HUMAN SETTLEMENTS SECTOR REVIEW
UNION OF MYANMAR

The United Nations Centre for Human Settlements (Habitat)
Nairobi, 1991
This report was prepared on behalf of the Government of the Union of Myanmar by the United Nations Centre for Human Settlements (Habitat). The mission members were Mr. Terry Standley and Mr. David Etherton.

The views expressed in this report are those of the authors and do not necessarily reflect the views of the Government of the Union of Myanmar or of the United Nations Centre for Human Settlements (Habitat).

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CURRENCY EQUIVALENTS

Currency unit = Kyat (K)
April-May 1990:
$US1.00 = K 6.57 (United Nations rate)
= K 6.20 (official exchange rate)
= K 50-60 (black market rate)

WEIGHTS AND MEASURES

1 foot (ft) = 0.305 metre (m)
1 mile (mi) = 1.609 kilometres (km)
1 pound (lb) = 0.45 kilogram (kg)
1 imperial gallon (gall) = 4.546 litres (l)
1 acre = 0.41 hectares (ha)
1 square mile (sq m) = 2.58 hectares
1 pyi = 4.68 pounds

TERMS

Ips = litres per second
Ipcd = litres per capita per day
mgd = million gallons per day
cumd = cubic metres per day
pa = per annum

ABBREVIATIONS

AIDAB = Australian Development Assistance Bureau
AsDB = Asian Development Bank
AFPTC = Agricultural Farm Produce Trade Corporation
AMD = Agricultural Mechanization Department (of MOAF)
BBS = Burma Broadcasting Service
BPC = Burma Ports Corporation
BRC = Burma Railways Corporation
BVWSP = Burma Village Water Supply Project
CC = Construction Corporation
CBD = Central Business District
ESCAP = Economic and Social Commission for Asia and the Pacific
ESD = Environmental Sanitation Division (of MOH)
FERD = Foreign Economic Relations Department (of MOPH)
FYP = Four-year Plan
GAD = General Affairs Department (of MOHRA)
GDP = Gross Domestic Product
GNP = Gross National Product
HD = Housing Development Division (of MOC)
HDP = High-density polythene
HYV = High-yielding varieties (paddy)
ID = Irrigation Department (of MOAF)
IDA = International Development Association
IDWSSD = International Drinking Water Supply and Sanitation Decade
IMP = Immigration and Manpower Department (of MOHRA)
IWTC = Inland Water Transport Corporation
FISCAL YEAR

April 1 - March 31

BURMESE NAMES

All names are given. There are no family names. For males the prefix U corresponds to the formal mister, KO is used between friends, and MAUNG by parents and elders. The female equivalents are DAW for Mrs., Miss. Ms, and MA by friends and elders.
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PART A. SUMMARY AND RECOMMENDATIONS

A.1 Background to the Sector Review

The setting for this Review was a period of extreme political uncertainty in the weeks before the general election in May 1990. Recent shifts towards a liberalization of external trade and the promotion of formal private-sector activities had opened the economy to foreign investments and brought the country out of a period of commercial isolation lasting almost 30 years.

Travel around the country and to sites in Yangon for major housing projects was subject to strict security control and to prior official approval. A nightly curfew was in force. Access to certain high-level officials required several days’ notice and copies of official publications and maps were difficult to obtain through official channels. Following evacuations during the period of civil unrest in 1988, UNDP and most other donors were again fully operational.

Despite the restrictions, the UNCHS (Habitat) Mission was able to visit all parts of Yangon and make field trips to the other important urban centres of Mandalay, Taunggyi and Bago. The Housing Department of the Ministry of Construction acted as the main counterpart agency, and provided a high level of technical and logistic support. The Mission had free access to the Department’s drawings and plans, and data were promptly supplied on request.

The scope of work of the Mission embraced the complete range of conventionally categorized development sectors which interact to determine the social, economic and physical attributes of human settlements. Although a formal definition of the human settlements sector is elusive, the Mission attempted to address all levels from the metropolitan areas of Yangon and Mandalay to rural villages. A search was made of all development co-operation activities and government programmes, in order to identify all projects which directly or indirectly contribute to the sector.

A.2 Structure of the Report

A multi-sectoral initial overview is used to provide a synoptic framework for tracing the range of forces and activities which influence the ways in which the cities, towns and villages grow and change.

The overall development co-operation programme, covering all donors, is then analysed and key projects, whether completed, being implemented, or planned are examined. Projects related to the human settlements sector are sorted first by agency and then by sub-sector in order to establish significant linkages and identify gaps and overlaps.

Next, assessments of the urban and rural sectors are presented, incorporating detailed factual profiles with a diagnosis of problem areas.

Finally, the development needs are identified and translated into a recommended sector programme, with outline descriptions of proposed new projects.

