating more and more land with shorter fallows for a growing population is a major constraint to protecting the water resources and the remaining tree stands. The latter are also endangered by the growing need for fuel wood (cf. also section 3.3.4 above).

In order to protect the environment and to use its resources as economically and carefully as possible, the following activities with long-term positive effects will be required:

- Improvement of the Government's land policies including planning and development control.

- Communication and education of the general public on environmental issues, in schools and training seminars, by films and radio broadcasts, also addressing the local and traditional leaders.

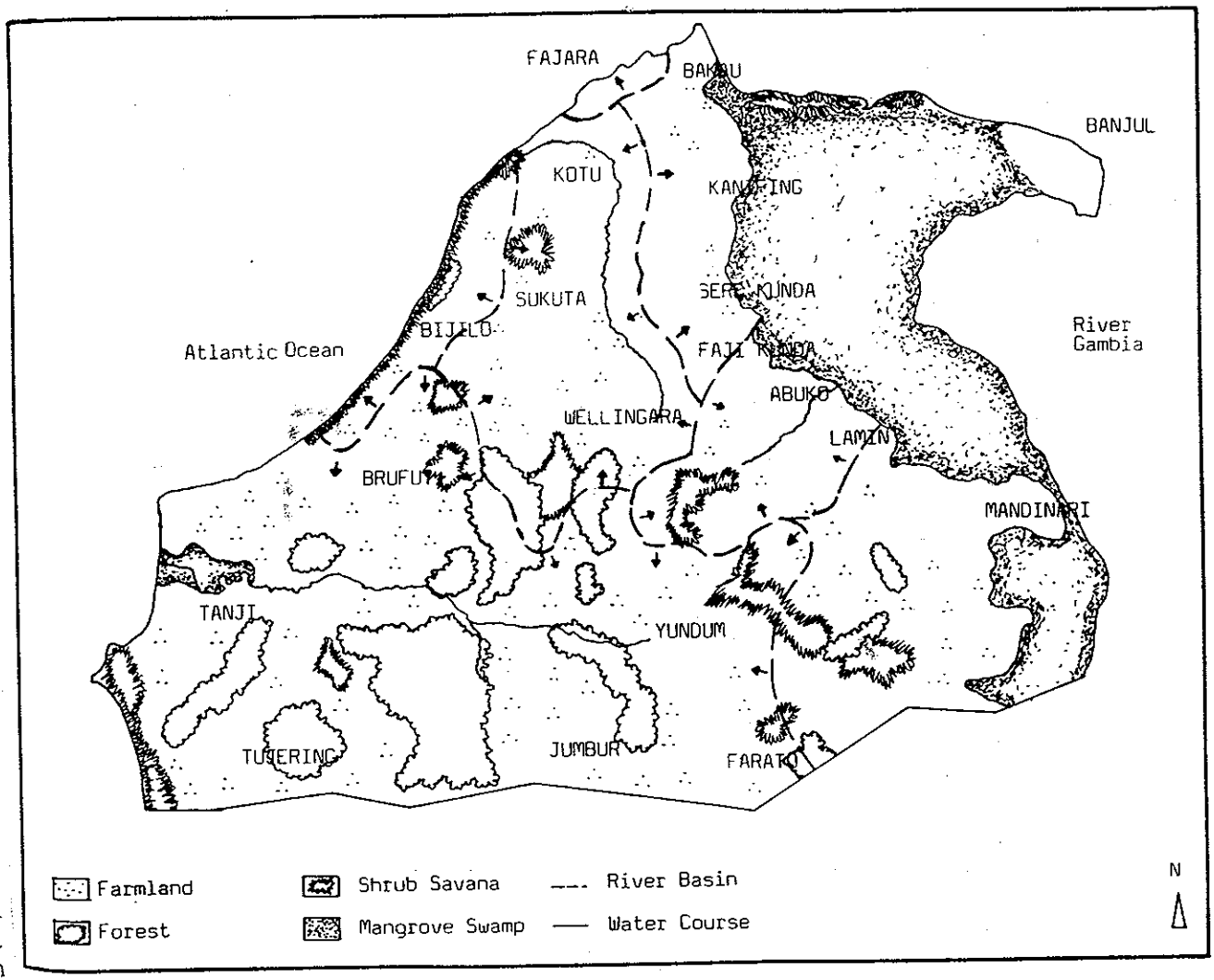


Figure 6: Present Landscape

- Intensification of agriculture and desalination of certain areas (e. g. Tanji stream shores, upstream of the new road bridge near Tanji fish curing site) to meet the increasing demand for staple crops and vegetables for the urban markets.

3.4.2 Guidelines for Physical Planning

By adhering to the following guidelines, most of the ecological problems resulting from the urbanization of the Greater Banjul Area are most likely to be alleviated. These guidelines are based on the principle of making optimum use of the specific resources of the planning area:

1. Preserve existing farmland and provide fertile farmland in the case of new developments.

2. Densify those residential areas which are already deprived of any areas used for farming.

3. Develop and protect green belts by planting trees, particularly fruit trees.

4. Reafforestation by public institutions and/or private individuals or groups.

5. Protect and develop open woodlands and forested areas.

6. Identify and protect borehole areas.

7. Preserve the coastline for nature reserves and recreational uses and protect coastal strips endangered by erosion (around Mile 1, Fajara cliffs and at Bijilo Forest Park).

C The Physical Development Plan

0 Methodological Approach

Based on the results of the analysis of the existing situation and on estimates and forecasts of possible future development trends, a set of guidelines or criteria for physical planning has been drawn up (part B of this report). These guidelines are the basis for the formulation of the main physical development objectives for the GBA. These objectives are limited to issues which are likely to be influenced by physical planning instruments in order to ensure that they are realistic and not a mere statement of wishful thinking.

The statement of objectives is followed by a specification of the major results to be achieved in order to meet the proposed objectives. If the results are defined in a quantitative and very specific manner, it is easier to monitor the fulfillment of objectives and to find out about shortcomings.

Strategies of courses of action describe how these results are going to be achieved. The Physical Development Plan specifies which strategies should be applied to which areas, taking into account the existing potentials and constraints of different areas and the spatial requirements resulting from the development forecasts.

The procedure of defining objectives, specifying them by accurate results and designing strategies how to achieve the results is necessarily influenced by overall value judgements. In this case the underlying values and guiding principles are:

- The natural environment and the social organisation are the inheritance or in other words the resources which we have to utilize as carefully and economically as possible;
- the urban growth and the inherent social changes of "modernization" require a modification of certain old habits which are no longer appropriate;
- in as far as possible physical planning should contribute to giving all individuals the chances of a better quality of life;
- the best economic use should be made of the scarce resources available.

Some of these postulates naturally exclude each other, others complement each other. It is assumed that the Physical Development Plan offers an acceptable compromise which at least to the best knowledge of the planning team is the optimal one under the given conditions.

1 The Logical Framework for Physical Development

1.1 Physical Development Objectives for the GBA

Objective 1: The GBA is to be developed as a functional region with complementary rural and urban areas.

Objective 2: In view of the expected population increase in the next 10 to 15 years, land has to be identified for basic needs and housing, infrastructural facilities and workplaces both in existing settlements and in new areas.

Objective 1 has the following implications:

Table 7: GBA: Proposed Future Land Use Size and Type

Land Use Type	Ha	%
Urban Residential	3288	9,8
Mixed Use	256	0,7
Semi-Urban Residential	1396	4,2
Village	852	2,5
Hotel	45	0,13
Business and Commercial	25	0,06
Industrial	190	0.6
Institutional	301	1,0
Military	63	0,18
Parks and Recreation	603	1,8
Cemetery	63	0,18
Transportation and Communication	617	1,8
Dumping Site	16	0,05
Agriculture	11129	33,2
Water and Swamp	5952	17,8
Shrub	2859	8,5
Forest	5652	17,0
Quarry	15	0,04
Beaches	126	0,4
Special	21	0,06
Total	33469	100

- Both rural and urban functions within the GBA should be strengthened in order to achieve the highest possible degree of self-sufficiency of the area in terms of food supply. Given the limited area, the expansion requirements of the urban and the rural areas are in conflict. The only solution to this conflict lies in intensifying both rural and urban land uses rather than supporting their random extension or allowing them to

mix.

- Objective 1 requires mainly restrictive policies ("negative planning") with respect to land use changes; hence, protective measures to preserve the natural resources and the agricultural land are implied. For this reason, no separate objective dealing with environmental protection has been mentioned. In other words: A Greater Banjul Area without the protection of its resources cannot become a functional region, but will necessarily be a disfunctional one.

- The containment and restriction of urban sprawl tendencies implies higher densities in some urban areas. The analysis has shown that there are large urban areas with very low densities which is very uneconomical with respect to servicing such areas and is an impediment to urban agglomeration benefits.

Objective 2 has the following main implications:

- As much unused land as possible should be identified within the existing bounda-

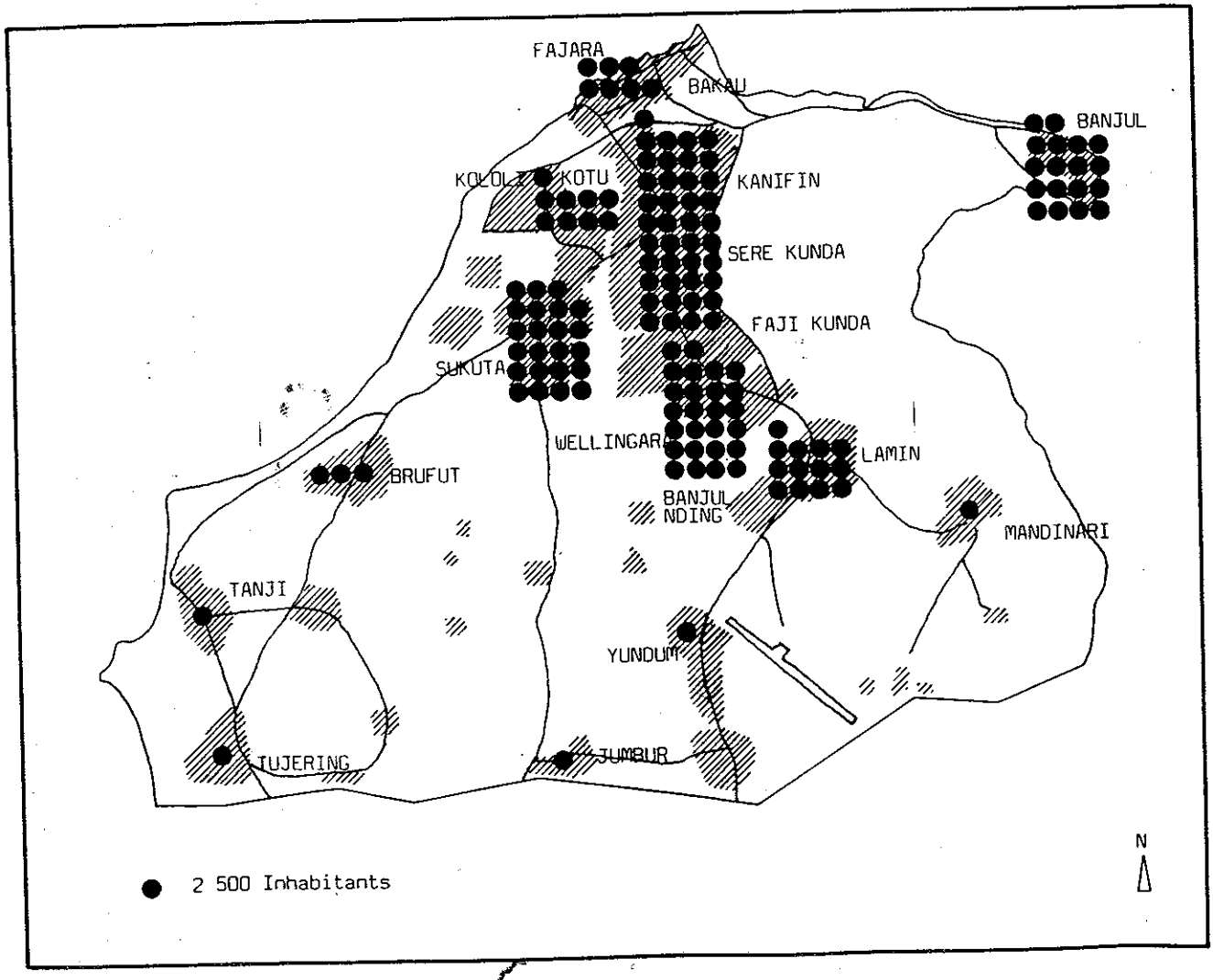


Figure 7: Proposed Future Population Distribution

ries of the urban areas. Undeveloped or underdeveloped land should be brought to better use in a deliberate urbanization attempt because scattered settlements can never be serviced properly.

- Future residential plots should be more restricted in size than in the past.

- New settlement areas have to be identified
  - in strategically favourable locations, i.e. future inhabitants should have the best possible access to existing centres and basic facilities;
  - preferably on land with the least fertility.

- Objective 2 requires mainly promotional policies ("positive planning") to indicate where which new areas, basic facilities and income generating activities should be located.

1.2 Main Results to be Achieved

The main results (or "outputs") of physical planning have to be achieved to contribute to these two objectives:

Result 1: Complementary land uses have to be introduced in the whole of the GBA. The main functional land use categories are urban, semi-urban and rural. These categories are further specified according to the Physical Planning Act in the "Land Use Plan 2000" and described in the following chapters.

Result 2: A hierarchy of urban centres ("multicore development") has to be set up.

Different sizes of such urban centres, their catchment areas and the variety of services offered lead to a hierarchy of the centres, for example:

- regional centres: Banjul, Serekunda
- subregional centres: Bakau, Sukuta, Lamin
- local centres: various local markets.

These urban centres are defined to provide

- opportunities for economic activities
- social and other services for the population
- land for an administrative centre.

A special case of an administrative centre is the one serving the whole of The Gambia; it is to be shifted gradually from Banjul to the Kanifing Administrative Zone.

Result 3: A basic network of infrastructural utilities has to be set up, especially regarding roads. Network systems generally are more efficient and safer in providing the services required (access, water, electricity, tele-

comms) than the present ribbon and branch system configurations.

The following map visualizes the three results and should serve as a "pocket masterplan" of the essential features to be kept in mind in future decision-making.

1.3 Strategies to be Applied

Three strategies should be applied to the different land use categories (urban, semi-urban and rural):

Strategy 1: Densification of underdeveloped urban areas.

Strategy 2: Upgrading of densely built-up and substandard areas.

Strategy 3: Preservation of those areas which are already now in line with objective 1 (which contribute to the GBA as a functional region).

Strategies 1 and 2 are promotional in character, strategy 3 is restrictive and the necessary complement to strategy 1.

These strategies are justified by the following reasons:

Densification and a restrictive policy as to the allocation of new development areas are the best means to contain the urban sprawl using up valuable agricultural land and to prevent the emergence of more and more scattered settlements which are badly accessible and cannot be serviced but at very high costs. The potential of empty land within the settlements must be mobilized to make more economical use of the urban structure and to increase the necessary agglomeration economies.

Upgrading of dense and substandard areas find its justification in economic and social reasons:

- just as with any machine or technical hardware it is more economical to maintain and improve the "urban hardware" rather than to run it down and to invest in new structures.
- infrastructural and accessibility standards below the acceptable and affordable average should be avoided for reasons of social justice and to prevent political unrest.

Preservation of areas which are well functioning or which offer potentials for future uses is justified by the general requirement of resource protection and development. The preservation strategy has two main components:

(1) Conservation of existing land uses and special sites like gardening areas, forests, mineral resources, historical sites and green belts;

(2) Control and careful development of rural villages to avoid their suburbanization and to enhance their agricultural productive function.

The following table summarizes the above stated planning approach. Reading the table from the top down means to

follow the logical reasoning; reading it from the bottom up means to follow the time sequence of tackling the tasks.

Objectives	1 GBA to be a functional region 2 Land identified for population growth
Results (outputs)	1 Land uses determined 2 Hierarchy of centres 3 Infrastructure networks
Strategies (activities)	1 Densification) = Promotion 2 Upgrading) 3 Preservation) = Restriction
Inputs	cf. chapter C 3 on "Implementation" - capital input - institutions and legal instruments - trained personnel

2 Densification Strategy

2.1 Criteria

The following types of areas offer potentials for densification/extension and have been used as criteria for chosing appropriate areas for that purpose:

- Areas which may serve as a counter-magnet for the drift from rural areas to nearby urban centres. These include areas which have a functional importance for their surrounding areas such as sites for industrial estates or an expansion area for a congested commercial centre.

- Areas with low population density (75 inhabitants per hectar or less).

- Areas where more than 20% of the allocated plots are either undeveloped or underdeveloped. These include large, underutilized plots with few structures only or plots with buildings which have been under construction for quite a number of years.

- Areas where open land, not owned by anybody, exists within the settlements and which at the same time fulfill the pysical requirements for new developments.

2.2 Land Use Concept and Implementation Guidelines

The future land use of an area should be derived or developed from the present land use and from present and future functions of the settlement in the overall context of the Greater Banjul Area. The following guidelines should be followed when densifying an area and gradually establishing or improving urban or suburban structures.

Residential area

Population density: 150-250 inhabitants/hectare. Plot size: 250-400 square metres with 40 % built-up area and a building height not

exceeding two storeys. The residential area shall take up the largest part of the settlement.

Business and Commerce

Additional commercial areas are to be provided near existing ones, either with purely commercial or mixed commercial and residential use. New areas should be reserved for markets.

Industry

Areas for manufacturing, light industry and workshops should be identified within the settelements, the main criterion being accessibility.

Public Admininistration

As public administration in The Gambia eventually will be decentralized, areas for public service and other institutions will be reserved as the need arises.

Social Amenities

The following social amenities for which land should be reserved according to the standards of the catchment radius should be foreseen for the population of the settlement itself and for the people of the surrounding area:

- education
- health
- religion
- community services
- recreation
- cemetery.

Depending on the function of the social amenity, its location can be central or decentral.

Transportation and Communication

Taxi parks, bus stops and other services (Post Office) should be foreseen and allocated along the existing main roads.

Densification necessarily implies two main provisions: first, a gradual change of the residential use and second, an increase of the functional importance of a given settlement. This means that the settlement in question has to be attractive for its present population and for those who possibly want to settle there. This can be achieved by an increase of its social and technical facilities and by ensuring the accessibility to commercial, industrial and other urban activities. Therefore, it is important to attract essential projects and institutions to such areas in the very beginning of the implementation phase.

The gradual changes of the residential use to be introduced are as follows:

- New residential plots have to be allocated in unused and other open areas. The size of these urban plots will be determined by a new standard of 250 to 500 square metres.

- If a previously allocated plot has remained unused or undeveloped for more than two years, it has to be re-entered according to the plot standard for urban areas.

- At least 50 % of the presently underutilized plots have to be subdivided and allocated for residential purposes or social facilities. The success of this strategy

depends on the compensation rate and the co-operation of the present owners of the plots.

The above mentioned implementation actions have to be understood as a simultaneous process. Although each application for a plot, whether for residential or non-residential purposes, has to be decided upon individually, the densification strategy has to be taken into account.

2.3 Areas to be Densified

The following six different areas should be densified within the Greater Banjul Area; as these areas have different features, there are different reasons for their densification.

Sukuta and Lamin

These two settlements have central functions for the areas surrounding them; they are both sub-regional centres for the supply of commercial goods and services.

Latri. Sabiji/Faji Kunda Area

This area mainly serves as a residential quarter taking up most of the spill-over

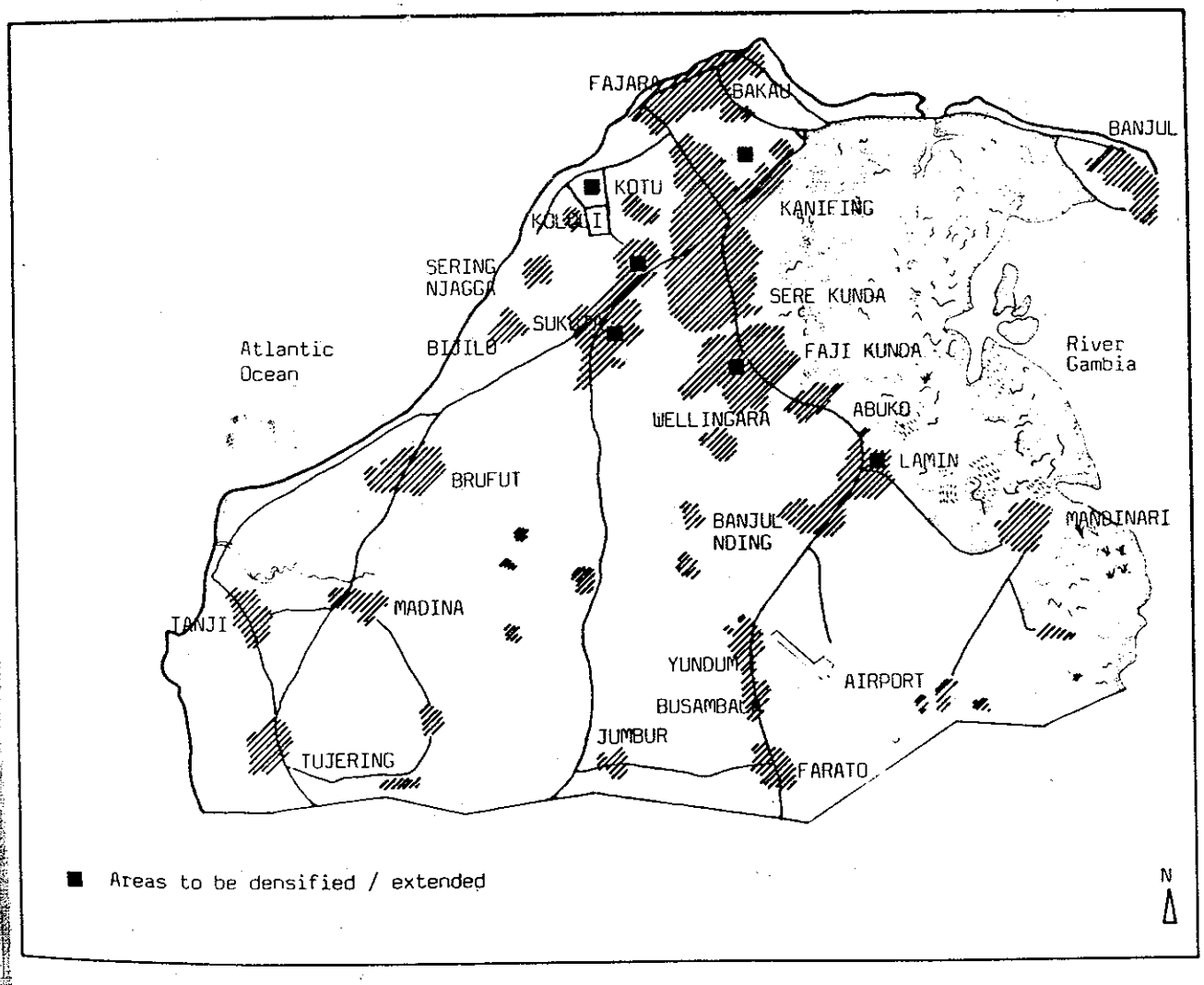


Figure 8: Location of the Areas to be densified/extended

of the heavily urbanized areas of the Greater Banjul Area.

Kanifing, Koto and Bakoteh

These areas are reserved for residential purposes where special housing and plot distribution programmes will be realized such as the "Site and Service" Project in Kanifing etc. All these three areas have planned lay-out concepts which determine the overall land use of each of them.

2.4 Area Details

2.4.1 Sukuta

Existing situation

Population

The present population of 7,500 inhabitants lives in a net residential area of 193 ha with a density of 39 inhabitants per hectare.

Land Use

The present built-up area is about 275 ha of which 193 hectares are used for residential purposes and 82 hectares for social and commercial facilities and the road network.

Land use is characterized by a centre with a market and a mosque surrounded by residential compounds.

One primary and one secondary school, a clinic, a dispensary and a number of neighbourhood mosques are decentrally located.

The original settlement grew mainly towards Serekunda.

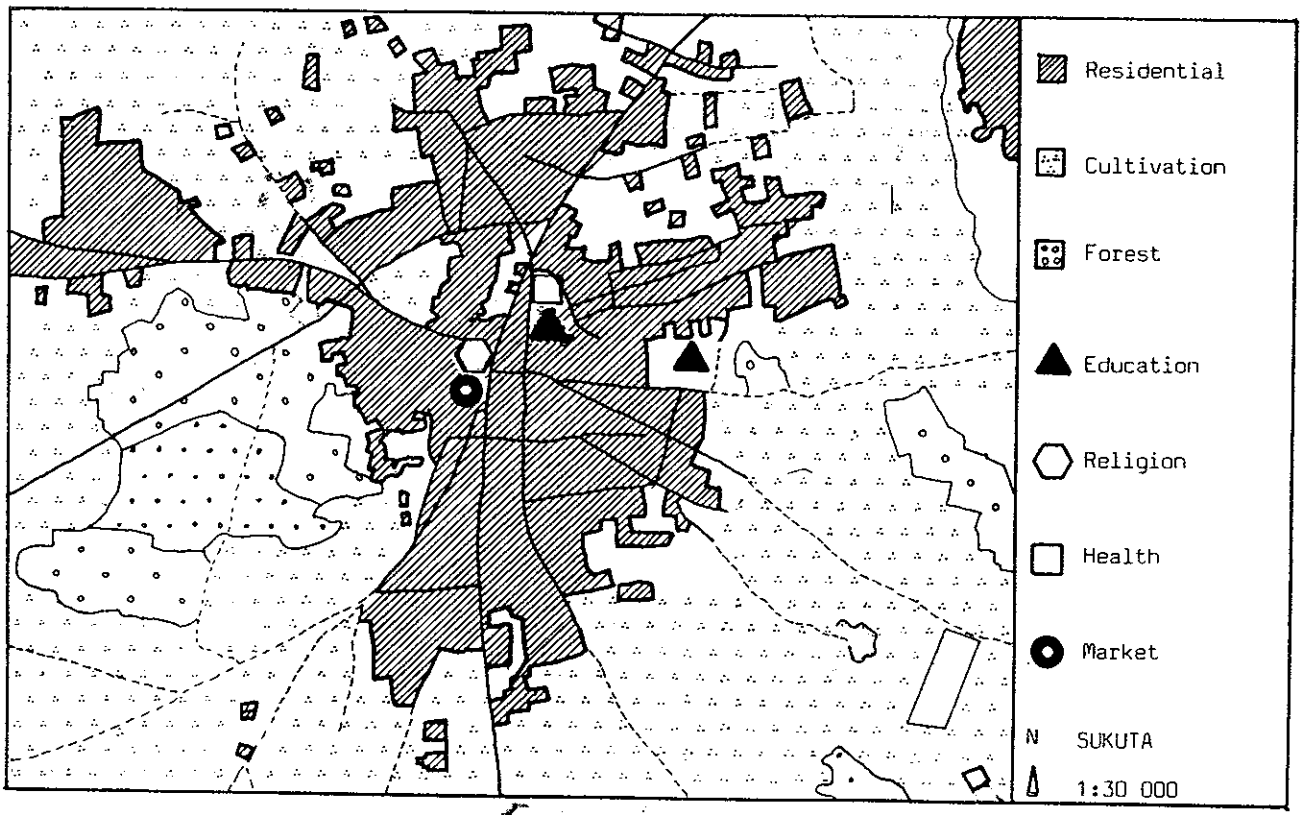


Figure 9: Sukuta: Present Land Use

The recent development shows a complete lack of proper land distribution. Therefore, Sukuta's original settlement is surrounded by urban sprawl with large stretches of open land within the built-up area.

Proposed Future Development

Population

According to the proposed population density for urban areas, the present density has to be increased as follows:

The new residential areas have a population density of 200 inhabitants per hectare; the present residential areas have to be densified gradually with the objective of increasing at least 50% of the area from 39 inh/ha to 150 inh/ha. As a result, the future population density will be categorized by three types:

40 inh/ha) present built-up area (minimum)
150 ") present built-up area
200 ") new built-up area (maximum)

Land Use

With additional 215 hectares, the future gross area of Sukuta will be some 490 hectares. About 70 % of the area shall be used for residential purposes and 30 % for social facilities, commercial and administrative activities and the demands for road network extensions.

The main land use characteristic will be a concentric layout with a commercial centre surrounded by residential quarters, provided with decentrally located facilities and a network of main roads passing through the area in different

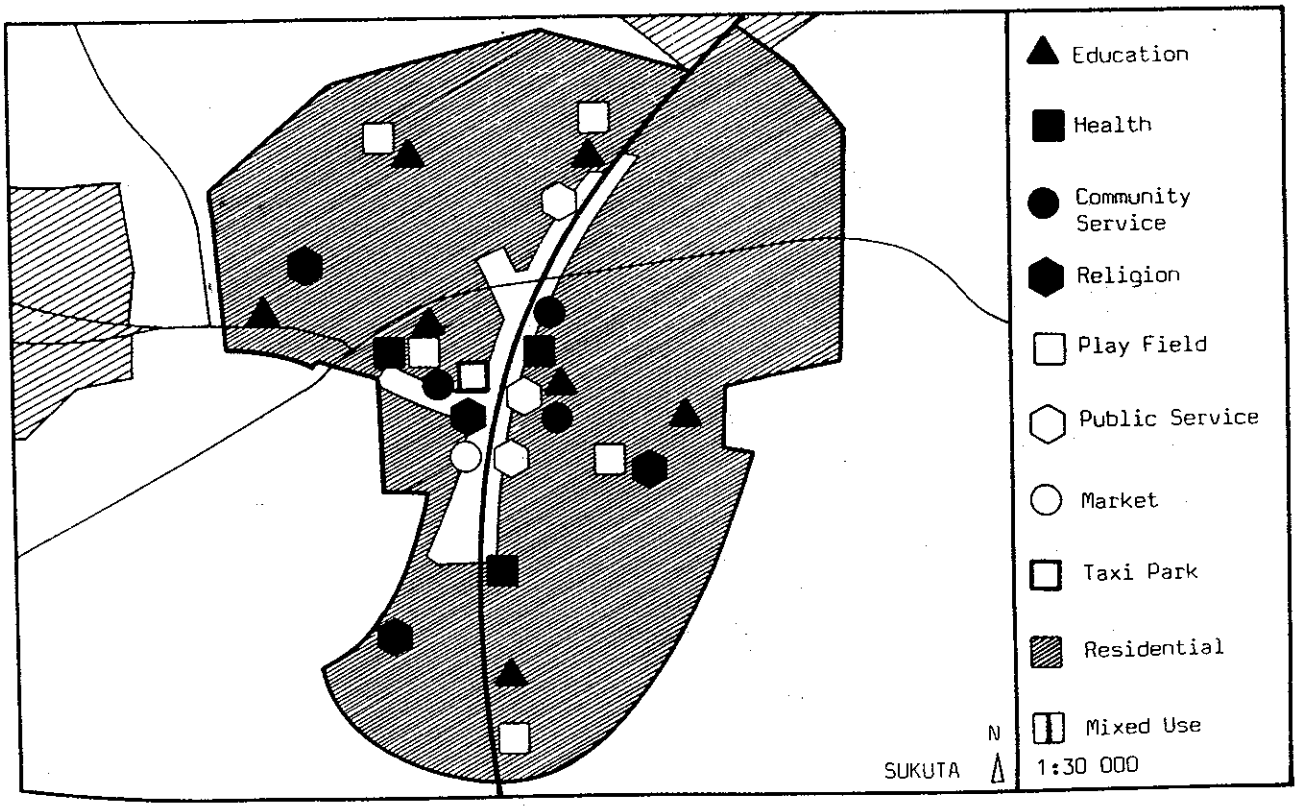


Figure 10: Sukuta: Proposed Future Land Use

directions and linking Sukuta with the neighbouring settlements.

The surrounding areas are intended for agricultural and forestry uses, partly serving as green belts to prevent further urban sprawl.

Table 8: Proposed Land Use Distribution

Land Use	Existing Area ha	New Areas ha	Total Area ha
Residential	193	150	343.0
Facilities	25.6	20	46.5
Commercial	6.0	3	3.5
Access	55	42	92.0
Total	275	215	490.0

Table 9: Proposed Population Target Figures

Density inh/ha	Net Area ha	Population
40	97[x]	3,888
150	96[x]	14,400
200	150[xx]	30,000
Total	343	48,280
Present Population		- 7,500
Additional Population		40,780

[x] present built-up area

[xx] new development area

Table 10: Proposed New Social Amenities

Education	(4 primary and 1 secondary school)	7.5 ha
Health	(1 clinic, 1 health centre)	3 ha
Religion		1.5 ha
Recreation and Sport		5 ha
Community services		7.5 ha
Total		18.5 ha
Public Administration	(1 Fire Station, 1 Police Station, other government buildings)	1.5 ha
Commercial/Industry		3.0 ha
Total area for non-residential purposes		22.5 ha

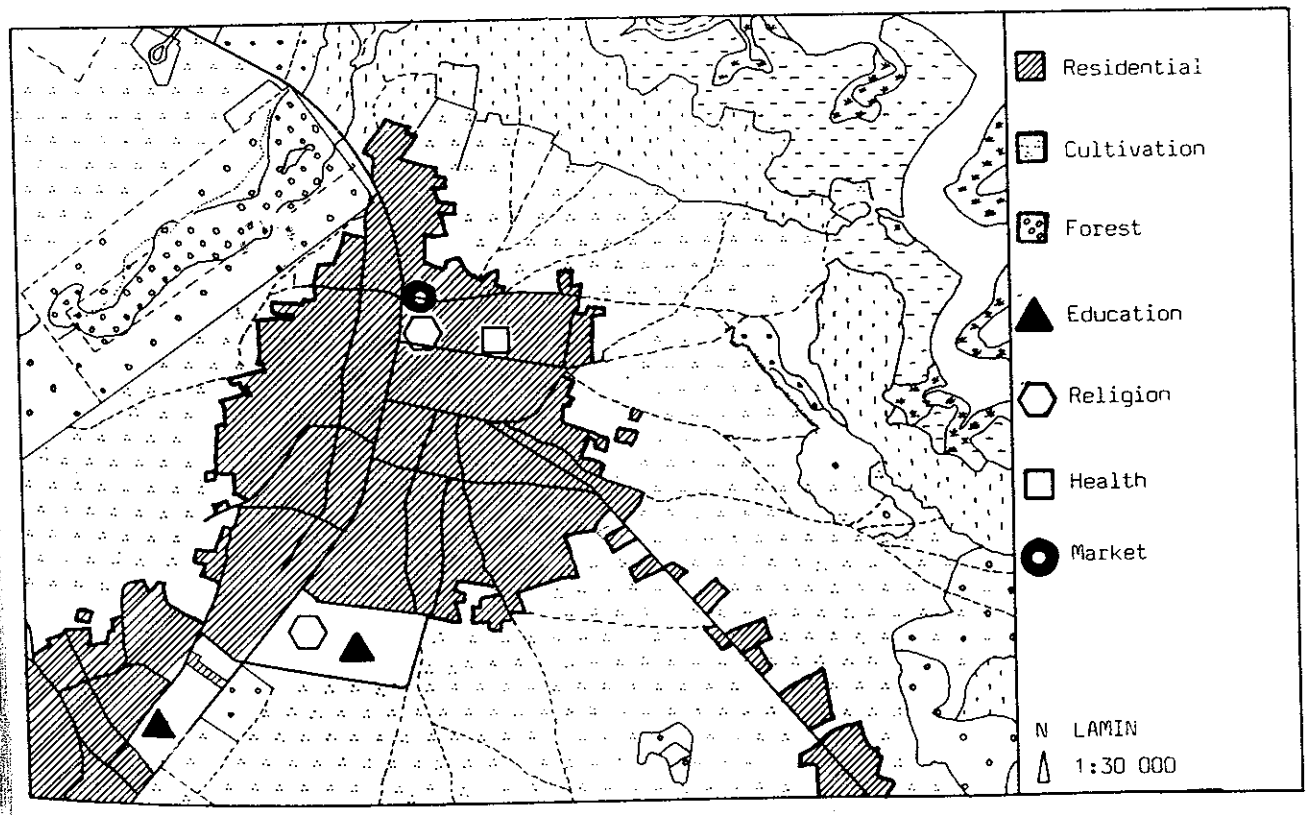


Figure 11: Lamin: Present Land Use

2.4.2 Lamin

Population

The present population of about 6,000 inhabitants lives in a net residential area of 133 hectares with a net density of 45 inhabitants per hectare.