A.3 Sectoral Abstracts

Population

The total population is estimated to be just over 40 million in 1990. For the 1973-1983 intercensal period, the average annual growth rate was 2.02 per cent. The current rate is estimated at around 1.9 per cent. Due to increased emphasis on country-wide access to health care, the crude death
rate dropped from 18.4 per thousand in 1961 to 8.4 by the late 1980s. Over the same period, the crude birth rate fell from 38.5 to 28.6. Life expectancy increased from 44 to 60 years between 1960 and 1987. The 1983 census results showed more females than males, with a sex ratio for the country on a whole of 98.6. Age composition in 1983 reflected considerable changes from the 1973 census with reductions in the overall dependency ratio from 0.9 to 0.82 and from 0.82 to 0.72 in the urban areas.

Average population density increased from 43 per sq km to 52 per sq km between 1973 and 1983, and ranges from Yangon Division at 391 to Shan State at 10. The urbanization rate is comparatively low, with a current average annual rate of growth of around 2.3 per cent.

**The economy**

Agriculture remains the basis of the economy, contributing around 37 per cent of GDP and accounting for 63 per cent of total employment. About 12 per cent of the total land area is farmed and just over half of this is under rice cultivation. The country is rich in forest and marine reserves, and in mineral deposits including oil and natural gas. The population is relatively well educated and the pressure on land is low by Asian standards. Despite these resource advantages, economic development has not matched the potential. The worsening of the economy during the 1980s has resulted in an estimated foreign debt by the end of 1989 of $US 4.9 billion, or around 70 per cent of GNP. Despite the dismantling of the Burmese brand of socialism before the events of September 1988, and the subsequent liberalization of trade, official government figures record a continuing downturn. For 1988/89, GDP registered a growth lower than population increase, with declines in annual per capita consumption of 4.8 per cent and in annual production per worker of 1.2 per cent. Drops in production during 1989 were registered for cement, paper, textiles and fertilizers, while only plywood of the major products, showed a notable increase.

In 1988, GDP per capita was $US282, well below the average for low-income countries of $US310. Absolute poverty leading to food insufficiency is reportedly rare, although the urban population and people in remote areas suffered from severe food shortages during 1988 and 1989.

Those countries which were not involved in the economic boycotts of the post-1988 government have taken advantage of the shift towards a more open economy. Malaysia, the Republic of Korea, Singapore and Thailand amongst others, have signed concessions for timber and fishing rights. The legalisation of the border trade with China has dramatically increased revenues. There are doubts however, about the long term economic and environmental effects of selling off key natural resources without adequate controls, and about the ability to develop the manufacturing sector in the face of the flow of cheap Chinese consumer goods.

The 1989/90 budget and economic plan forecast a trade surplus due mainly to exports of teak and other hardwoods. Early in 1989, the rice market showed signs of recovery following the negative effects of the earlier attempts to regularize trade. Little of the benefit from any up-turn in the economy is likely to find its way into increased social and industrial investment so long as the budget allocations for the armed forces continue to take priority.

The reduction in development co-operation flows since 1982 has been a major element in the continuing balance-of-payment problems. Japan, the
largest consistent donor, increased its aid commitment following a decline between 1980 and 1983, but the Federal Republic of Germany and the United Kingdom made substantial reductions. Aid was suspended after the unrest in 1988. Australia and Japan partially resumed their previous programmes in early 1989. Japan has made it clear that new aid could not be commenced without payment being made on debts amounting to about 24 billion Yen as at March 1990. Emergency relief has been channelled through the United Nations system. United Nations technical assistance projects are operational, following a six-month suspension starting in September 1988.

The political, institutional and legal framework

During the first half of 1990, all executive and legislative powers continued to be held by the military authorities. The supreme governing body, the State Law and Order Restoration Council (SLORC), is composed of 19 members, including seven of the nine Ministers who share 21 portfolios between them. All Ministers, with the exception of the Minister for Health and Education are senior career military officers. Most positions at Director General and Director level are in the hands of civilian public servants or retired officers. Local government is controlled by SLORC military appointees, and divisional-level LORCs serve as decentralized administrative organs and supervise localized development committees.

As of March 1989, over 230 political parties had been registered, in the lead-up to the final date set for elections, 27 May 1990. The elections were held on schedule, with the numbers of parties reduced through deregistration by SLORC and mergers to 93. Final results released in June 1990 showed an overwhelming majority of seats to have been won by the National League for Democracy, the main opposition grouping.

The central- and local-government organizational tiers have remained more or less intact under the present Government, with the obvious exception of the parliamentary level. Between the 14 divisions/states, a set of 50 sub-divisional groupings have been inserted by the military authorities as a level above the 314 townships. Within the townships there are both urban and rural administrative units. Centres with urban status are designated either as towns (119) or municipalities (169). The larger urban centres such as Yangon and Mandalay are themselves made up of townships, with 27 within the Yangon boundary and 4 within Mandalay. The smallest units in urban areas are the wards (2190) and in rural areas the village tracts (13,756). The term "city" is used loosely. Only Yangon has city status conferred by specific legislation.

For the human settlements sector, the key ministries are the Ministry of Construction and the Ministry of Home and Religious Affairs. Within these, the Housing Department (HD), the General Affairs Department (GAD), and the local-level Development Committees for Yangon, Mandalay and other urban centres play key executive roles.