Land Use

The present built-up area is about 190 hectares of which 133 hectares are used for residential purposes and 57 hectares for social and commercial facilities and the road network. The National Highway (NHW)** divides the settlement in two parts. Commercial activities are concentrated along the NHW. The compounds are located beyond the mixed use area (commercial and residential) and the plots are fairly well developed and of regular size. The settlement tends to grow mainly eastwards along the road to Mandinari. Due to the presence of the Abuko Nature Reserve and the new buffer zone around it, there is no possibility to extend the development any further beyond the present western boundary of the village.

There are a few social amenities mainly accessible from the main roads.

Future Development

Population

According to the proposed population density for urban areas, the present density has to be increased as follows:

The new residential areas are to be densified up to a population density of 200 inhabitants per hectare.

The present residential areas have to be densified gradually with the objective to increase at least 50 % of today's area from 45 inhabitants per hectare to 150 inhabitants per hectare.

In the end, the future population densities will be categorized by three types:

45	inh/ha)	present built-up area (minimum)
150	")	present built-up area
200	")	new built-up area (maximum)

Land Use

With an additional area of 160 hectares, the future gross area will be about 330 hectares. 70 % of it shall be used for residential purposes and 30 % for social amenities, commercial and administrative activities and a road network.

The future lay-out of the settlement will be mainly determined by the present land use which is a linear development along the NHW. On both sides of the highway, the non-residential activities have to be allocated. The connection between the residential and non-residential areas, such as commercial centre, etc. will be provided by a number of roads, at right angles to the highway, linking the residential quarters to the highway.

Figure 12: Lamin: Proposed Future Land Use

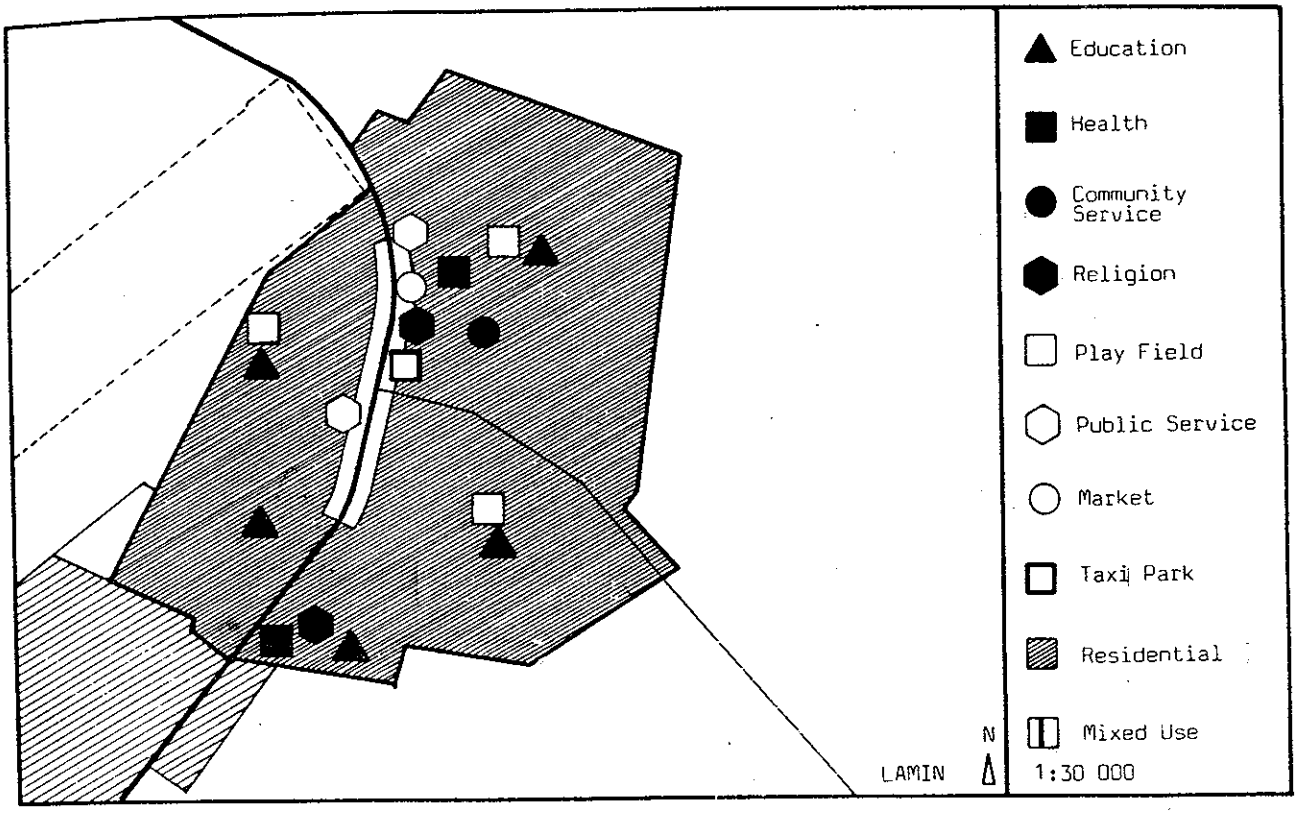


Table 11: Proposed Land Use Distribution

Land Use	Existing Area ha	New Area ha	Total Area ha
Residential	133	98	231
Facilities	18	12	29
Commercial	1	2	4
Access	38	28	66
Total	190	140	330

Table 12: Proposed Population Target Figures

Density inh/ha	Net Area ha	Population
45	67[x]	3,015
150	66[x]	9,900
200	98[xx]	19,600
Total	237	32,515
Present Population		- 6,000
Additional Population		25,515

[x] present built-up area
[xx] new development area

Table 13: Proposed New Social Amenities

Education	(3 primary schools and 1 secondary school)	4 ha
Health	(1 health centre)	1.0 ha
Religion		2.0 ha
Sport and recreation		3.0 ha
Community services		1 ha
Total		11 ha
Public Administration	(1 Fire Station/ 1 Police Station and other govt.buildings)	1 ha
Commercial		2 ha
Total area for non-residential purposes		14 ha

2.4.3 Latrikunda Sabiji/Faji Kunda Area

Population

The present population of 13,000 inhabitants lives in a net residential area of 245 hectares with a net density of 53 inhabitants per hectare.

Land Use

The present built-up area is about 350 hectares of which 245 hectares are used for residential purposes and 160 hectares for social and commercial facilities and the road network.

The area itself consists of an agglomeration of several settlements. Each of them has a centre with a mosque and some shops.

The NHW divides the overall settlement in two parts and has changed the previous pattern of plot allocation. Whereas plots near the core settlements are large and have been allocated a long time ago, plots nearer to the NHW are smaller and of more commercial use due to the impact of the NHW.

Furthermore, commercial facilities tend to be located along the NHW. Another land use characteristic of the place are the stretches of open land along the fringes of the old settlements and the large number of undeveloped plots within the built-up areas.

Within the built-up area, there are some social amenities such as primary school, a mosque and a church.

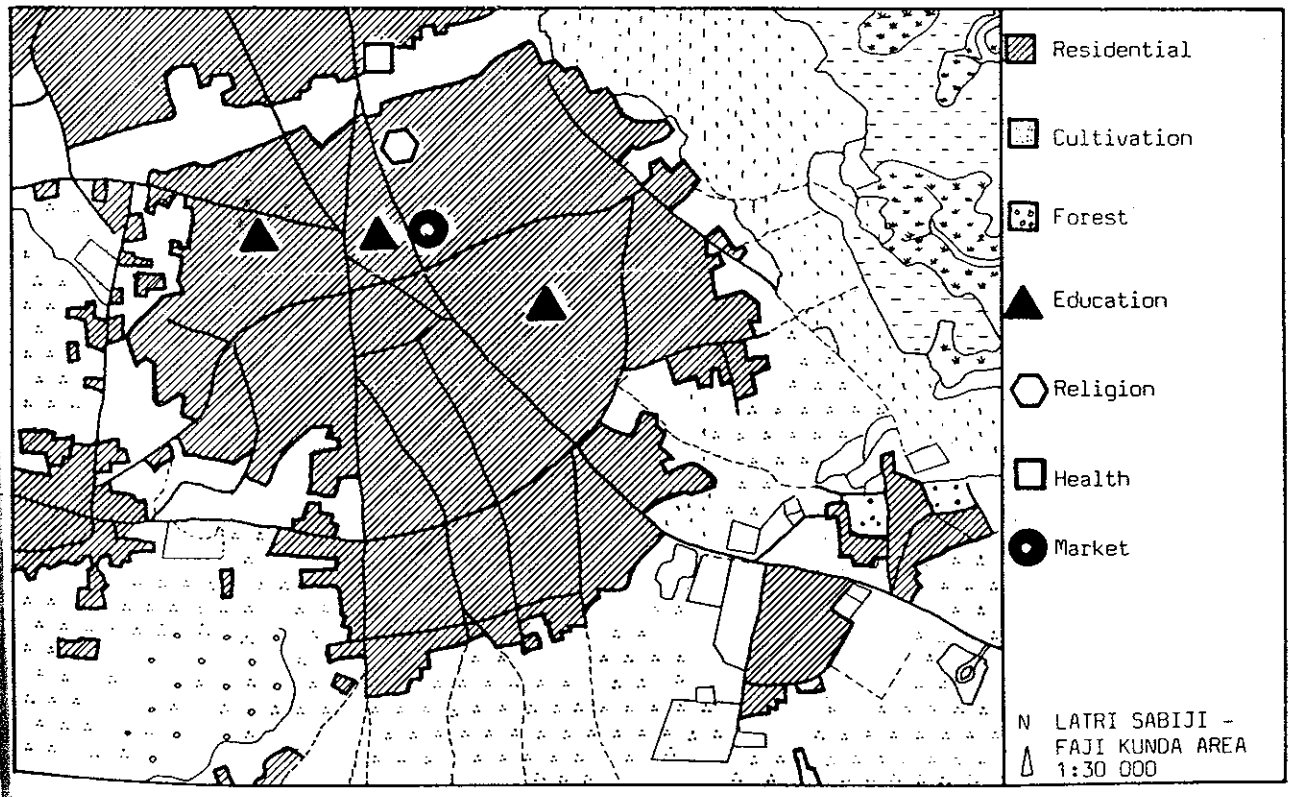


Figure 13: Latri Sabiji/Faji Kunda Area: Present Land Use

Future Development

Population

According to the proposed population density for urban areas, the present density has to be increased as follows:

The new residential areas should develop to a population density of up to 200 inhabitants per hectare.

The present residential areas have to be densified gradually with the aim to increase at least 50 % of the land from 53 inhabitants per hectare to 150 inhabitants per hectare.

Finally, the future population density will be categorized by three types:

50 inhabitants per hectare (minimum)

150 " per hectare

200 " per hectare (maximum)

Land Use

With an additional area of 250 hectares, the future gross area will be about 610 hectares. 70 % of it shall be used for residential purposes and 30 % for social amenities, commercial and administrative activities and a road network.

The future lay-out of the settlement will be determined by the present land use.

This means that the traditional core settlements have to be preserved and improved by the allocation of non-residential areas. As a result, the area should be developed to

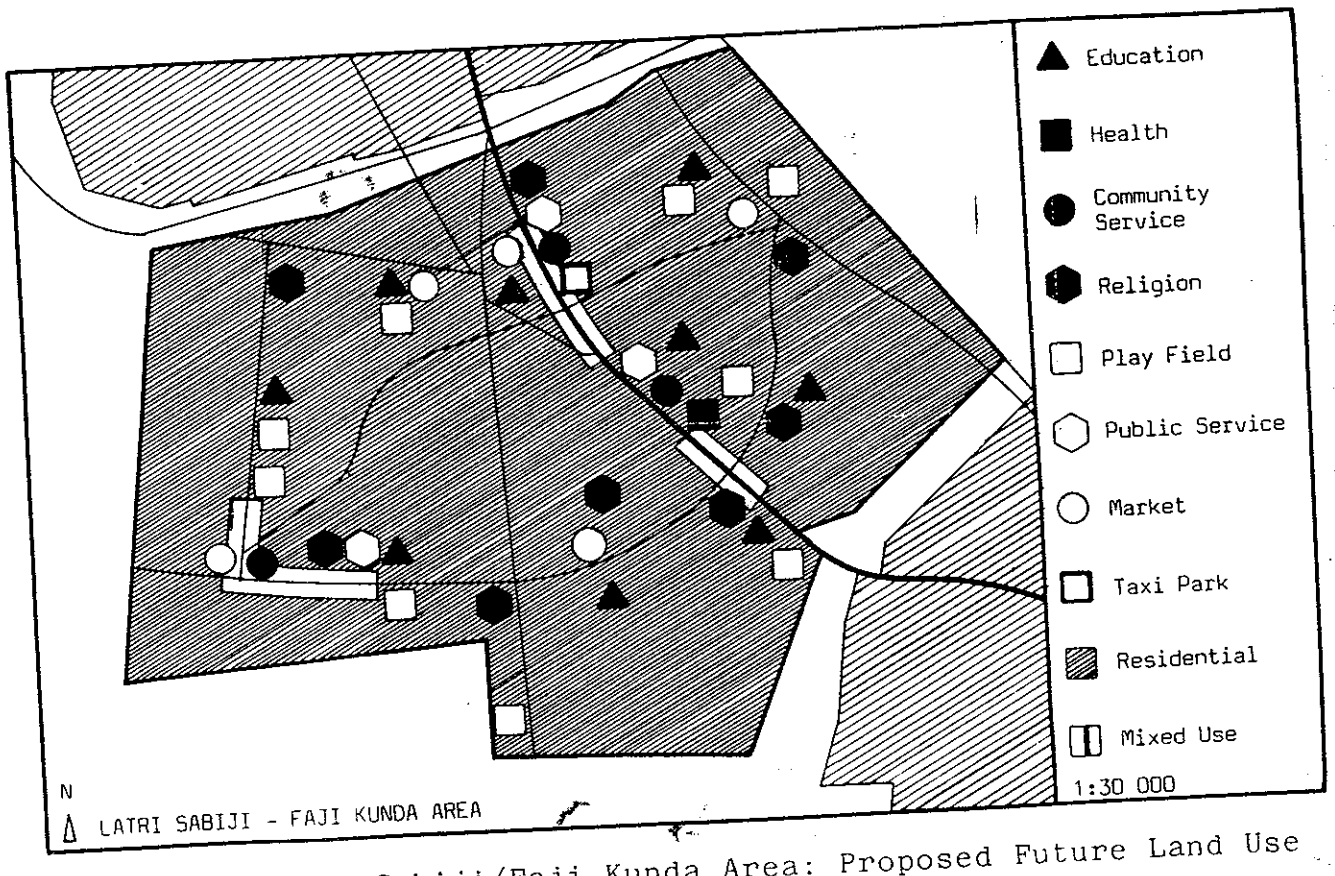


Figure 14: Latri Sabiji/Faji Kunda Area: Proposed Future Land Use

become a focal point with some specific activities such as commercial, workshops etc.

The surrounding areas are intended for agricultural and forestry uses, most of them within green belts to prevent further urban sprawl. This is of special importance in the area southwest of Latrikunda Sabiji (Sinchu/Kunkujang) where the GUC well fields have to be protected by prohibiting any further building developments.