In the post-1988 context of rapid decision-making and short project gestation periods, a flexible ad hoc situation prevails with respect to institutional roles. Several departments, notably HD and the Construction Corporation, now known as Public Works, are undergoing reorganization in response to changing areas of responsibility.

The legislative system inherited from the colonial period is highly comprehensive but complicated by the division of the country into Upper and
Lower areas. This resulted in the introduction of a second, later set of legal provisions covering, *inter alia*, local government, land administration and taxation arrangements, when the British annexed Upper Burma and then immediately following independence.

The precise status of the pre-1988 legislation in relation to the 1974 Constitution and the laws subsequently enacted by SLORC is unclear. However, the major new reform which clearly influences urban management is the City of Yangon Development Law, 1990. The full text of this Law is provided in annex VI.

**Land administration and survey**

Historically, land tenure in rural areas for Lower Burma consisted of a "royal" freehold if cleared and worked for three years. In Upper Burma freehold grants were made. Leasehold tenure was introduced later, with 20- to 30-year lease periods. For the urban areas, following colonization, all land was declared as belonging to the Crown, with the exception of religious holdings and land held by influential Chinese. Those siding with the British were given freehold land. Later, those who distinguished themselves in the First World War were offered district administration posts which included freehold land grants. There were no restrictions on transferring freehold and leasehold land.

The national-level body concerned with land records and assessments is the Settlement and Land Records Departments (SLRD) within the MOAF. Records for Yangon up to the May 1990 transfer to YCDC were administered by HD; otherwise every township local administration unit has an SLRD branch office. In Mandalay, the four townships are administered by a single branch office. Land recording, including cadastral data and land uses, was well-established during the colonial period. According to SLRD, the map coverage extends over all but certain remote areas, where written data, based on field enquiries, are used. Records for the states (Upper Burma) were only introduced following independence.

Land and property markets are particularly active in Mandalay and Taunggyi, following the legalization of border trade. In these centres, the shift during 1990 has been away from purchases towards rentals, accompanied by large payments of key money.

Rural cadastral and land-use mapping is at the scale of 16 inches to one mile (1:3960). The urban cadastral maps managed by HD, up to the May 1990 transfer of Yangon's land-administration responsibilities to YCDC, date from 1895. Within the City boundary there are 300,000 registered landholdings. Annual land transactions number around 3000. Within HD, there are 38 surveyors and 12 land inspectors. All registration and transfers are recorded manually both in HD and SLRD. The land-record plot-identification system does not match that used for YCDC property taxation and for electricity and water supply.

There is national coverage of topographical mapping at the scale of one inch to one mile (1:63,360) based on the British Ordnance Survey level of detail and cartographic conventions. Contours are at 10 foot intervals. Latest revisions were made between 1940 and 1960. Aerial photography for the whole country was carried out in 1969 at 1:25,000 scale.
Transport and communications

The new policy of a shift towards a more market-oriented economy has emphasized a need for improved physical infrastructure including air, water, rail and road transport, together with modernized telecommunications. The Government allocates high priority to the replacement of equipment and the expansion of systems to deal with growing volumes of both internal and external trade. The private sector dominates internal freight transport.

Private road transporters have around eight times the number of trucks registered as the public sector, and five times the number of buses. This private-sector dominance is further augmented by around 26,000 pick-ups used as minibuses. Highway networks are being upgraded, following 40 years of neglect, and new routes are under construction.

The number of telephones in Myanmar has doubled since 1974. There are now 65,419 telephones - 1 per 590 people. This is one of the lowest levels in the world and the lowest in Asia. In addition there are 1115 post offices, 310 telegraph offices, 138 telex offices and 22 facsimile machines. Although there were telephones in the country in 1884, modernization of the system began only in 1974 with assistance from the World Bank. An earth satellite station, supplied from Japan, was commissioned in 1979 with a capacity of 60 circuits, together with an international electronic telephone exchange.

Energy

The country’s energy resource-base includes natural gas, petroleum, hydropower, biomass and coal. Reserves are more than adequate but production problems have led to extreme shortages. Myanmar is one of the lowest commercial energy consumers amongst the less developed countries (LDCs) (73 kg-oil-equivalent compared with an average among other LDCs of 116 kg-oil-equivalent - excluding China and India). The country now faces an immediate energy-supply crisis caused by declining supplies of oil, gas and electricity.

Construction

The move towards a market economy is likely to reduce significantly the share of the public sector in construction, which was 84 per cent in 1989/90 compared with 15 per cent for the private sector and 1 per cent for cooperatives. The promotion of private companies and the removal of the monopoly on public sector projects from the Construction Corporation (now renamed Public Works) provide opportunities for a more competitive and efficient industry. Apart from technical skills in high-rise design and construction, the available expertise in trades and professions is reportedly adequate. There are gaps, however, in organizational and financial experience in setting up and running large-scale private construction enterprises.

The most serious problems facing the industry are related to the supply and costs of materials, particularly cement and reinforcing steel. There are wide differentials between official prices for all materials and those paid in the parallel market. Rapid inflation in both materials and labour costs has resulted from the accelerated public works programmes launched by the present Government, and, particularly, from the resettlement schemes being implemented in all major urban centres.
Water-Supply and Sanitation

In the past decade there has been an emphasis on rural water supply and sanitation. Water-supply coverage is officially stated to have increased from 13 per cent to 27 per cent and sanitation from 5 per cent to 25 per cent. In urban areas there have been specific projects and studies, but overall improvements, particularly in low-income urban areas, have been slight.

Piped water-supply systems serve parts of 64 of Myanmar’s two cities and 288 towns. Many of these installation are 40 to 70 years old with intermittent and poor-quality water. Plans for improvements have been prepared for 23 towns and the former Government was seeking assistance to add 17 towns to the programme.

Outside Yangon’s CBD, there are no conventional piped sewerage systems in Myanmar. In the cities and towns, septic tanks and pit-latrines are used by those who can afford to build them. Bucket latrines were formally discontinued around 1982 and the city authorities no longer collect night soil. In almost all densely-built areas seepage from septic tanks and pits finds its way into open rainwater drains or natural waterways which are regularly blocked or flooded. The health hazards of poor sanitation and drainage are perceived by local professional people and in all reports on the subject as the most urgent problem to be tackled in human settlements.

Water resources, flood control, environment

Myanmar’s four major river systems – Ayeyarwady, Chindwin, Sittan and Salween have a catchment area amounting to 90 per cent of the land area. Peak flows coincide with the June-October rainfall period. Although water resources are abundant, the lack of investment and skilled technicians has resulted in only 20 per cent of the 13 million acres of irrigable land being developed. The groundwater resources of the country are relatively unexplored and the depth of aquifers varies between 2 - 3000 metres, and 80-200 metres (1986/87).

There has previously been a tendency to select the cheapest chemicals for pesticides in order to save foreign exchange. Some of these are banned in other countries. The risks to people, animals, soils and water sources are high. In May 1990, new legislation was introduced to control the type and use of pesticides. Some reports suggest that farming methods in the Ayeyarwady delta and in the lowlands are depleting the soil of micro-nutrients and that salinity is increasing. As the crop yields decrease, farmers tend to increase the use of chemical fertilizers.

Myanmar’s forests occupy 46 percent of the total land area and the export of hardwood overtook rice as the highest foreign-exchange earner in the mid-1980s. It is known that teak is among the products illegally smuggled out of the country and extensive logging concessions have been formally purchased over the last two years by business interests based in Thailand. The extent and effect of uncontrolled forestry activity is not known, but the environmental risks of forest depletion and fires, landslides, and soil erosion are high in Myanmar.

Education, health, welfare

The literacy level of the population over 5 years of age was 79 per cent according to the 1983 census. All schools are State schools, starting at age 5 and ending at age 16, comprising primary (five years), middle (four years),
and high schools. In 1987/88 only 7 per cent, 9 per cent and 12 per cent of enrolled children passed their final year of primary, middle and high school, respectively. The findings of an investigation showed the major causes for primary school drop-out are economic, 43 per cent and needing to assist with household work, 20 per cent. In higher education, pass rates were higher but at universities and colleges in 1987/88 they were again low: medicine 14 per cent, technical institute 15 per cent, foreign language institute 9 per cent.

Deaths by major causes for 1984, the last year for which records are available, were reported as being dominated by viral, parasitic/protozoal and other infections, pneumonia/upper respiratory tract problems, and cholera and other diarrhoeal diseases. UNICEF has reported infant mortality and child mortality rates for 1987 as 44.3 per thousand live births and 98 per thousand live births respectively. Daily per capita calorie intake for 1986 was 89 percent of requirements. For 1988, the immunisation performance (one year olds) was reported as 44 per cent for BCG and 34 per cent for DPT.

There are more doctors in the country (2.9 per 10,000 population) than there are nurses or midwives. The number of doctors increased by 16 per cent, nurses by 12 per cent, and midwives by only 4.5 per cent between 1984 and 1986. By contrast, the number of community health workers and auxiliary midwives increased by 92 per cent and 61 per cent respectively during the same period.

The Social Welfare Department of the Ministry of Social Welfare has 14 area offices in the states and divisions. The public sector is responsible for separate special schools including 33 day-care centres and 20 pre-primary schools. The budget of the Department is only K18 million and there is a shortage of staff at all levels.

There are 1360 national non-governmental organisations (NGOs) involved in health and welfare programmes. These include schools for the disadvantaged, voluntary day-care centres, leprosy centres, and separate religious organizations. UNICEF has helped to introduce health and nutrition education to the parents of children under 3 years of age.

Following the civil unrest in 1988, a number of emergency relief programmes were carried out through a local NGO. These included food assistance mainly for the Chin Hills population, and the distribution of medical supplies provided by the Federal Republic of Germany, AIDAB and UNICEF. From November 1988 to February 1989 over 100 metric tons (valued at $US1.3 million) were distributed to reach all basic health centres in the 314 townships of the country.