Land Use	Existing Area ha	New Area ha	Total Area ha
Residential	245	182	427
Facilities	33	22	55
Commercial	2	3	6
Access	70	52	122
Total	250	260	610

Table 14: Proposed Land Use Distribution

Density inh/ha	Net Area ha	Population
50	123	6,150
150	122	18,300
200	182	36,400
Total	427	60,850
Present Population		- 13,000
Additional Population		47,850

Table 15: Proposed Population Target Figures

Table 16: Proposed New Social Amenities

Education	(5 primary schools and 1 secondary school)	7.5 ha
Health	(1 clinic and 1 health centre)	4.0 ha
Religion		1.0 ha
Recreation and Sport		7.0 ha
Community services		1.5 ha
Total		21.5 ha
Public Administration	(1 fire station/ 1 police station/ other government buildings)	1.5 ha
Commercial/Industry		3 ha
Total area for non-residential purposes		26 ha

2.4.4 New Lay-out Areas

The New Lay-out Areas are located in Kotu, Bakoteh and Kanifing. These areas have been developed recently. The lay-outs differ from the traditional form of land subdivision because the land use and plot sizes have been planned and defined by the Physical Planning Department, similar to areas like Fajara M or F sections etc. Apart from providing residential plots, allowance is made to allocate sites for social, commercial and administrative activities and a road network. At present, part of the residential plots are already being allocated to applicants and some of the social amenities are being developed.

2.4.4.1 Kotu/Kololi Area

Kotu/Kololi Area is surrounded by the settlements of Serrekunda, Njagga, Bakoteh and Manjai kunda, by agricultural plots and the Tourism Development Area along the Badala Park Way. According to the proposed lay-out, its future function will be a residential quarter with some non-residential facilities, the most important ones being already in existence, e. g. the kotu power plant, the sewage treatment plant and the Publics Works Department workshop (under construction).

Population

The projected population of about 20,000 shall live in a net area of 100 hectares with a population density of 200 inhabitants per hectare.

2.4.4.2 Bakoteh

Bakoteh is located between Serekunda, Sukuta and Manjai kunda. The significant difference from the traditional

Table 17: Proposed Land Use Distribution (Kololi/Kotu)

Land use	Area ha
Residential	100 ha
Facilities	13 ha
Commercial	2 ha
Access	35 ha
Total gross area	150 ha
Proposed new social amenities	

Table 18: Proposed New Social Amenities (Kololi/Kotu)

Education	(1 High School, 2 Primary Schools)	4.5 ha
Health	(1 Clinic)	2.5 ha
Religion		1 ha
Recreation and Sport		3.5 ha
Community Services		1 ha
Total		12.5 ha
Public Administration	(1 Fire Station, other government buildings)	0.5 ha
Total area for non-residential purposes		13 ha

pattern in this area is the extension of the original village settlement by a recently developed housing estate consisting of pre-fabricated one-storey self-contained houses. In addition, there are a SOS-Children's Village and a Primary School attached to it. A further lay-out for a possible extension of the housing estate also exists.

Population

The projected population of about 7,000 inhabitants shall live in a net area of 35 hectares with a population density of 200 inhabitants per hectare.

Table 19: Proposed Land Use Distribution

Land Use	Area ha
Residential	35 ha
Facilities	1.75 ha
Commercial	0.25 ha
Access	8 ha
Total Gross Area	45 ha

Table 20: Proposed New Social Amenities

Health	(1 Dispensary)	0.25 ha
Religion		0.25 ha
Recreation and Sport		1
Community Services		0.25 ha
Total		1.75 ha

2.4.4.3 Kanifing

The Kanifing New Lay-Out Area is located between the Kanifing Industrial Estate and the development along Kairaba (former pipeline) Road, the Stadium and the government quarters.

Part of the area has to be reserved for administrative purposes and part as a green belt.

As a result, only some 50% of the area are reserved for residential purposes, of which again 50 % shall be covered by the "Site and Service" Project to be implemented from 1985 on.

Population

The projected population of about 15,000 inhabitants shall live in a net area of 75 hectares with a population density of 200 inhabitants per hectare.

Table 21: Proposed Land Use Distribution

Land Use	Area ha
Residential	74 ha
Facilities	9 ha
Commercial	2 ha
Access	22 ha
Total gross area	180 ha

Table 22: Proposed New Social Amenities

Education	(1 Primary School/ 1 Secondary School)	3 ha
Health	(1 Health Centre)	1 ha
Religion		1.5 ha
Recreation and Sports		3 ha
Community Services		1.5 ha
Total		9 ha

3 Upgrading Strategy

3.1 Criteria

Basically, those areas in the GBA can be described as upgrading areas which have reached that stage of social and physical congestion that the originally planned physical structure is now inadequate in space and is overloaded. The originally planned social and technical infrastructure such as schools, mosques and public places, accessibility water and electricity supply as well as sewage and waste removal is now overloaded. But specifically seen, those areas within the limits of the physical development strategies should be defined as upgrading areas which, apart from the above mentioned problems, obviously are part of the GBA urban area; this means that its inhabitants mainly work in the non-agrarian sector. Furthermore, these areas belong to those regions which, being a residential or mixed area, a commercial centre or a market place, have a special function for the GBA.

3.2 Upgrading Concept and Implementation Guidelines

The following aspects are important for the implementation of an upgrading programme:

- identification of the object considered for upgrading with regard to the available resources and the usual

or desired standard;

- guaranty of the object by participation and control of the target social groups.

Considering the above mentioned aspects which should always be seen in context, an upgrading concept modifies itself according to the existing situation. This means that immediate steps may be necessary with few constructional and spatial change or long-term measures by means of a differentiated and complicated physical and social process. Both types of measures will be necessary in the urban centres of the GBA since especially these areas on the one hand are frequently used every day to varying degrees and on the other hand have not been upgraded for a long time. An upgrading programme for these areas comprises the following steps:

- additional new public standpipes
- improvement of waste collection and disposal methods
- improvement of sewage disposal methods
- provision of social amenities
- improvement of existing road network
- improvement of market sites.

After having decided what has to be upgraded, the obtainable standard will be decided upon on the basis of the existing resources, for example, whether a road is to be bitumised or simply to be latrite surfaced. Therefore, the upgrading concept is defined on the basis of the fixed standard; thus, the following concept results for the GBA urban areas:

Public standpipes are only to be erected where there are too few of them; this means that for cost reasons the adequate standard of 100 metres radius of catchment will have to be neglected here. As far as waste removal is concerned, the inhabitants' self-help will be more required; various places which are not too disturbing for the compounds, are defined as waste collection sites where waste should be collected and burnt. At present sewage removal has to be reduced to the amelioration and reconstruction of drains for the storm water drainage; but in the long run, especially regarding the density areas, solution possibilities will be necessary in order to remove the waste water of each plot. As far as social amenities are concerned, the existing institutions will be extended further and used more expansively before areas shall be defined as needing new ones. Especially in the case of schools, it is observed that they often have enough space in order to build on additional buildings which can also be used for other social purposes during the school-free time. Only those roads are paved which belong to the main roads - they are partly bitumised and partly latrite surfaced. The markets are provided with the essential building measures such as roofing, pavement of the ground, removal of sewage and waste, water supply and public toilets.

The implementation of an upgrading programme is not only the task of Government, but of other institutions as well. But by far the most important element for the success of an implementation programme

is the need to involve the public at all levels of implementation. This has not only the advantage of reducing the costs involved, but also of generating the interest and later on the acceptance by the public.

Obviously, the first step for Government will be to secure the necessary funds in order to accomplish the various programmes. These funds may be provided internally, but international funding should also be sought since the merits of this proposed upgrading programme can be seen in the face of physical and social problems which are likely to be solved to some extent.

Institutions to be involved would entail the GUC, PWD, KUDC and non-governmental organisations.

The GUC would be required to provide the proposed public standpipes and additional street lighting in residential areas. As far as possible, cost should be restricted mainly to material cost, and all labour cost should be allocated to members of the public living within a locality that is to benefit from a given standpipe. This means that all digging work for canals or the erection of street light posts could be carried out by the public.

The same principle could be applied in the construction or improvement of roads. The public could be persuaded in the spirit of Tesito to take part in street work within their locality. The Public Works Department might perhaps start a public mobilization campaign to get a maximum of public participation.

As far as waste collection is concerned, KUDC or the cleansing agency, as the case may be, should erect walls of about one metre high at waste collection points to contain waste. The public should be appealed to co-operate by dumping all waste at prescribed areas. The responsible agency will then collect waste at the collection points for disposal at the main disposal site at Kotu.

Also in the case of social amenities, which is an ongoing need, public involvement is fundamental, whether it be the construction of a community centre, a school or a mosque. Government may take the responsibility of providing materials and technical advice while all labour costs will be allocated to neighbourhoods.

Undoubtedly, in any implementation programme, there is bound to be problems mainly of financial or managerial nature. It is therefore suggested that for this proposed implementation programme due note is being taken of the financial resources available and a concrete systematic approach to implementation worked out. To this end and in view of financial shortcomings, the implementation programme will give priority to those areas not covered by the World Bank Urban Management and Development Programme.

3.3 Areas to be Upgraded

Banjul, together with Bakau and Serekunda, constitute the country's bulk of the urban area and account for more than two thirds of the total population in the country. The areas can be referred to as the urban cores of the

agglomeration with commercial and administrative activities serving all other parts of the GBA. Because of their significant functional importance for the GBA, it is proposed to upgrade these areas. Common to all three settlements are typical urban problems of varying dimensions. These problems include:

- urban congestion
- lack of water supply
- improper waste collection and disposal
- poor sewage disposal
- inadequacy of social amenities
- inadequate street pavement
- general sanitation problems.

Among the settlements within the GBA, Banjul, Bakau and Serekunda area are the most congested areas with a population density of more than 250 inh/ha. Overcrowding reaches levels of about 7 persons per room, thus indicating the acute shortage of housing.

In Banjul, there are 130 public standpipes serving a total population of 44,572. In many

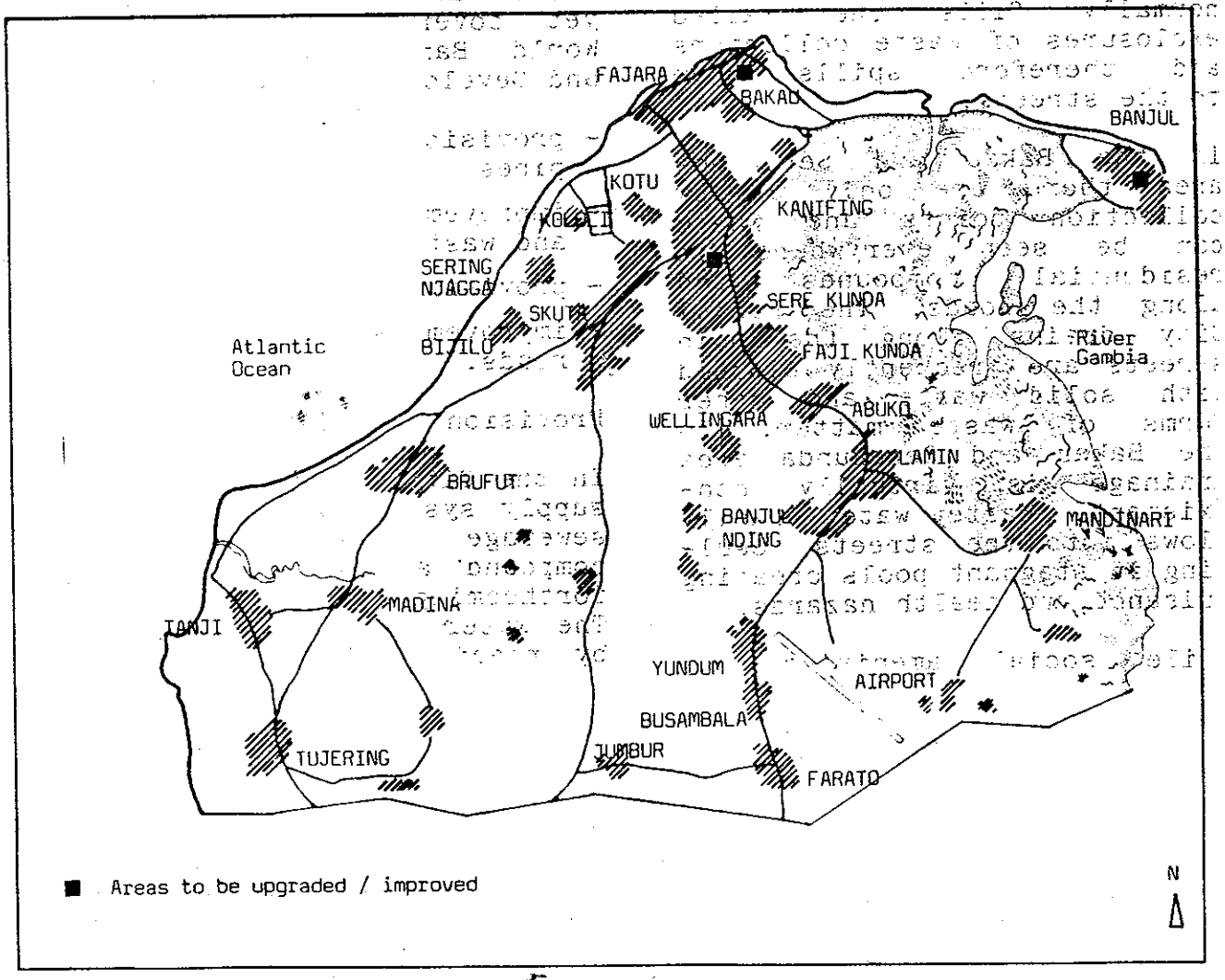


Figure 15: Location of Areas to be upgraded/improved in the GBA

cases standpipe distribution streches beyond 100 m radius of catchment. Bakau with a population of 8,440 has only 10 public standpipes in the whole town, and in the Serekunda area with a population of 72,534 there are only 41 standpipes concentrated in the old settlement. The peripheral areas of Bundung, Eboe Town and Tallinding do not yet have public water supply.

In Banjul, waste collection points are provided and evenly distributed, but these structures have been rapidly worn out over the years. While collection is done twice a week, it is far from satisfactory, since compound waste normally fills the walled exclosures of waste collectors and therefore spills over to the streets.

In the Bakau and Serekunda area there are only a few collection points and waste can be seen everywhere in residential compounds and along the roads. The Banjul City drains along the main streets are frequently blocked with solid waste and other forms of waste matter. In the Bakau and Serekunda area drainage is virtually non-existent. Waste water easily flows into the streets resulting in stagnant pools creating nuisance and health hazards.

While social amenities are found to an acceptable standard in Banjul, the provision of such amenities in the Bakau and Serekunda area is too low. In Bakau there is only one primary school which is seriously congested and in Serekunda there is a lack of a community centre. The existing primary school, the largest in the country, can no longer accept all the children of school age.

In all of the three settlements the streets are inadequately surfaced. Generally, residential and commercial users are not only inadequately served by technical infrastructure, but also the level of the existing services in many areas is in fact deteriorating because of the absence of maintenance.

3.4 Upgrading Programme

The following Upgrading Programme is recommended for the towns of Bakau and Serekunda, and more precisely for those areas which are not yet covered by the ongoing World Bank Urban Management and Development Project:

- provision of public standpipes
- improvement of drainage and waste disposal methods
- provision of social amenities
- improvement of existing roads.

Provision of Public Standpipes

In the City of Banjul, a water supply system and a waterborne sewerage connection for each compound are foreseen by the forthcoming Sewerage Programme. The water supply is guaranteed by placing new public standpipes for Bakau and the centre of Serekunda within the limits of the World Bank Upgrading Programme. The peripheral areas of Serekunda such as Bundung, Eboe Town and Tallinding, which have not been taken into consideration within the mentioned programme, also require urgent measures regarding the water supply by placing public standpipes. Not consid-

ering the standard of 100 metres radius of catchment, further 15 standpipes are required in order to guarantee the area's demand for water.

Improvement of Drainage and Waste Disposal Methods

This would entail the provision of a main drain in these settlements. Banjul has a fairly adequate drainage system and the same applies to some parts of Bakau. For the rest of the settlements, however, there is virtually no surface water drainage.

The F. H. Kocks study on sewerage and drainage for Banjul and Kombo St. Mary, 1975, UNDP and WHO, is a comprehensive study still relevant for the present situation. Some of its main recommendations are as follows:

- The drainage system for Banjul is adequate and requires only minor improvements, but for the new settlement of Campama and Tobacco Road a completely new open storm water drainage has to be constructed.
- The storm water drainage in Bakau requires urgent improvement in the form of cleaning of existing drains, cleaning and opening of street culverts and repair of concrete drains.
- A storm water drainage system should be built in the most densely populated areas in Kombo St. Mary. Independent systems with separate outlets to the swamps or the Kotu Stream should be set up for the remaining settlements.

Provision of Social Amenities

The Physical Planning exercise provides certain standards for the provision of social amenities in new development areas. While there is a need to provide such social amenities, this should not preclude the upgrading of existing facilities such as schools and health centres so as to achieve a maximum utilization of their capacity.

The following facilities need immediate urgent attention:

Markets

Banjul market - Serekunda market - Bakau market:

upgrading of stalls, provision of waste disposal point, provision of sanitary facilities and standpipes in the area.

This is provided for to a large extent by the ongoing World Bank - Urban Management and Development Project.

Schools

Bakau Primary School - Serekunda Primary School - Latrikunda Primary School:

Repair of floors and walls and utilization of free extra space for additional classroom blocks.

Health Centres

Bakau Health Centre - Serekunda Health Centre:

These centres do not only need repair of existing structures, but actual expansion. Public toilets and standpipes need to be provided at each centre.

Carparks

Bakau:

The Bakau carpark needs improvement in the form of resurfacing and a public toilet should be provided in the vicinity.

Serekunda:

The Serekunda carpark is in a chaotic situation, but is to become part of the World Bank upgrading project. It is to be relocated and improved.