A.4 Development co-operation

The total value of development co-operation rose to $us44,226,000 in 1988, following a marked decline from about $US82 million in 1982, down to about $US39 million in 1987. Health, and agriculture, forestry and fisheries consistently account for the highest shares, followed by industry, and transport and communications. Human settlements, which is difficult to classify using conventional sector categories, is at the lower end of the range.

Adopting abroad definition for the human settlements sector, an inventory of 68 projects was identified, covering both technical and capital assistance. The selection includes on-going and planned projects as of 1988 plus those which were in the process of being formulated and/or revised during 1989 and early 1990.
The overall United Nations system delivery in 1988 was $US26.2 million, of which UNDP accounted for $US11.3 million, with $US14.9 million remaining. Of the other agencies, major disbursements were by UNICEF with $US5.6 million, UNCDF, $US2.3 million, and WHO, $US2.8 million.

The UNDP Fifth-country Programme, 1987 to 1991, allocated total resources of $US65,514,000. At the Burma Aid Group meeting in 1986, the Government presented a list of priorities. Strong preference was expressed for technical assistance in the following four areas:

- Development of an indigenous research capacity in the key sectors of the economy;
- Identification of investment opportunities and preparation of feasibility studies;
- Equipment and expertise in selected fields of advanced technology;
- Training, specifically in-country programmes.

The UNDP mid-term review in 1989 took account of the effects of the 1988 civil unrest, of the move from a centrally-planned economic-management system towards a market-oriented economy, of the exercise undertaken with support from the United Nations system to identify the new assistance needs in facilitating the economic transition, and the designation of Myanmar as a least developed country. In response to the changing situation, technical assistance was seen to be needed in improvements to:

- Resource-use evaluation
- Resource-use planning and management
- Resource-use efficiency

The review noted that government strategies had not yet been articulated to the point where generalized policies could be translated into specific programmes. With this in mind, it was decided that the major reassessment of UNDP assistance for undertaking the transformation should be addressed in the next country programme starting in 1992.

Out of the 24 UNDP human settlements-related projects identified by the Mission, four are considered as key contributors to the sector. These are:

- BUR/85/016: Yangon City and Regional Development, phase II
- MYA/86/012: Programme of pre-investment and investment assistance, phase IV (Umbrella)
- MYA/88/045: Institutional strengthening of infrastructure Agencies
- MYA/88/047: Umbrella support for UNCDF investment programme

Within the United Nations system, the UNICEF programme is next in importance to UNDP in terms of disbursement levels. The period during which operations were suspended provided an opportunity to refocus programmes. One example is the integration of water supply, latrine construction, and health education pilot programmes in three townships. Following the successful logistic operations in the distribution of emergency medical supplies in 1988, special efforts were made to clear stockpiles. Food-assistance activities in 1988 covered 93,000 families, and remaining funds were subsequently used in child-feeding programmes in Yangon. These programmes were linked to child weighing and health education activities. The main UNICEF areas of sustained support are in: health and nutrition, water supply and sanitation, education, women in development, and surveys and evaluations.
As a result of the decision by the United Nations General Assembly to designate Myanmar as a least developed country, the country became eligible for UNCDF capital assistance. Missions in 1988 and 1989, identified in consultation with the Government, a programme expected to amount to around $US 25 million. Human settlements-related capital assistance within this programme is provided to urban housing and water supply, together with four projects supporting rural resettlement arising from Government's requests for border development assistance.

The other main multilateral agencies contributing to Myanmar's development co-operation programmes are the World Bank and the AsDB, with disbursements in 1988 of $US 56.6 million and $US 33.3 million respectively. Total World Bank-committed capital assistance is $US 394,465,000 concentrated in natural resources, industry, and transport and communications. AsDB has $US 293,639,000 committed in the same sectors, with the addition of Health. The key contribution to the human settlements sector is the infrastructure rehabilitation project, negotiated in 1988, with an IDA credit of $US 45 million. The approved 1990-1994 country programme includes a Phase II of Infrastructure Rehabilitation for 1994, with a provisional loan amount of $US 160 million. Under "other ideas", municipal infrastructure and housing are indicated for 1993 and 1994 respectively.

Bilateral items in the inventory of human settlements-related projects drawn up by the Mission are dominated, in terms of cost, by the AIDAB rural water project, the Japanese seven-towns water project and the Finnish wood-industry project.

The urban sector

The urban sector is characterized by slow population growth in relation to the national rate, by a high share of the overall population for a rural-based society, by the dominance of Yangon, and the concentration of the urban population in low-lying divisions as opposed to the mountainous states forming the border zones. A further feature, identified in discussions and not documented, is the close interdependences of towns and their hinterlands, and a resultant less marked urban/rural dichotomy than is emerging in other Asian countries.

The current estimate for annual urban growth is about 2.3 per cent compared with 1.9 per cent national growth. United Nations projection for the average low-income centrally planned economies, with the exception of China, for 1980-1990, is 4.7 per cent. The 1980 figure for the average share of urban populations for the same group of countries is 17.3 per cent, compared to Myanmar's 24 percent at the time of the 1983 Census. Yangon accounts for 30 percent of the urban population, followed by Mandalay with 6.3 per cent. The Divisions cover 40 per cent of the total land area, 69 per cent of the total population and 76 per cent of the urban population.

With the exception of externally funded projects, towns and municipalities have, until recently, financed recurrent and capital expenditures from their own revenues. Central government transfers, as grants, commenced in the current (1990/91) financial year. GAD, which, with the exception of Yangon, has the responsibility for supervising local administrations and reviewing budgets, has given an indicative figure of K350 million (excluding Yangon) for the present annual revenue of all townships, covering both the urban and rural components. Annual urban-sector budget totals are not readily available, although GAD maintains that by far the majority of the quoted figure is urban-based. A recent amendment to the Municipal Act provides for increased taxation levels, specifically for the vehicle tax. The effect of this
has been to increase the provisional total revenue estimate for 1991/92 to K 500 million. The largest single source of revenues is that covering fees, rentals and other charges from markets and slaughterhouses.

As an approximate guide to urban budget levels, inclusive of Yangon, the official government report for 1989/90 records allocations for current expenditure by the Town and City Development Committees as K298 million for current and K201 million for capital expenditure. It should be noted, however, that, under the current Government, programming and budgeting has been affected by short-term measures which are not necessarily predicted in annual financial planning or reported in accordance with the standard sector allocations.

According to the reports of the UNDP/UNCHS (Habitat) project BUR/80/005, the situation in 1984 could be described as one in which an urban housing policy did not exist. As a result of negative experiences with costly and highly subsidized programmes producing low outputs, the Government had ceased to consider the provision of housing as a priority issue. This was however in the context of a gradual but sustained build-up of squatters in Yangon and other cities at a scale matching that prevailing in 1958.

The UNCHS (Habitat) project team working within HD estimated the backlog in the need for new and improved units in the capital to be in the order of 100,000, increasing by about 5000 a year.

The response to the conditions, as implemented by the current Government during 1989/90, is described in the following section.

During the early months of 1990 international attention was focused on the Yangon squatter clearance and resettlement programme launched by the Government in 1989. The Mission found that the programme is not limited to Yangon, but has broad national coverage. The scale and characteristics of the land-development and other works was considered by the Mission to be of such overwhelming significance to the present and future urban situation that the Mission concentrated its resources on attempting to assemble a comprehensive record of the programme and assessing the impacts and implications.

The programme consists of: (a) land development for sites-and-services resettlement schemes, and for complete housing units for public servants; (b) new and improved roads; (c) urban rail transport; (d) road, rail and pedestrian bridges; (e) parks and gardens; (f) redevelopment for commercial and residential uses of sites cleared as a result of resettlement and fires; (g) clean-up campaigns, building renovations, and repainting of facades; and (h) rehabilitation of drains and water bodies.

For the size of the overall country population and for an urban population of less than 10 million, the scale of works within the time period allocated is probably unprecedented internationally. Based on visits to selected towns, analysis of maps and layout plans, and the data supplied by GAD and HD, the Mission estimates that the total population affected by the resettlement and new housing components is in the order of 1.5 million, or 4 per cent of the total population, and 16 percent of the urban population. Roughly 50 per cent of this number is in Yangon, Mandalay, Taunggyi and Bago, all centres visited by the Mission.
Adopting gross average densities of around 7.5 plots or 45 persons per acre based on plans inspected by the Mission, the total land area involved is in the order of 34,000 acres (13,700 ha) or 53 square miles (137 sq km).

The scope of the other components is difficult to quantify. However in Yangon alone, the value of new roadworks is K250 million. In Mandalay a 35-mile urban light rail system has been installed. The entire Central Business District (CBD) of Yangon covering an area of 2.64 square miles had all facades repainted on the instructions of the military authorities, and 300 buildings renovated.

The total land-development estimates do not include projects commenced between 1985 and 1988 for fire victims, public servants programmes and resettled squatters - 13,000 plots in Yangon, 5000 in Mandalay. If these are included, the population affected in the five-year period commencing 1985 increases by at least a further 75,000.

The post-1988 programme is by no means an innovation for the people of Yangon. It differs only in degree from earlier population redistribution measures. It replicates in motivation, implementation speed, management style, political climate, and development standards, the 1958-1960 squatter clearance and resettlement. Three new townships were then developed on what was at that time the periphery of the city. A total of 60,000 plots were provided in Thakita, and North and South Okkalapa. Although these areas still suffer from inadequate services, especially drainage and sanitation, they have merged into the socio-economic fabric of the city. What makes the current programme particularly significant is its increased scale, its national coverage and the incorporation of extensive schemes for public servants. It is also understandably a much more emotionally charged phenomenon, coming as a government reaction to the September 1988 events and in the context of the controversial lead-up to the elections in May 1990.

In addition to the socio-economic disruption and hardship caused by forced relocation with very little notice, and the inflationary effects of the crash programme, there are critical defects which will result in severe deterioration in the physical environment and in the quality of life generally. The locations selected in Yangon are low-lying and adjacent to major water courses. They are on poorly drained soils and subject to seasonal flooding combined with tidal flows. Only the road surfaces are above flood levels. Floor levels of many dwellings and latrine slabs are such that water will enter buildings and latrines will overflow. The drainage systems are not incorporated with flood protection and control. The impact of the sudden expansion of urban management responsibilities and the public-health implications resulting from the rapid development of new and expanded townships, with a total target population in Yangon alone of around 500,000, still requires to be examined by the authorities.