Apart from the above stated amenities requiring improvement, there is also an obvious need to provide Serekunda, in particular, with other amenities such as:

6 Primary Schools
2 Secondary Schools
2 Health Centres
2 Dispensaries

and an appropriate number of community centres, cemeteries and religious facilities.

Improvement of Existing Roads

The following upgrading provisions have to be undertaken:

- better connection between those roads which serve

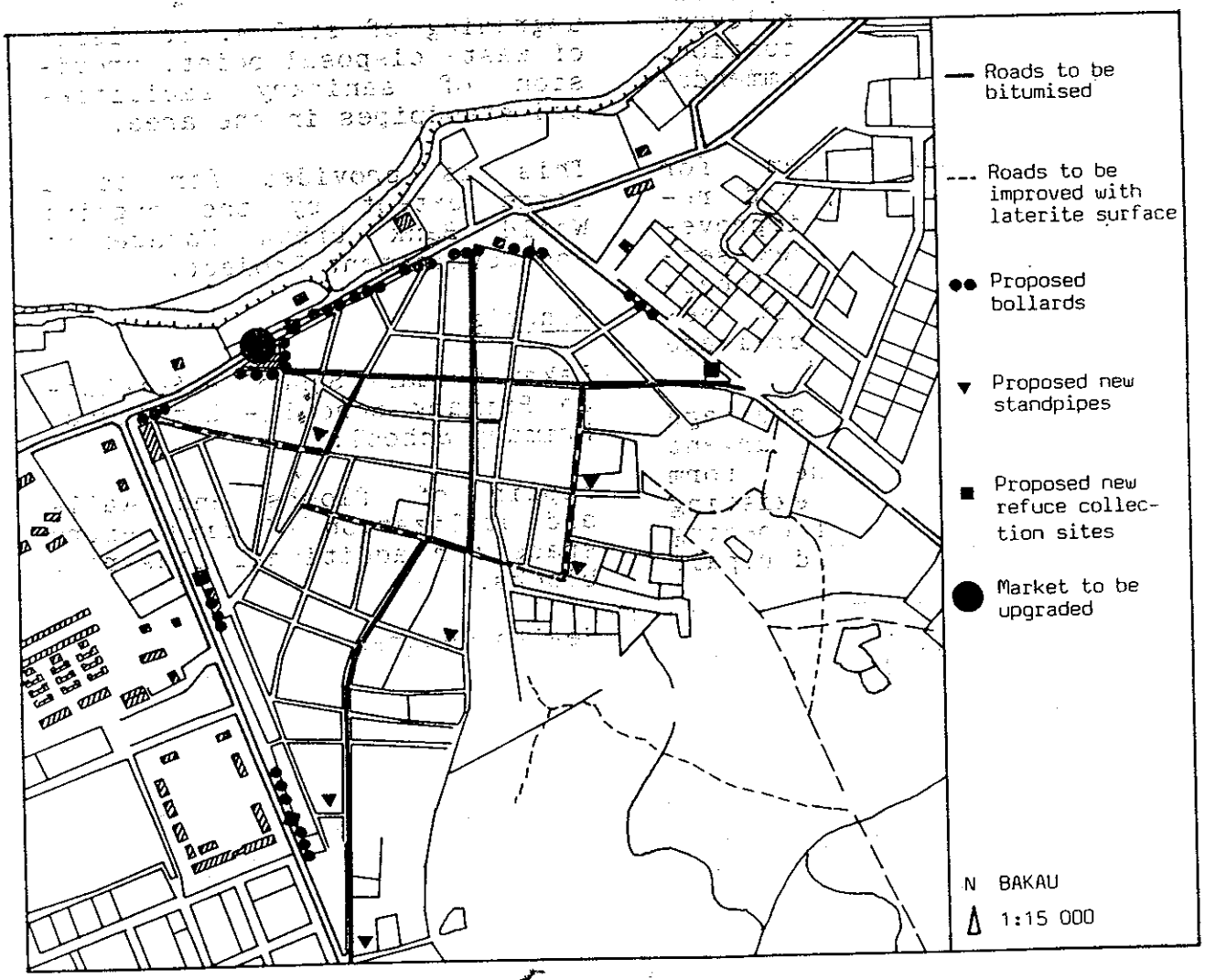
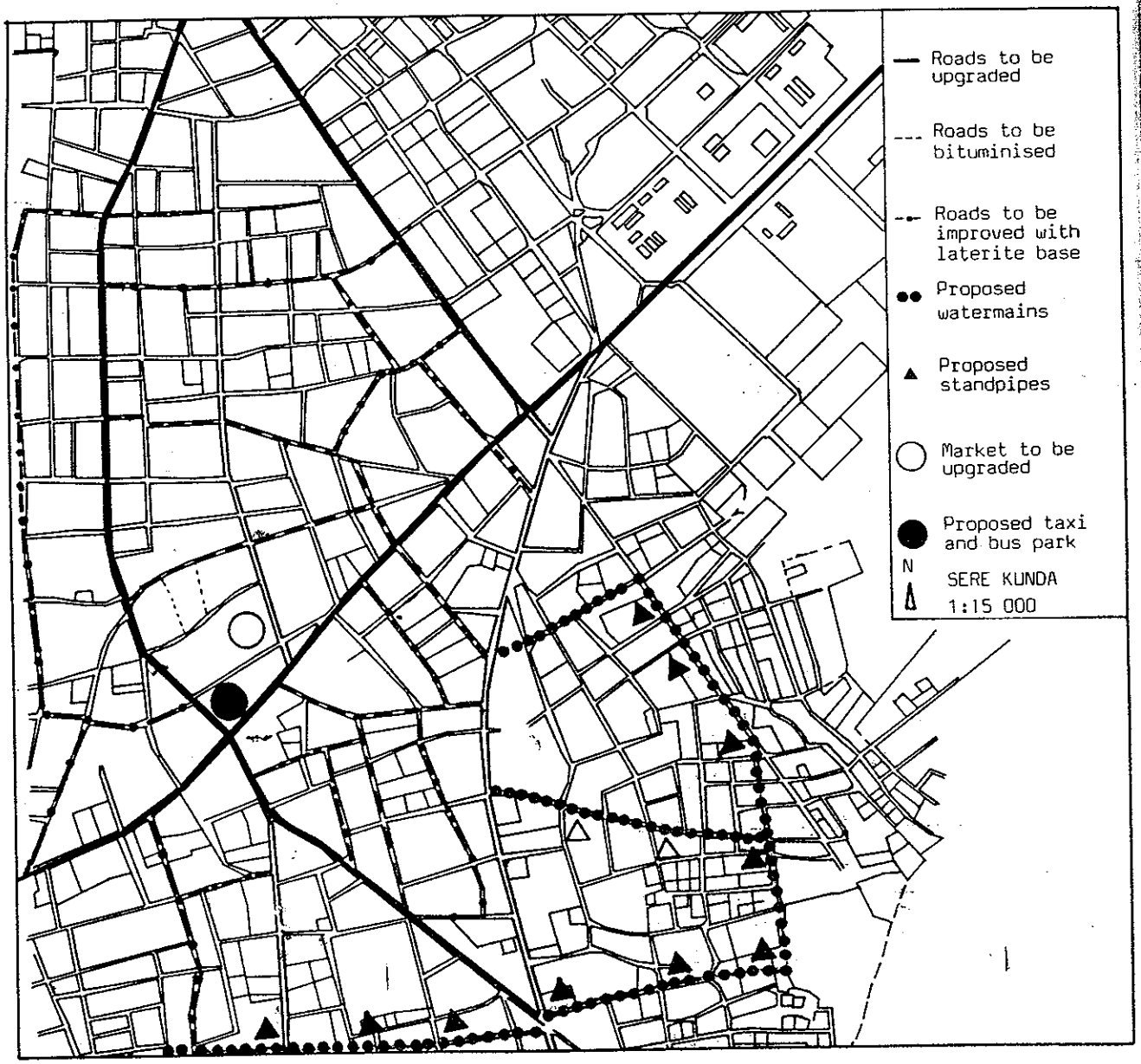


Figure 16: Bakau: Proposed Upgrading Programme by UMDP

Figure 17: Serekunda: Proposed Upgrading Programme by UMDP



the area from the inside and the surrounding main road
- pavement of selected significant roads (main roads and/or service roads)
- street lighting of focal and/or crucial traffic points

Above all, this upgrading programme shall include the peripheral areas of Serekunda since they do not only have a functional importance in connection with the centre of Serekunda, but also in conncection with neighbourhood settlements like Sukuta, Faji Kunda and Latri Sabiji. Banjul, Bakau and Serekunda themselves are not considered for any road construction or improvement as the ongoing exercise of road improvement started in October 1984 in Banjul and World Banks Upgrading Programmes for Bakau and Serekunda would suffice for some time ahead.

4 Preservation Strategy

4.1 Criteria

As mentioned above (section C 1.3), the leading criteria to decide on areas and settlements to be preserved are as follows:

Conservation

Areas which are well functioning in the sense of enjoying an optimum land use, areas which offer potentials for future uses and/or are unique in character such as:

1 Gardening and rice growing areas
2 Forests
3 Green belts (partly to be established)
4 Mineral and water resources
5 Special landscape features
6 Historic/religious sites

Control and further development

Settlements which are well functioning in the sense of having optimum size, structures and land uses and/or are unique in character such as:

7 Villages to be contained in size and preserved in their present function
8 Villages to be contained in size
9 Settlements to be preserved in their structural characteristics
10 Special case: Coastal Erosion

4.2 Areas to be preserved (cf. following maps)

1 Gardening and Rice Growing Areas

Gardening and rice growing are only feasible in moist depressions with soils of high fertility. These conditions are only found at few locations in the Greater Banjul Area and must therefore be conserved. The locations are as follows:

1a) Gardening area south of Bakau, along Mile-7-Road and Old Jeshwang.

1b) Scattered small-scale gardening and some rice growing areas along the mangrove swamps and Bolongs east of Kanifing, Eboe Town and Fajikunda.

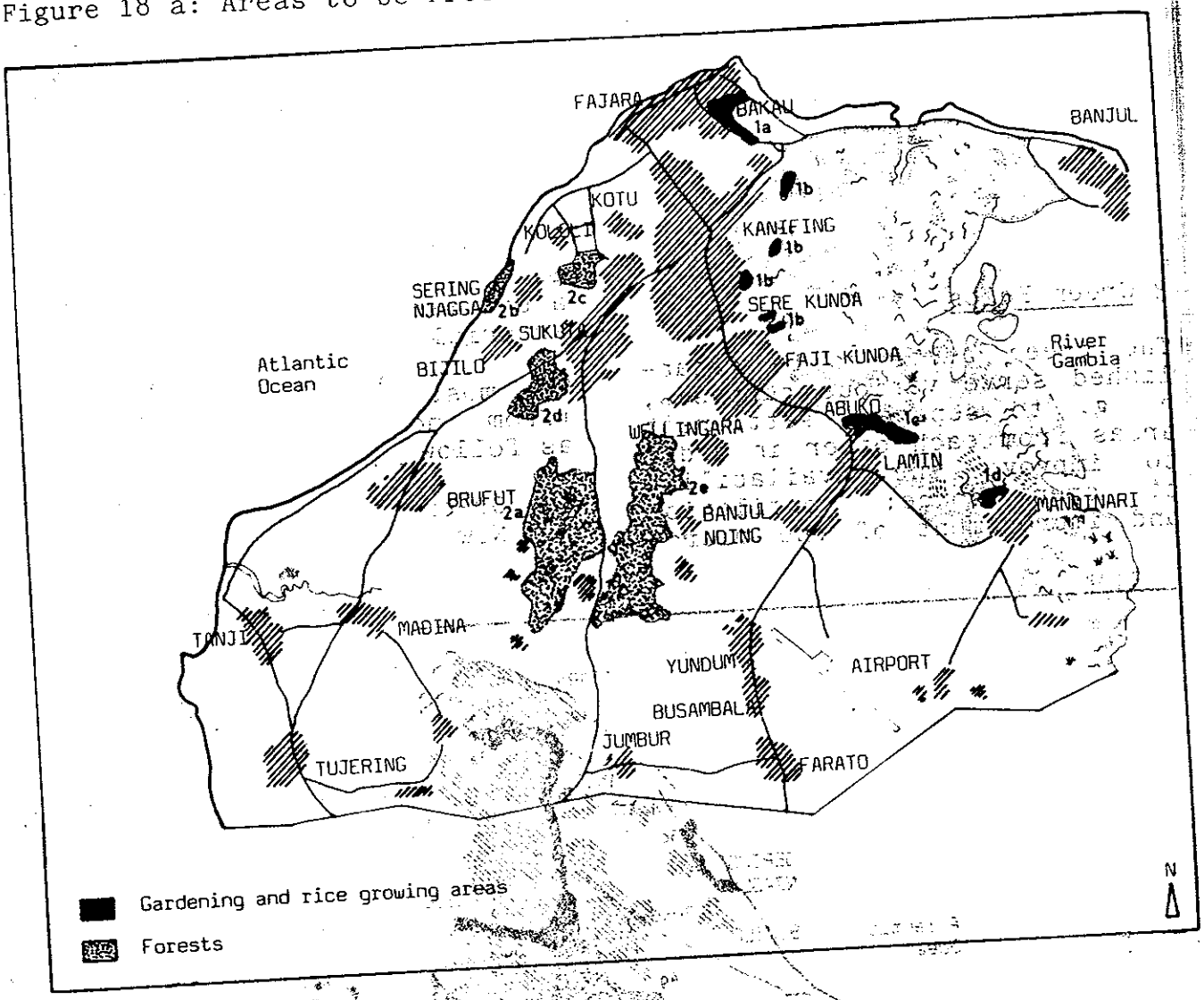
1c) Gardening area around the Lamin Stream east of Abuko Nature Reserve.

1d) Gardening area north of Mandinari.

1e) Gardening and rice growing areas in the Kotu Stream depression from Wellingara down to the Kotu estuary (coinciding with green belt).

1f) Some gardening and rice growing areas in the Tanji Stream depression between Tubaya and the Tanji estuary; the area has the potential for more intensive gardening, especially if the salination of the lower banks of the Tanji estuary can be reduced by making use of the new fishery road bridge (near Tanji fish curing site) as a sluice gate; the bridge is designed for that purpose.

Figure 18 a: Areas to be Preserved



2 Forests

There are only two classified forests in the Greater Banjul Area:

2a) Salaji forest park south of Sukuta; this park should be extended to the south up to the Tanji Stream.

2b) Bijilo forest park between Bijilo and the Senegambia Hotel; it is of special importance that the sand digging along the beachside of the forest park is completely stopped because it speeds up erosion and the salination of this forest park.

Apart from these classified forest parks, there are three more forest areas which deserve special attention (reafforestation and protection) due to their location close to settlements (2c) and 2d) and to water protection areas 2e)).

2c) Palm stands west of Bakoteh housing estate; together with Bijilo Forest Park this is the only substantial remainder of palm tree forest in the GBA.

2d) Forest and bush west of Sukuta; essential for local surface water regimen and gardening area at

the western fringe of Sukuta.

2e) Remaining forest east of Salaji forest park; this forest is endangered by agricultural encroachment (slashing and burning), but must be protected due to its closeness to water protection areas.

3 Green Belts

The green belts to be established serve various purposes, e. g. to separate settlement areas from each other in order to improve the availability of open space; ventilation and improvement of the microclimate are essential, especially when urban areas are being densified and are growing in size. Green belts should not just be left as open spaces or shrubland, but should be planted with trees, preferably mango or other fruit trees. Gardening etc. may also be encouraged wherever possible. Some of the green belts partly also serve as reserves for arterial roads.