Setting aside these significant negative aspects, the Mission sees the overall programme as a potentially promising (if currently fragile) national asset. Sensitively handled by a government which recognizes the role of community participation and acknowledges the urgency of remedial priority actions and the importance of self-sustaining operations and maintenance systems, the new townships could develop into balanced and well-managed communities. The major obstacle to implementing policies for mass home-ownership in most developing countries has already been bypassed: the nationalization of rural land under previous Governments allowed acquisition of urban peripheral areas quickly and at little financial cost. The
ability of residents to construct their own dwellings without imposed design standards is recognized.

The share of rural population has remained at 70 to 75 per cent since 1973. The 1988 projections from the 1983 census show a total rural population of 29.8 million people. The combined rural populations of Ayeyarwaddy and Yangon divisions accounted for 21 per cent of the total rural population in 1983.

Of the total cultivated land (14.8 per cent of land area), 2.8 per cent is normally fallow. Unused cultivable waste land accounts for 12.6 per cent and 46 per cent of the land area is forest. Forest reserves occupy only a third of the forested area.

Although land reclamation has been attempted, the most recent government policies have emphasised intensification of the areas already under cultivation by double-cropping, the introduction of high-yielding varieties of rice and by increased use of fertilizer.

Under the socialist system which gave the right of tilling to the tillers, the number of large farms decreased so that 61 per cent of all farmers work on holdings of less that five acres. These small holdings account for one quarter of the land under cultivation. Holdings between 20 and 100 acres are farmed by only 2.5 per cent of farmers, and this land represents 14 per cent of the total.

Farmers have been granted usufruct rights on the land they work. These cannot exceed 50 acres per family and rights cannot be transferred. Children who worked the land with their parents had the legal right to continue farming it after the death of their parents. Absentee ownership was illegal and if land was abandoned, the village land committees could transfer it to a landless family.

Since 1988, a revision of landownership rights has been under consideration, but a new law had already been enacted to enable farmers to sell their produce on the open market in 1987. Although the present Government has not made rural land reform an issue in the moves towards the liberalization of the economy, several of the new political parties have declared their intention to introduce measures to grant formal title to those that work the land.

The economics of rice cultivation affect the distribution of population and settlement patterns in the most densely occupied zones.

The population of villages in Myanmar is typically around 300-400 with interdependencies with small towns of 5000-40,000. Studies of regional characteristics in settlement patterns and housing types were not identified by the Mission. The main sources of research work, the relevant university departments, were not available due to the continuing closure of tertiary education institutions. The Urban and Regional Planning Division of the Housing Department has concentrated on the urban sector and rural interventions are usually made on an isolated sectoral basis by many different government and international agencies.

There is a noticeable absence of the type of high-level regional planning co-ordination which would direct the work of the line ministries and foreign donors who are committed to assistance in rural programmes. The concept A.7 Rural land and settlements
of integrated rural development based on settlement characteristics and on the varied needs of communities in different ecological zones is one which could be applied to good effect in Myanmar.

The wood and bamboo, thatched-roofed house built on stilts is the most popular and cheapest house for rural households, and for many town dwellers also. The materials can be harvested at no monetary cost if they are to hand and there is a tradition for communal housebuilding in villages. If no repairs were made, a typical bamboo house would last three to five years. On one hand they are cheap and well ventilated, on the other they are neither waterproof nor fireproof. In Taunggyi the price of a bamboo house from a builder was quoted at K8000. The price in the village would be much less.

The SLORC has given priority to a planned programme of Border Area Development and has requested key United Nations agencies to participate. UNDP, WHO, FAO, UNICEF, UNCDF and UNFDAC have all been approached. This is a parallel rural equivalent of the urban resettlement programmes. Donor agencies have been cautious in making commitments to Border Area Development, but regular meetings are held to monitor the situation. The outcome of the elections will determine any future action. In the sense that many of these remote areas have very low levels of basic services and have previously been denied access for donor activities, there may be opportunities for extensive development assistance.

The component in the Yangon resettlement programme which has been most controversial is that concerned with relocation of certain urban communities to sites as much as 50 miles from the city. It is understood that these groups could not afford to make the downpayments on the plots in the new peripheral township areas, or for political reasons were moved to rural areas where activities could be better controlled by the authorities. Approximate estimates put the total population affected at around 40,000. This programme, taking account of all sources of information, has been hastily conceived, poorly serviced and is causing major socio-economic hardships to the communities concerned, including exposure to severe health hazards.