The most important green belts (from north to south) are as follows:

3a) Green belt between Bakau New Town and Kanifing,

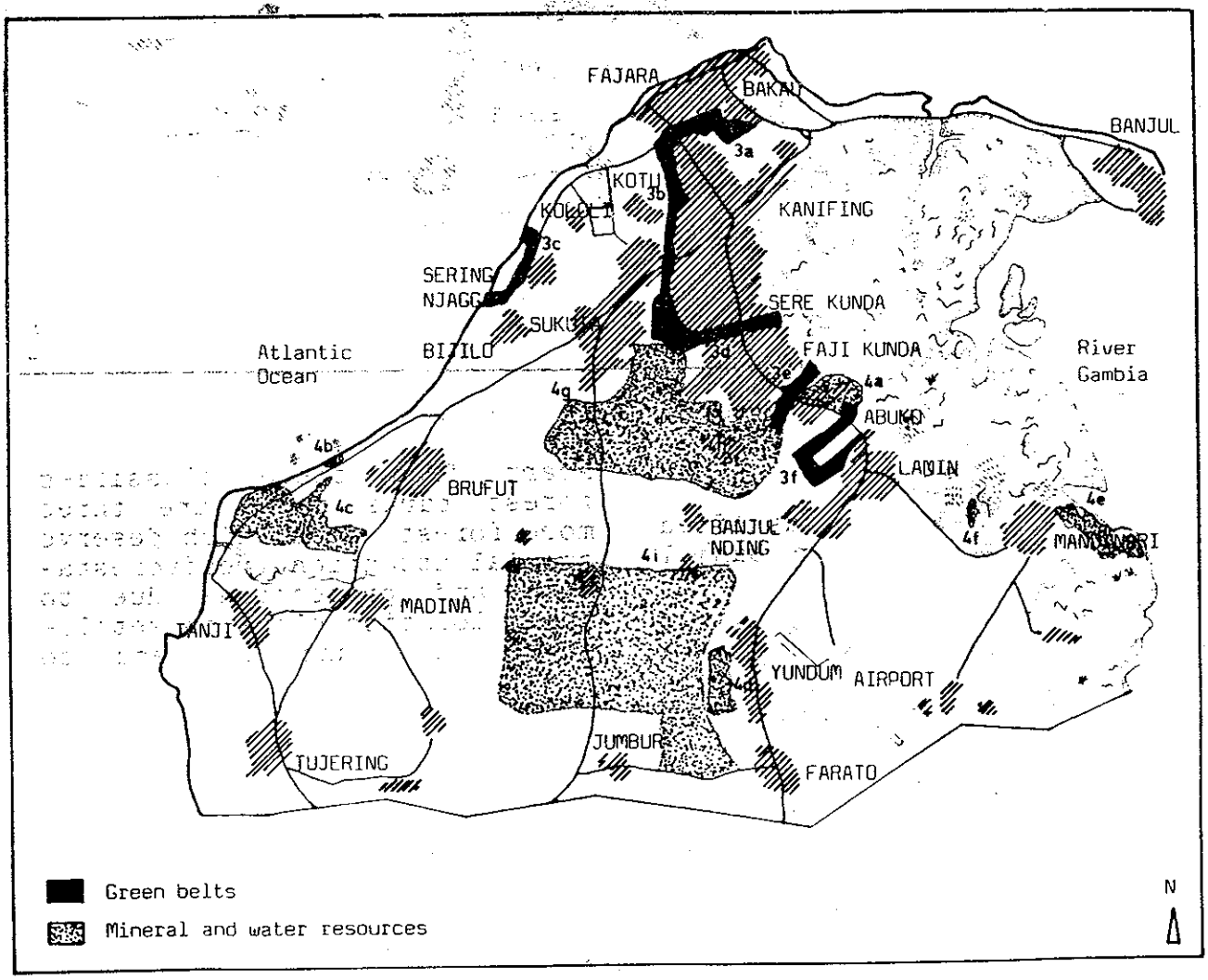


Figure 18 b: Area to be Preserved

serving also as a road reserve for the extension of the Badala Parkway from Kairaba Avenue (former Pipeline Road) to Mile-7-Road.

3b) Green belt along the Kotu Stream to prevent further urban sprawl especially between Dippakunda/Latrikunda and Manjai kunda as well as between Bundunka kunda/Nema Kunku and Sukuta. South of the Serekunda – Sukuta Road this green belt also serves as a reserve for the southward extension of the arterial road from the Kotu Beach Hotel complex up to Bundunka kunda.

3c) Green belt between Sering Njagga and the Bijilo Forest Park to protect the latter from settlement encroachment.

3d) Green belt at Tallinding Kunjang to separate the "Greater Serekunda" agglomeration from the Latrikunda Sabiji/Faji kunda agglomeration. This green belt also serves as a reserve for a new east-west arterial road from the National Highway bypass east of Tallinding Kunjang to Sukuta.

3e) Green belt between Tabor Koto/Wellingara and Abuko to prevent further urban sprawl. This green belt in the west is joining the water protection area of Sinch/Kunkujang.

3f) Green belt, 300 metres wide, around the Abuko Nature Reserve to protect it from further encroachment by forest depletion, agriculture and settlements. This green belt should be afforested. Northwest of the National Highway it shall be merging with the protected gardening zone around the Lamin Stream.

4 Mineral and Water Resources

There are several mineral deposits and ground-water resources within the Greater Banjul Area which have to be kept free from any building developments. Other protective measures are not required except for water protection areas where tree planting should be promoted.

4a) Quartz sand deposit in and around Abuko. This sand deposit is the best one in The Gambia suitable for glass production. As the deposit is very large, no relocation of existing buildings of Abuko is necessary. Nevertheless, the village should be contained to its present size.

4b) Small zircon sand deposit between the two short roads near Ghana Town leading from the main fishing road to the beach. This deposit consists of a sand hill remaining from the former ilmenite beach sand exploitation and still contains a high proportion of zircon which at that time was not extracted. In case the world market allows for sufficiently high zircon prices, this sand could be transported to an extraction plant to be erected near even larger zircon sand deposits close to Sanyang.

4c) A large quartz sand deposit southwest of Brufut of less quality than in Abuko.

4d) Clay deposit west of Busumbala suitable for burnt bricks.

4e) Clay deposit east of Mandinari, close to the river bank, also to be used for burnt bricks.

4f) A small salt extraction site west of Mandinari.

4g) Water production area of the Sukuta-South well field.

4h) Water production area of the Wellingara well field.

There is a land use conflict between this well field and the existing built-up areas of Nema Kunku and especially the small villages of Sinchu/ Kunkujang which existed before the water production boreholes were drilled. The existing settlement must be contained to its present size and new buildings even in existing compounds only be built upon GUC's approval.

4i) Water production area in the Tanji catchment area foreseen for major extensions of water production within the next 10 to 20 years. The area is mainly covered by shrubs and agricultural uses.

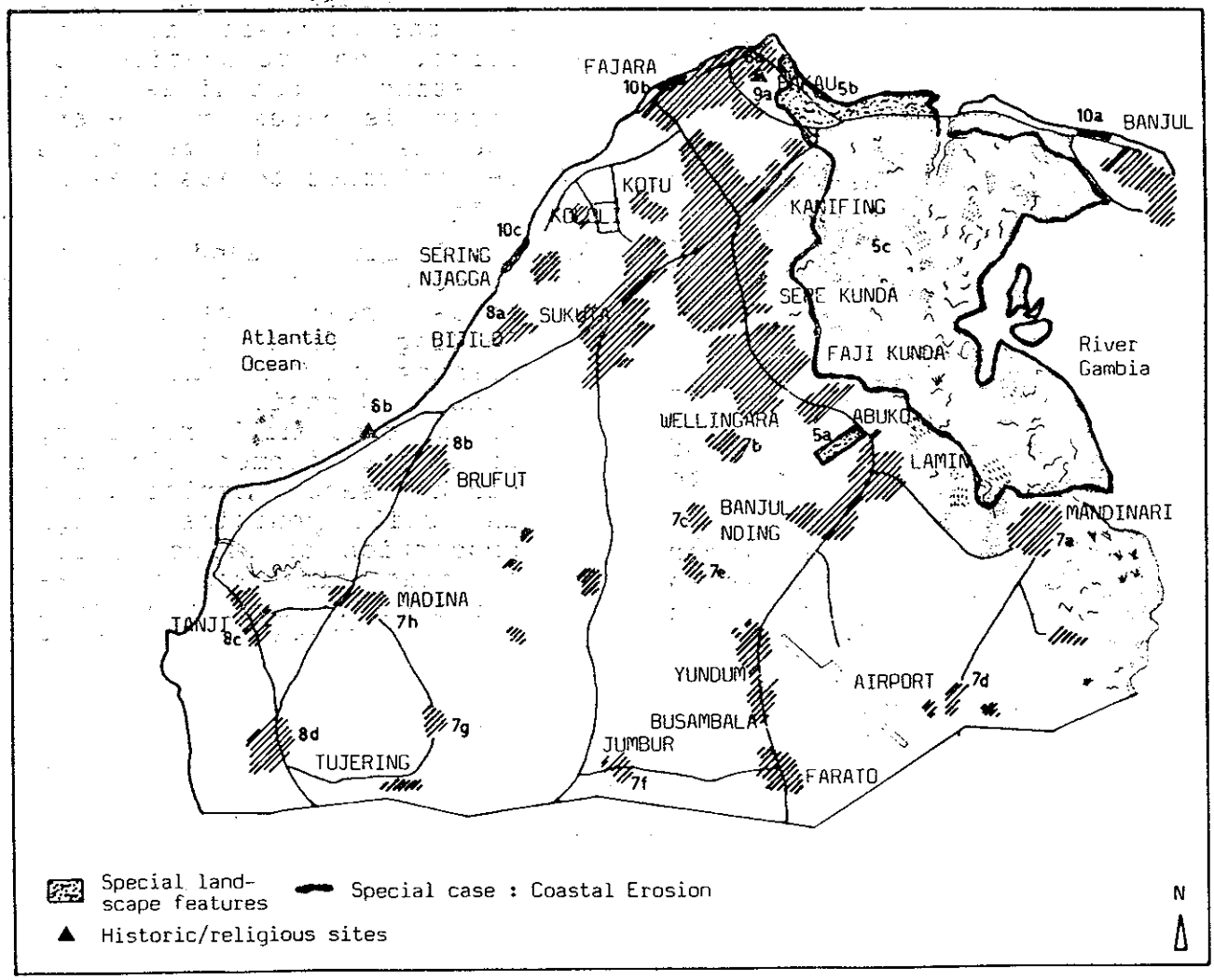


Figure 18 c: Areas to be Preserved in the GBA

Tree planting should be encouraged.

5 Special Landscape Features

Wildlife and nature protection and also economic considerations with respect to tourism require the strict conservation of the following areas which means that no changes at all should be allowed except the replanting of the natural vegetation:

5a) Abuko Nature Reserve. This sole remaining part of the former thick forest covering the whole region only some 30 years ago, is an asset for nature conservation as well as for tourism. The Abuko Park is endangered by the depletion of forests outside its immediate boundaries and settlement encroachments from south (Lamin) and north (Abuko, tannery, abattoir). Therefore, a green belt (see section 3g) above) has to be established and demarcated around the park in order to give a minimum of protection to the water regimen of the Lamin Stream which already has nearly fallen dry.

5b) The coastal strip between Denton Bridge and Bakau including the small palm grove protruding into the mangrove swamp form a unique landscape feature and habitat with its mix of lagoons, shrubs and baobab trees. The vegetation also prevents erosion, being a problem further east along the same coastal line.

5c) The mangrove and bolong landscape should be protected as a resource for oysters and other fish as well as a natural curiosity. Also the interspersed small baobab islands must be kept free from any developments (e. g. tourist facilities).

The dumping of household wastes at waste dips which are limited in size is not regarded as hazardous as long as the waste does not contain waste medicines and other chemicals. Unfortunately this is difficult to control; hence, waste dipping directly into the bolongs should be stopped. The discharge of the waste waters of the Abuko tannery into the Lamin Bolong is a potential hazard for the oyster fishing and the gardening area which can only be controlled by strict supervision of the tannery's operations and waste water discharges.

6 Historic and Religious Sites

There are two peculiar sites said to be sacred in the Greater Banjul Area which deserve special attention and should be properly fenced:

6a) Katchically Sacred Pond at the southern fringe of Bakau. This place should be kept clean, and the open drain at times discharging its overflow into the pond area has to be redesigned and extended to carry the waters to the east towards the gardening area and the lagoon.

6b) Sanementereng Sacred Site on the high cliffs west of Brufut. A small house and a baobab tree are of religious importance.

The place should be fenced and the access road leading to it maintained.

7 Villages to be Preserved in Site and Function

As a general rule, the rural villages of the Greater Banjul Area should not be allowed to grow in size in order to protect the surrounding agricultural land from being built up. Due to the very low densities of the villages, they have sufficient internal reserves to accomodate the natural population increase of the villagers. Immigrants, if any, should only be given land within the presently built-up area.

The "inland" agricultural villages of Mandinari (7a), Kunkujan Jataya (7b), Madina Sey Kunda (7c), Makumba Ya (7d), Old Yundum (7e), Jambur (7f), Baniakau (7g) and Madina (7h) are to be contained in principle within their present boundaries of built-up area and are to be preserved in their function of agricultural production; this means that only land uses and facilities to enhance agriculture and agricultural processing and marketing should be permitted.

8 Villages to be Preserved in Size only

The "coastal" villages of Bijilo (8a), Brufut (8b), Tanji (8c) and Tujereng (8d) will be subject to stronger pressures in changing their function as agricultural and fishery villages due to their locations, good climatic conditions (breeze from the sea) and the good road connection to the urban area. These villages should be allowed to follow this pressure as far as they can accomodate additional functions like small hotels, second residences, pensioners' residences etc. within their present boundaries. No areal extensions for such purposes should be foreseen except if they contribute to the net revenue return of the village and to a diversification of its local economy.

9 Preservation of Structural Characteristics

The small town of Bakau (9a) is essentially a residential and small commercial quarter with some decentrally located retail shops. Bakau is for historical reasons and due to its traditional social structure, which is largely reflected in the lay-out of compounds, a unique place compared to all other settlements in the northern Kombos. The basic physical structure consists of one-storey houses grouped in compounds, of relatively narrow streets and of open spaces (bantaba) for each neighbourhood. This structure deserves to be preserved which does not mean that no changes and improvements should be applied at all, but they must be appropriate and compatible with the present situation. For example, building heights should not exceed one storey, bantabas should be preserved etc. The details of regulations and guidelines for Old Bakau will be worked out at a later stage when an action area plan will have been worked out.

10 Special Case: Coastal Erosion

There are three coastal strips in the Greater Banjul Area where erosion caused by currents, surf and inappropriate uses give reason for alarm and require coastal protection

asures:

)a) The beach along the old cemeteries near Mile 1 and 2 of the National Highway is subject to quite a fast erosion by tidal currents. The construction of groynes and breakwaters is necessary to allow the beach-sands to settle down rather than being washed away. Whether this measure alone will be efficient, remains to be seen once it is implemented.

10b) Some parts of the Fajara cliffs are destabilized by being undermined by the sea and eroded by surface water from the top. If nothing is being done, it will only be a question of time when the first Government houses (east of Fajara water tanks) may be endangered. Corrective action unfortunately will be expensive:

Concrete tetrapodes or at least heavy laterite blocks should protect the bottom of the cliffs. The indiscriminate depletion of bushes and the digging of drains and other ditches on top of the cliffs should be forbidden, since the surface water deeply cuts into the soft, sandy material, thus further fragmenting the cliffs.

10c) The beach sand extraction near the Bijilo Forest Park should be stopped. It is not only jeopardizing the forest's existence by the intruding salination of the soil, but also causes the coastline to be washed out by the sea once the forest is depleted and the small natural dyke along the beach is broken due to indiscriminate sand digging and/or the waves of a springtide.

An alternative site for sand extraction is the beach south-west of Bijilo where the beach is much wider and has a smoother gradient into the sea.

5 Implementation and Monitoring

5.1 Administrative Plan Implementation

The planning procedure and issues of the administrative procedures were extensively discussed and recommendations given in the first draft Physical Development Plan for the GBA, chapters 7.3 and 10. Therefore, only some of the main issues are briefly outlined here.

5.1.1 Administrative Organisation of the Planning Process

Although the Physical Planning Act only came into force in September 1984, the Gambian-German planning team within the Physical Planning Department had been following the guidelines of the bill right from the beginning of the project. In the absence of any other legal base for setting up this Physical Development Plan, this procedure was chosen in anticipation of the regulations provided by the law, based on the bilateral project agreement between the two governments of The Gambia and the Federal Republic of Germany.

The actual setting up of the Plan, institutionally entrusted to the Physical Planning Department, consists of three main components:

(a) Collection of information and data

(b) Analysis and processing of information

(c) Designing courses of action ("strategies") resulting from (a) and (b)

In order to fulfill tasks (a) to (c), the Physical Planning Department strongly relies on the cooperation with other departments; for instance for(a) the Department has to rely on the Department of Surveys and on the Department of Central Statistics and for (c) on various other sectoral institutions depending on subjects being covered in the planning exercise. However, task (b) is the exclusive responsibility of the Department of Physical Planning. In this task the synoptic view of different sectoral information and the analysis of the mutual side-effects and spatial impacts are the essential elements. The diagram on the next page summarizes the most important communication flows required to set up a plan.

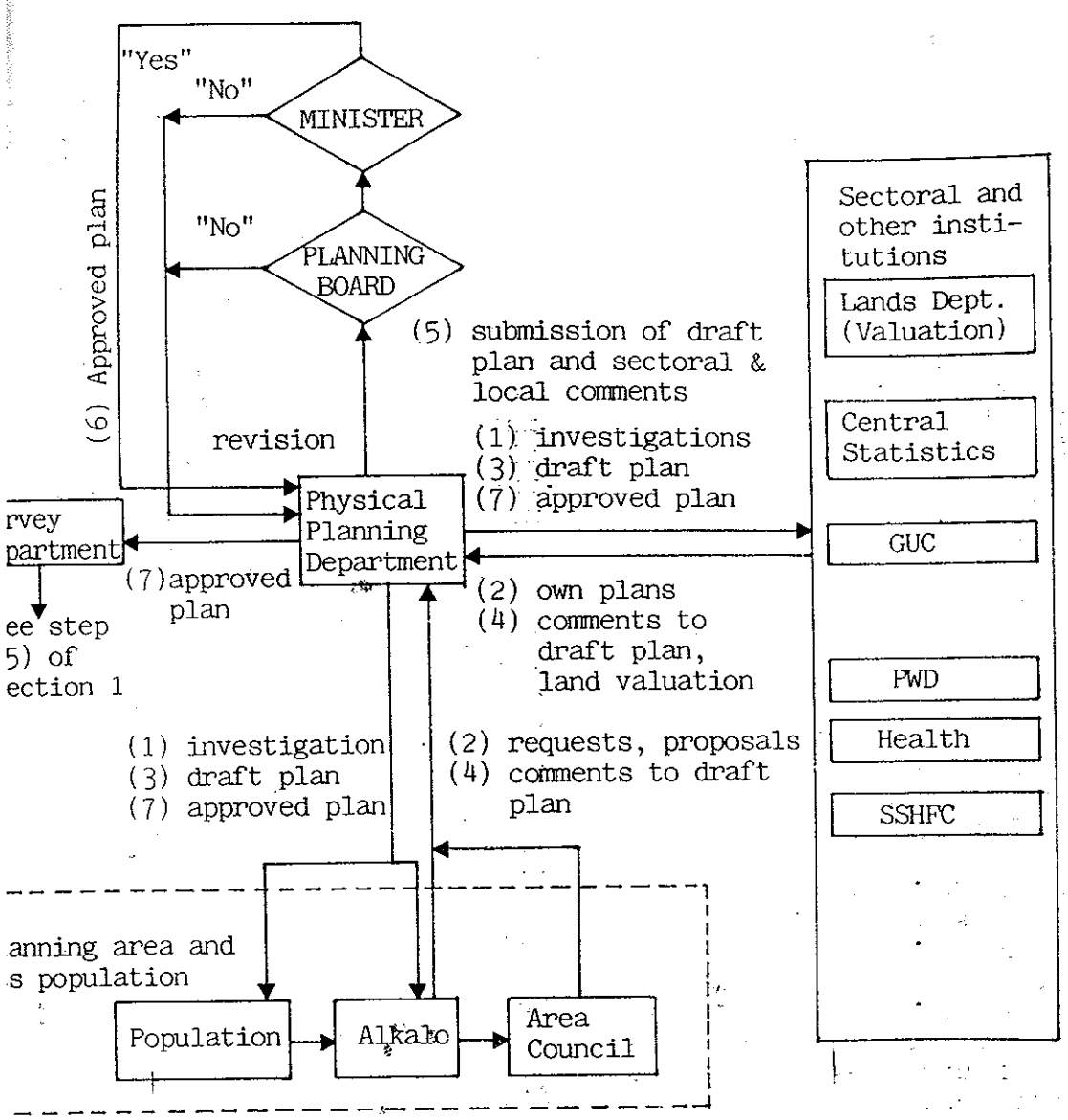
The most important communication steps on the Physical Development Plan so far were the presentation of the First Draft on February 2, 1984 and the subsequent feedback and comments from various institutions concerned. Whereas in the First Draft three physical development alternatives had been proposed, this final draft elaborates on the "multi-core-development" alternative only which was unanimously judged to be the most appropriate option for the GBA. All the comments made by other institutions were taken into account as they were brought to the attention of the planning team and incorporated into this Final Draft. The last opportunity to make comments and amendments before the final approval is the period of display of this Draft Plan (see below).

5.1.2 Public Participation Process

In any planning process, public participation is an important prerequisite and this present planning exercise is no exception to this rule. However, being the first of its kind in The Gambia, we have been confronted with several difficulties in ensuring the participation of the public in the exercise. The main difficulties are:

- A physical development plan for an area covering much more than the individual's immediate neighbourhood is a relatively abstract subject to understand and to take interest in. For example, it is not very likely that the Alkalo and the people from Abuko have a major interest or firm opinion on what is going to happen in Bakau and vice versa. On the other hand, it is important to explain the local implications of the Physical Development Plan to the local population.
- Communication with the general public requires a great deal of time, staff and appropriate media.
- Participation of the population requires a certain level of awareness and of competence to become produc-

Diagram on the Major Communication Steps of the Physical Planning Department in the Process of Physical Plan Making



ote: The figures in brackets indicate the sequence of communication steps:

.) PPD start with investigations locally and sectorally.
?) Local and sectoral institutions feed back their requests, plans.
3) PPD prepares first draft plan, forwards for local and sectoral scrutiny.
1) Local and sectoral institutions feed back.
5) PPD submits draft plan to Planning Board.
5) Planning Board and Minister approve plan.
7) PPD forwards approved plan to Survey Department for demarcation, to Lands Department for updating of cadastral maps etc. and to all parties concerned for their information.

tive. Local people are usually very competent in pointing out problems of their neighbourhood, but are less competent to develop proposals for overall policies. It is also naive to expect them to have a fair consideration of the interests, merits and needs of other communities.

During the preparation of this Physical Development Plan only some limited efforts could be made to ensure public participation due to a lack of staff and time:

- The extensive field surveys in the beginning of the project offered many opportunities for communication and explanations on the main purpose of these surveys.
- Some radio broadcasts on the planning exercise were made in vernacular languages and in English.

Now that the Physical Development Plan is being finalized, a stronger effort to communicate its implications to the public is foreseen. It is envisaged to accomplish this by means of broadcasts, newspaper articles, video films and meetings in the neighbourhoods etc. The public will also be invited to inspect and comment on the final draft. It is expected that such a "public relations" effort will positively prevent local alienation with government decisions and in the long run will enhance the implementation of the plan as well as any further planning exercise.

5.1.3 Formal Political Approval Procedure

As per the regulations of the Physical Planning Act (cf. section A 1.2 above), the Final Draft Plan is to be submitted to the Physical Planning Board which will approve the display of the plan in public for everybody's scrutiny during a period of 30 days. The comments and requests made during this period should be collected, considered and eventually integrated into the draft plan at the discretion of the Physical Planning Department. Comments and requests which are not favourably considered and integrated in the draft plan have to be presented to the Planning Board, together with the counter-arguments of the Physical Planning Department, for final discussion and decision. If the Planning Board decides on any alteration of the draft plan, it is referred back to the Physical Planning Department. Decisions of the Planning Board should be communicated to all parties concerned, especially to those having made comments and proposals for alterations.

After the (re)submission of the draft plan to the Planning Board, the draft plan is submitted to the Minister for final approval by Cabinet.

5.1.4 Preparation of Lay-Out and Action Area Plans

Lay-out and action area plans are enlargements of the Land Use Plan 2000 showing in more detail what shape and use every plot should have. Lay-outs are required for future settlement areas which are so far not or only sparsely

ilt-up, action area plans e necessary to determine ie details of upgrading and nsification of existing ilt-up areas. Depending the urgency of development essure, such plans are to prepared in the following quence:

. Lay-out for the area between Kanifing and Bakau New Town (additional areas around the World Bank Sites and Services Project).

. Lay-out for Eboe Town/Tall-inding Kunjang to regularize ongoing land invasions and urban sprawl.

. Action Area Plan for Banjul City, especially related to questions of port development and port-related industries.

. Action Area Plan for the Latri Sabiji/Faji Kunda area (being the first area to be densified).

. Action Area Plan for Sukuta (second area to be densified).

. Lay-out for Manjai Kunda/Kotu East/Kotu South and Action Area Plan for Kololi.

. Action Area Plan for Lamin/Banjul N'ding (third area to be densified).

This list does not preclude the preparation of additional lay-outs etc. for other areas, too.

5.1.5 Empty Plots' Re-entry Exercise

In order to implement the densification strategy it is of paramount importance to continue and to sustain the re-entry exercise already started for parts of Serekunda. Empty and underdeveloped plots must be identified, the ownership traced and the owner be served with a notice that he either has to develop the plot according to the land use foreseen or that his land will be liable to compulsory acquisition after two years in favour of someone capable to develop the plot. It is essential that the notion of a "developed plot" is clearly (re-)defined. A residential plot without a habitable building and only a watchman's hut on it or an industrial plot without anything but crops produced on it cannot be regarded as being developed.

5.1.6 Development Control

The Physical Development Plan will not be worth the paper it is printed on if its stipulations are not vigorously supervised and controlled in the field. Therefore, the government should establish a Development Control Unit within the Department of Physical Planning which must be equipped with sufficient means of transport (small 4 WD cars and "enduro" motor bikes) and trained field staff. Also ways and means should be found to involve the Alkalolu in the supervision and control of the land use. The field control must be complemented by consistent and consequent administrative and legal action against offenders as stipulated in the Physical Planning Act, 1984.

In order to reduce the unit's running costs, fees for the Development Permits have to be raised to cover at least a substantial part of these costs. The same principle should be applied to the other land documents such as Title Deeds and Building Permits.

5.1.7 Housing Policy Implementation

The implementation of the Housing policies mentioned in chapter B 3.1 cannot be realized without an appropriate institutional set-up and clear responsibilities. Currently, responsibilities in the Housing field are scattered and the tasks assigned are not only not clearly spelt out, but have not been tackled so far. It is therefore imperative that a serious thought is put into providing a sound institutional arrangement for the implementation of Housing policies. One alternative is to recreate a Housing Unit and function within the Department of Physical Planning. This arrangement has been advocated for quite some time now. For instance, the December 20, 1978 memo (ref: LG/845 /Vol.II) of the then Chief Planning Officer, the 1978 ICHDA (International Cooperative Housing Development Association) workshop, the 1979 Housing Finance Study by Alan Knight, the 1979 Badji Commission recommendation and the subsequent Cabinet Conclusion of 1980 (ref: CO/IMP /1008) and the recommendation of the 1984 GTZ Project Team Leader (ref: 160/84/EBR/fj) all suggested the creation of a Housing Unit and function within the Department of Physical Planning. Such an arrangement, if accepted, will allow the utilization of the planning staff in Housing matters for which they are trained. The arrangement does not call for the creation of new Departments, but rather for the efficient utilization of available professional resources on Housing matters. Besides, having a planning and Housing function within the same Department should make co-ordination easy and effective.

The terms of reference for such an arrangement, especially in the field of Housing should include:

- formulation and advice on Housing policies by the Department for both public and private sector efforts in the provision of shelter which is likely to become more and more pressing and complex.
- Identification of the housing requirements in close liaison with local communities. Safeguarding that adequate resources are made available to satisfy the needs of low income families in close collaboration with the Social Security and Housing Cooperation, e. g. on the question of providing soft loans to low income families.
- Within the Physical Planning Department, the Housing Unit should ensure that plans for low income settlement areas are designed in a way to allow for the provision of minimal infrastructure and community facilities which can be improved and extended in future through community self-help efforts.
- Dissemination of and technical advice on the use of local building materials in housing and cost-effective house designs which facilitate phased construction together with appropriate (and not over-ambitious) building regulations and by-laws.

A deliberate attempt should be made to build up the proposed Housing Unit by using the experiences being made in the World Bank and the

GTZ sponsored Urban Development Projects; these experiences should be complemented by institutional training programmes to form a cadre of people with planning, surveying, construction and Community Development skills which can be applied in future programmes and projects. Technical assistance should be sought to set up the proposed Housing Unit, to raise seed capital funds for pilot self-help housing projects and to study low-cost housing finance so that appropriate mechanisms for mobilizing local finance for house constructions and improvements can be established.

5.2 Physical Plan Implementation

5.2.1 Demarcation of Settlement Boundaries

Immediately after approval, the Survey Department should demarcate the settlement boundaries shown in the Land Use Plan 2000 on the ground with extra large boundary stones (to be easily recognized as something different than the usual plot boundary stones). In an extra public information campaign, the meaning of these boundary lines (no new buildings outside the settlements) must be explained to the general public, and especially to the Alkalolu. The latter should make a formal commitment not to participate in any land allocations within the settlement boundaries without general government's sanction, and the public must be made to understand that all land allocations by the Alkalolu alone, without central government's approval, are null and void and liable to expropriation.

Whereas the purpose of the settlement boundaries is the containment of settlements in order to avoid urban sprawl and to protect agricultural land, green belt boundaries (if they do not coincide with settlement boundaries) and forest areas are designed to protect these areas from encroachments by agricultural uses. Forestry areas should be fenced and protected in a similar way as the existing forest parks.

5.2.2 Approaches to New Settlement Developments

In principle, there are two main approaches to settlement developments which are different in the sequence of development measures and very different in the financial requirements (cf. below chapter on costing).

5.2.2.1 "Step-by-Step" Approach

The sequence of development steps is as follows:

I. Administrative actions:

- preparation of lay-out plan showing plot subdivisions and reserves for future facilities
- Approval of lay-out
- demarcation of plots
- vetting of demarcated plots by the Physical Planning Department
- Allocation of land to applicants

II. Implementation on the ground:

- development permits given to plot holders

- clearing (building) of access ways
- plot development by plot holders as affordable, starting at lowest level; building regulations to be enforced after a certain "grace period" only
- provision of water supply (minimum number of standpipes)
- waste collection to be organised in self-help
- schools etc. to be built, preferably in self-help
- surface drainage, road improvements (laterite roads, surface sealed etc. as affordable)
- improvement of water supply (more standpipes, compound connections to those who can afford it)
- improvement of waste collection (formal system)
- electricity supply
- etc.

The "step-by-step" approach can be extended over years and has the advantage of flexibility; the development process can be interrupted at any point without waste of funds. The implications are the initial low standards of housing and infrastructure which may persist over quite a number of years.

5.2.2.2 "Land Developer's" Approach

The sequence of development steps is as follows:

I. Administrative actions:

- preparation of lay-outs and construction plans for social amenities and technical infrastructure
- approval of plans
- demarcation of plots, roads, reserves for amenities etc.
- vetting of demarcated plots by the Physical Planning Department
- investment capital: fund raising, bank credits, feasibility studies etc.
- allocation of land to applicants

II. Implementation on the ground:

- development permit given to applicants
- construction of access roads and paths including surface drainage
- provision of water supply
- formal organisation of waste collection
- provision of electricity supply
- plot development by plot holders according to set standards, possibly with credit assistance

Depending on the level of infrastructural services chosen at the beginning of the development, later improvements may be necessary (upgrading of facilities).

The "land developer's" approach has the advantage of providing a fair standard of services before inhabi-

ants are moving into the rea. It has the disadvantage f requiring more capital inancing arrangements than he "step-by-step" approach ince the total expenditure or the development of the rea has to be spent more r less in one go. It also as the disadvantage of being nflexible. If the development rocess is delayed or interrup-ed at any time before inhabi-ants start moving in and aking use of the area, the nvestments made up to that ime are lying idle (example: otu area). Given the overall economic conditions, it is nlikely that the "land devel-per's" approach can be fol-lowed throughout the GBA.

5.2.3 Development Package Programmes per Area

In this section the main projects for the major development areas of the GBA are listed, whereas the timing of investments and running costs is shown in the next chapter where also the cost assumptions given here as totals are further detailed.

1) Kanifing

	Costs in '000 D
Development of additional new residential areas	7,200
Road from MDI to Radio Gambia	840
Primary School	900
Extension Badala Parkway to Radio Gambia	1,650
High School	1,350
Total	11,940

2) Ibo Town/Talinding Kunjang/ Bundung

Development of new residential areas	18,000
Six primary schools	5.400
Secondary school	1.035
Two health dispensaries	100
Two health centres	2.360
Talinding - Sukuta road with Bakoteh branch	4.200
National Road from Abuko to Old Jeshwang	6.000
Upgrading of areas not covered by present World Bank Project (Serekunda South/Bundung)	23,000
Total	60,095

3) Latri Sabiji/Faji Kunda

Upgrading of existing areas	28,750
Development of new residential areas	46,800
Five primary schools	4,500
Secondary schools	1,035
Health Centers	1,180
Hospital	3,960
Total	86,225

4) Sukuta

Upgrading of existing areas	31,625
Development of new residential areas	38,700
Four primary schools	3,600
Secondary school	1,035
Health Centre	1,180
Hospital	3,960

tants are moving into the area. It has the disadvantage of requiring more capital financing arrangements than the "step-by-step" approach since the total expenditure for the development of the area has to be spent more or less in one go. It also has the disadvantage of being inflexible. If the development process is delayed or interrupted at any time before inhabitants start moving in and making use of the area, the investments made up to that time are lying idle (example: Kotu area). Given the overall economic conditions, it is unlikely that the "land developer's" approach can be followed throughout the GBA.

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Development of new residential areas	38,700
Four primary schools	3,600
Secondary school	1,035
Health Centre	1,180
Hospital	3,960

4) Contd.

Extension of Badala parkway from Kololi to Sukuta	2,160
Sukuta Western Bypass road	1,590
Total	83,850

5) Lamin/Banjul N'Ding

Upgrading of existing areas	21,850
Development of new residential areas	25,200
Three primary schools	2,700
Secondary school	1,035
Health Centre	1,180
Road from Banjul N'ding to Sukuta	3,660
Total	55,625

6) Bakoteh

Development of new residential areas	8.100
Primary school	900
Total	9,000

7) Kololi/Kotu/Manjai Kunda

Development of new residential areas	27,000
Secondary school	1,035
Kololi South connection road	650
Total	28,685

Grand total of cost estimates for urban development of GBA	335,420

Within a period of 10-15 years,

- the total investment per new inhabitant is 1,863 D/person
- the total investment per all inhabitants is 932 D/person under the assumptions made in the following chapter.

6 Investment Estimates and Schedules

6.1 Cost Estimates for Technical Infrastructure: Investments

6.1.1 Roads

There are two types of new roads shown in the Land Use Plan 2000:

- Arterials:

20-24 m reserve;
6-7 m carriageway, 1.5 m shoulders and open drains on both sides;
construction unit costs including contingencies, overheads and profit: 600.- D/m.

- National Road:

30 m reserve (or more);
9 m carriageway, 1.5 m shoulders and given drains on both sides;
unit costs: 800,- D/m

the roads should be built in the following sequence:

	Cost in '000 D
1) Kanifing: MDI to Radio Gambia Type: Arterial, 1.4 km at 0.6 mill D/km	= 840

2) Talinding - Sukuta and Bakoteh branch
Type: Arterial, 7.0 km at 0.6 mill D/km = 4,200

3) Kololi Sotuh connection road
Type: Arterial, 1.3 km at 0.5 mill D/km = 650

4) Extension of Badala Parkway from Kairaba Av. (= formerly Pipeline Rd.) to Radio Gambia
Type: Arterial, 2.75 km at 0.6 mill D/km = 1,650

5) National Road from Abuko to Old Jeshwang (Faji Kunda - Serekunda bypass),
Type: National Road, 7.5 km at 0.8 mill D/km = 6,000

6) Extension of Badala parkway from Kololi to Sukuta,
Type: Arterial, 3.6 km at 0.6 mill D/km = 2,160

7) Banjul N'ding to Sukuta Road,
Type: Arterial, 6.1 km at 0.6 mill D/km = 3,660

8) Sukuta Western bypss,
Type: Arterial, 2.6 km at 0.6 mill D/km = 1,590

Total 32.3 km new roads constructions = 20,750

6.1.2 Upgrading and New Areas

Since detailed plans and layouts for upgrading and new areas are only available for the target areas of the ongoing World Bank Urban Management and Development Project (Serekunda and Bakau upgrading and Kanifing Sites and Services), the cost estimate for these projects are taken as the best available guideline to estimate the overall costs for all the other areas of the Land Use Plan 2000 to be upgraded or newly developed to the same standard as the Kanifing Site and Services Project. Hence, the following approximate unit prices per hectare are assumed (including 25 % contingencies).

Kind of works	Upgrading D/ha	New Areas D/ha
Earthworks, Roading, Drainage, Misc.	50,000.-	115,000.-
Water supply & distribution	30,000.-	30,000.-
Electrical supply and distribution (incl. street and security lighting)	35,000.-	35,000.-
TOTAL	115,000.-	180,000.-

Some cost savings are possible by mobilizing self-help activities for earthworks, roads etc. The skilled works for water and electricity supply require the same amount per ha in upgrading as in new areas, especially since most of the upgrading areas have

practically none of these facilities. If the funding for these works cannot be mobilized, there is no choice but to limit ourselves with lower standards than in Kanifing. It is not very likely that the Kanifing standard can be kept up throughout the GBA.

- Unit prices for construction works include:

  10 % contigencies
  15 % overheads
  25 % profit

- Costs calculated at constant prices of 1985, since assumptions/forecasts of price increases and inflation rates are too speculative.

Locality	Upgrading Areas ha	Upgrading Areas '000.-D	New Areas ha	New Areas '000.-D
1) Kanifing: Additional residential areas	-	-	40	7,200
2) Ibo Town/Talinding Kunjang	-	-	100	18,000
3) Serekunda/Bundung	200	23,000	-	-
4) Latri Sabiji/Faji Kd.	250	28,750	260	46,800
5) Sukuta	275	31,625	215	38,700
6) Lamin/Banjul N'ding	190	21,850	140	25,200
7) Bakoteh	-	-	45	8,100
8) Kololi/Kotu/Manjai Kd.	-	-	150	27,000
TOTAL	715	105,225	950	171,000

The table (Nr. 23 in the annex) shows the proposed time schedule for infrastructure investments. The total investment sums have been equally distributed in the time schedule over the years of implementation.

- All investment figures in the following tables are given for the year of completion of the respective facilities; this means that this total amount has to be raised at least two to three years earlier and to be distributed over that period to allow for planning, tendering, contracting and construction time.

6.2 Cost Estimates for Social Facilities: Investments

The cost estimates were made under the following assumptions:

- All works to be contracted out to local contractors.
- Building material: sand-cement blocks.

Considerable cost savings could be made, if self-help construction activities were mobilized. Further cost-savings are possible if stabilized mud-bricks with cement plaster are used instead of sand-cement bricks (savings on

building material up to more than 50 %. Such an approach should be chosen with school buildings wherever possible (see below).

6.2.1 Schools

All schools are calculated for three streams. It is possible to start a school with one stream only and to expand it over the years. The land provided for schools in the Land Use Plan 2000 is sufficient for 5 streams for each school.

Primary Schools

Buildings for one stream:

- 6 classrooms each at 50m²
- Stores and office
- Circulation area
- Toilet facilities

Built area approx. 360 m²
Unit price approx. 750 D/m²

360 x 750	= 270,000.- D
Circulation area and infrastructure (water, electricity etc.)	= 30,000.- D
Total Costs per stream	300,000.- D
Total Costs per 3-stream-school	900,000.- D

Secondary Schools

Buildings for one stream:

- 4 classrooms each at 50m²
- 2 Science classrooms (dto.)
- Stores and office
- Circulation area
- Toilet facilities

Built area approx. 380 m²
Unit prize approx. 750 D/m²

380 x 750	=285,000.- D
Circulation area and infrastructure (water, electricity etc.) lumpsum 1	= 45,000.- D
Special equipment lumpsum 2	= 15,000.- D
Total costs per stream	345,000.- D
Total costs per 3-stream school	1.035,000.- D

Cost Savings by Self-Help and Mud-bricks

If buildings can be built by self-help or by directly paid labour, savings of about 1/3 should be possible, hence the unit price of building construction would be approx. 500 D/m². The use of mudbricks would save another 100 D/m²: 400 D/n².

Hence, the total costs would be:

- Primary School:

360m 2x 400 D/m²	=144,000.- D
lumpsum	= 30,000.- D
Total costs per stream	=174,000.- D
Total costs per 3-stream-school	=522,000.- D

Cost saving per school:
378,000.- D or 42 %

- Secondary School:

380m 2x 400 D/m² = 152,000.- D
lumpsum 1 = 45,000.- D
lumpsum 2 = 15,000.- D

Total costs per stream = 212,000.- D

Total costs per 3-stream-school = 636,000.- D

Cost saving per school:
399,000.- D or 38 %

High Schools

Buildings for one stream:

5 classrooms each at 50m²
3 Science classrooms (dto.)
Stores, office, library (100 m²)

Built area approx. 500 m²
Unit price approx. 750 D/m²
500 x 750 = 375,000.- D

Circulation area and infrastructure (water, electricity etc.)
lumpsum 1 = 50,000.- D

Special equipment
lumpsum 2 = 25,000.- D

Total costs per stream 450,000.- D

Total costs per 3-stream-school 1,350,000.- D

6.2.2 Health Facilities

Dispensary

Built area incl. toilet facilities: approx. 40 m²
Construction unit price approx. 950 D/m²

Buildings 40 x 950 = 38,000,- D
External works
lumpsum = 12,000.- D

TOTAL 50,000.- D

Health Centre

Apart from standard installations, an urban health centre should have a ward, dispensary, consultation rooms, small laboratory, mother and child care etc. and approx. 20-25 beds.

Built area approx. 700 m²
Construction unit price approx. 1.000 D/m²

Building construction
700 x 1,000 = 700,000.- D

Circulation area, external works, water and electricity
lumpsum 1= 180,000.- D

Furniture, equipment etc.
lumpsum 2= 300,000.- D

TOTAL =1,180,000.- D

Hospitals

An urban (secondary) hospital, similar in size to the Bansang Hospital, would have
90 beds in 15 rooms, each at 77 m² = 1,155 m²
Bath rooms (showers), toilets, supervision rooms = 145 m²
Other areas:
Surgery, laboratories, dispensary, consultation rooms, mother and child care, stores generator building etc. = 1,000 m²
TOTAL built area 2,300 m²

Construction unit price
approx. 1,200 D/m²

Building construction
2,300 x 1,200 = 2,760,000.- D

Circulation area,
external works,
infrastructure etc.

lumpsum 1 = 500,000.- D

furniture,
equipment

lumpsum 2 = 700,000.- D

TOTAL = 3,960,000.- D

Table Nr. 24 (in the annex) provides an overview of these social facilities which are regarded as basic, and of the road constructions, both in their overall time perspective. Following the overview table, more detailed time schedules for the investments and the running costs are provided in tables No. 25 and 26 (in the annex).

6.3 Cost Estimates for Social Facilities: Running Costs

The following tables show the running costs (including staffing, maintenance etc.) for each of the new facilities foreseen in the Land Use Plan 2000 in thousand Dalasis at constant prices of 1984. The following assumptions were made (based on the budget estimate 1984/85):

Schools	Primary	Secondary	High
Yearly running costs per school stream	37,000.-	50,000.-	131,500.-
Part of administration overheads	3,000.-	4,000.-	8,500.-
Total per stream	40,000.-	54,000.-	140,000.-
3 streams per school = Total per school	120,000.-	162,000.-	420,000.-

Health Facilities	Dispensary	Health Centre	Hospital per bed	90 beds
Yearly running costs	10,000.-	150,000.-	12,000	1,080,000.-
Part of administration overheads	2,000.-	20,000.-		120,000.-
Total per facility	12,000.-	170,000.-		1,200,000.-

The dot • in table 26 means year of completion of facilities (end of investment phase). Running costs are assumed to occur after the year of completion.
All costs calculated at constant prices are of 1984 since assumptions/forecasts of price increases and inflation are too speculative.

Table 25: Investments in Social Facilities
(in thousand Dalasis, at 1985 prices)

Year / Facility Area	1986	97	88	89	90	91	92	93	94	95	96	97	98	99	Total
Prim. Schools															
Kanifing		900													900
"Greater Sere Kunda"		900		900		900		900			900		900		5400
Latri Sabiji/ Faji Kunda			900		900		900			900		900			4500
Sukuta/Bakoteh	900			900			900			900			900		4500
Lamin/ Banjul N'ding					900				900			900			2700
Total	900	1800	900	1800	1800	900	1800	900	900	1800	900	1800	1800		18000
Second.Schools															
"Greater Sere Kunda"								1035			1035				2070
Lari Sabiji/ Faji Kunda			1035												1035
Sukuta/Bakoteh									1035						1035
Kotu/Kololi												1035			1035
Lamin/ Banjul N'ding						1035									1035
Total			1035			1035		1035	1035		1035	1035			6210
High School															
Kanifing								1035							1035
Total								1350							1350
Grand Total	900	1800	1935	1800	1800	1935	1800	3285	1935	1800	1935	2835	1800		25560
Dispensary															
"Greater Sere Kunda		50				50									100
Health Centres															
"Greater Sere Kunda				1180							1180				2360
Latri Sabiji/ Faji Kunda							1180								1180
Sukuta/Bakoteh													1180		1180
Lamin					1180										
Total		50		1180	1180	50	1180				1180		1180		6000
Hospitals															
Latri Sabiji/ Faji Kunda												3960			3960
Sukuta								3960							3960
Total								3960				3960			7920
Grand Total		50		1180	1180	50	1180	3960			1180	3960	1180		13920

Table 24: Phasing of Social Facilities and Road Constructions

Period	1986 - 90						1991 - 95						1996 - 2000					
Facilities / Area	PS	SS	HS	D	HC	H	PS	SS	HS	D	HC	H	PS	SS	HS	D	HC	H
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Kanifing	●								●									
Greater Sere Kunda	● ●			●	●		● ●	●		●			● ●	●			●	
Latri Sab. and Faji Kun.	●	●					● ●				●		● ●					●
Sukuta and Bakoteh	● ●						●	●				●	● ●				●	
Kotu and Kolibli														●				
Lamin and Banjul N'ding		●			●		● ●						●					
Total No.	6	2	0	1	2	0	7	2	1	1	1	1	7	2	0	0	2	1

Roads			
	1. Kanifing:MDI-Radio Gambia 1,4 km	4. Badala Parkway: Kairaba Av.-Radio Gambia 2,75 km	6. Sukuta-Kololi 6,1 km
	2. Talinding-Sukuta and Bakoteh Branch 7,0 km	5. National Highway: Abuko-Old Jeshwang 7,5 km	7. Yundum-Sukuta 3,6 km
	3. Kololi South Connection 1,3 km		8. Sukuta Western Bypass 2,65 km

Abbreviations : PS = Primary School
SS = Secondary School
HS = High School
D = Dispensary
HC = Health Centre
H = Hospital

Table 23: Investments in Technical Infrastructure
(in thousand Dalasis, at 1985 prices)

Area \ Year	1986	87	88	89	90	91	92	93	94	95	96	97	98	99	Total
Upgrading and New Areas															
1.Kanifing			1440	1440	1440	1440	1440								7200
2.Ibo Town/ Talinding Kunjang		3000	3000	3000	3000	3000	3000								18000
3.Sere Kunda/ Bundung			2300	2300	2300	2300	2300	2300	2300	2300	2300	2300			23000
4.Latri Sabiji/ Faji Kunda			7555	7555	7555	7555	7555	7555	7555	7555	7555	7555			75550
5.Sukuta					8790	8790	8790	8790	8790	8790	8790	8790			70325
6.Lamin/ Banjul N'ding							5881	5881	5881	5881	5881	5881			47050
7.Bakoteh						1620	1620	1620	1620	1620					8100
8.Kololi/Kotu/ Manjai Kunda		2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250		27000
Total *		5250	16545	16545	25335	26955	32836	28396	28396	28396	26776	26776	2250		276225
Roads															
1.Kanifing:MOI to Radio Gambia		420	420												840
2.Talinding-Sukuta and Bakoteh branch		1400	1400	1400											4200
3.Kololi South Connection Road				650											650
4.Badala Parkway to Radio Gambia					825	825									1650
5.National Road Abuko-Old Jeshwang							3000	3000							6000
6.Badala Pkwy. from Kololi to Sukuta									1080	1080					2160
7.Banjul N'ding to Sukuta									1830	1830					3660
8.Sukuta Western Bypass											795	795			1590
Total		1820	1820	2050	825	825	3000	3000	2910	2910	795	795			20750
Grand Total		7070	18365	18595	26160	27880	35836	31396	31306	31306	27571	27571	2250		296975

* differences result from rounding errors

Table 23: Investments in Technical Infrastructure
(in thousand Dalasis, at 1985 prices)

Area \ Year	1986	87	88	89	90	91	92	93	94	95	96	97	98	99	Total
Upgrading and New Areas															
1.Kanifing			1440	1440	1440	1440	1440								7200
2.Ibo Town/ Talinding Kunjang		3000	3000	3000	3000	3000	3000								18000
3.Sere Kunda/ Bundung			2300	2300	2300	2300	2300	2300	2300	2300	2300	2300			23000
4.Latri Sabiji/ Faji Kunda			7555	7555	7555	7555	7555	7555	7555	7555	7555	7555			75550
5.Sukuta					8790	8790	8790	8790	8790	8790	8790	8790			70325
6.Lamin/ Banjul N'ding							5881	5881	5881	5881	5881	5881			47050
7.Bakoteh						1620	1620	1620	1620	1620					8100
8.Kololi/Kotu/ Manjai Kunda		2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250		27000
Total *		5250	16545	16545	25335	26955	32836	28396	28396	28396	26776	26776	2250		276225
Roads															
1.Kanifing:MDI to Radio Gambia		420	420												840
2.Talinding-Sukuta and Bakoteh branch		1400	1400	1400											4200
3.Kololi South Connection Road		*		650											650
4.Badala Park-way to Radio Gambia					825	825									1650
5.National Road Abuko-Old Jeshwang							3000	3000							6000
6.Badala Pkwy. from Kololi to Sukuta									1080	1080					2160
7.Banjul N'ding to Sukuta									1830	1830					3660
8.Sukuta Western Bypass											795	795			1590
Total		1820	1820	2050	825	825	3000	3000	2910	2910	795	795			20750
Grand Total		7070	18365	18595	26160	27880	35836	31396	31306	31306	27571	27571	2250		296975

* differences result from rounding errors

Table 26: Running Costs of Social Facilities
(Constant Prices of 1985)

Facility Area \ Year	1986	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
Prim.Schools															
Kanifing		●	120	120	120	120	120	120	120	120	120	120	120	120	120
"Greater Sere Kunda"		●	120	120	240	240	360	360	480	480	480	600	600	720	720
Latri Sabiji/ Faji Kunda			●	120	120	240	240	360	360	360	480	480	600	600	600
Sukuta/Bakoteh	●	120	120	120	240	240	240	360	360	360	480	480	480	600	600
Lamin/ Banjul N'ding			-	.	●	120	120	120	120	240	240	240	360	360	360
Total		120	360	480	720	960	1080	1320	1440	1560	1800	1920	2160	2400	2400
Second.Schools															
"Greater Sere Kunda"								●	162	162	162	324	324	324	324
Latri Sabiji/ Faji Kunda			●	162	162	162	162	162	162	162	162	162	162	162	162
Kotu/Kololi												●	162	162	162
Lamin/ Banjul N'ding					●	162	162	162	162	162	162	162	162	162	162
Sukuta/Bakoteh								●	162	162	162	162	162	162	162
Total				162	162	162	324	324	486	648	648	810	972	972	972
High School															
Kanifing								●	420	420	420	420	420	420	420
Total									420	420	420	420	420	420	420
Grand Total		120	360	642	982	1122	1404	1644	2346	2628	2868	3190	3552	3792	3792
Dispensary															
"Greater Sere Kunda"		●	12	12	12	12	24	24	24	24	24	24	24	24	24
Health Centres															
"Greater Sere Kunda"				●	170	170	170	170	170	170	170	340	340	340	340
Latri Sabiji/ Faji Kunda							●	170	170	170	170	170	170	170	170
Sukuta/Bakoteh												●	170	170	170
Lamin				●	170	170	170	170	170	170	170	170	170	170	170
Total			12	12	182	352	364	534	534	534	534	704	704	874	874
Hospitals															
Latri Sabiji/ Faji Kunda												●	1200	1200	1200
Sukuta								●	1200	1200	1200	1200	1200	1200	1200
Total									1200	1200	1200	1200	2400	2400	2400
Grand Total			12	12	182	352	364	534	1734	1734	1734	1904	3104	3274	3274

● year of completion