A.8 Needs assessment

The current needs of the human settlements sector in Myanmar, in common with all aspects of development, are being generated by three converging factors:

(a) The inherited problems and opportunities building up over 26 years of political and economic isolation, involving the neglect and misuse of natural and human resources, the dampening of public-service initiatives and technical interchange, the lack of recognition by minority groups of the legitimacy of successive regimes, the evolution of a parallel informal alternative economy, the recent opening up of the official economy and promotion of a formal private sector, drastic policy swings without sustained follow-up of the resultant development initiatives, preservation of traditional close urban-rural interdependencies, slow urban growth rates, and relatively low-density uncongested urban areas;

(b) The socio-economic and physical impact of the 1988 trauma experienced throughout all settlements, and specifically the disruption of life in the major urban centres resulting from the implementation and after-effects of the 1989/90 public works and resettlement programme;
(c) The outcome of the 1990 general elections, leading to the timing and form of the transfer of powers to a multi-party Parliament, the effects on public-administration systems and, specifically, urban and rural local government, the resultant responses of donors and the interest of the new or adjusted government in continuing, diversifying and expanding development assistance.

Rather than attempt to formulate alternative scenarios and predict the needs of a future government, the Mission has concentrated on the more easily isolated remedial and promotional opportunities presented by the post-1988 settlements-related activities and the similar mass-relocation programmes undertaken in Yangon in the late 1950s. Attention is, however, given to the needs generated by the economic reforms already introduced prior to September 1988, particularly with respect to an expanded private sector within a more open economic climate.

A summary of needs under the broad levels to which they respond is as follows:

(a) **National:**

(i) Improved population and household data collection and analysis, including household-income and -expenditure surveys, geographically specific and incorporating the effects of the post-1988 population redistribution programmes for the complete set of urban centres affected;

(ii) National budgetary data reflecting the outlays from all concerned agencies, for the post-1988 public works programme;

(iii) Training in household-survey techniques and processing as a complementary component to conventional census activities;

(iv) A capability for formulating a national housing policy in support of an integrated planning perspective for urban development;

(v) A capability linked to (iv) for incorporating a spatial dimension into socio-economic planning based on regional plans which should take account of a likely future semi-autonomous federal arrangement for groupings of states and divisions;

(vi) The introduction of area-development programmes which, although having an agricultural or forestry base, seek to exploit the trade-offs with other sectors and to promote the consolidation of settlements as service centres;

(vii) The development of financial institutions, particularly savings and loan arrangements for both urban and rural housing, linked to initiatives in community development and co-operatives but involving national-level regulatory and initial-funding mechanisms;

(viii) Support for the necessary adjustments in the currently immature small-scale construction industry to assist in responding to the needs of a more open, competitive market;

(ix) Improvements in the local government financing systems, clarifying and codifying the arrangements for central-government transfers, and examining performance-related mechanisms for determining levels of grants, and investigating opportunities for a financial intermediary for municipal funding;
(b) Rural:

(i) Additional emphasis on rural living conditions, through the allocation of housing as an integrated development topic, to a specific department in order to provide both a development and a co-ordinating function (following the reduction in the scope of the work of the Housing Department and within its new mandate as the Department of Human Settlements and Housing, this additional role could be incorporated);

(ii) The improved capability to exploit the mutually-supportive components in rural area development programmes, with particular attention to the relationships between changes in farming and forestry patterns, rural settlement planning and house-construction technologies;

(iii) Advance planning to deal with probable rural land reforms, addressing assessments for purposes of taxation and acquisition, price regulation and improved record systems taking account of the issuing of titles and likely increase in transactions (an associated review of the legislation dealing with the thresholds for municipal status as it affects small rural centres would also be appropriate);

(iv) A sensitively planned comprehensive programme to introduce progressively basic-needs provisions to previously underserviced remote border areas, respecting ethnic backgrounds, and housing and settlement patterns and with an environmentally-sustainable development approach (meeting this need presumes a cessation of the military activities in these areas together with a political settlement following the installation of a new government under a mutually-acceptable constitution);

(v) An independent assessment of the conditions in the rural resettlement schemes accommodating communities relocated from Yangon, with a view to supporting physical, social and economic improvements, and providing options for moving back to Yangon and occupying plots in the urban resettlement areas;

(c) Metropolitan regions:

(i) Reformulation of the approved, but not effectively commenced UNDP/UNCHS (Habitat) Yangon project to take account of the recent developmental and institutional changes;

(ii) Development plans and investment programme for both Yangon and Mandalay which address metropolitan regional catchments, and overall city management, including resource mobilization, urban operations generally, human-resource development, and feasibility studies aimed at attracting external capital investments;

(iii) Priority interventions to gain across-the-board incremental improvements in water supply, sanitation and drainage, targeted at the urban resettlement zones, and linked to the proposed UNCDF assistance and the World Bank-executed UNDP project study components and IDA credit, and involving intensive health education and community participation;

(iv) Support for small-scale industries in the Yangon and Mandalay post-1988 resettlement areas, exploiting the mass-market cut-off from easy cheap access to previous commercial and manufacturing sections of the cities, and harnessing the demand for water supply...
and sanitation materials and components, and assistance in
dwelling construction and improvements;

(v) Incremental installation of computerized land-information
systems and financial-management techniques, accompanied by
the associated training, and covering valuations, accounting, and
operations/maintenance technology and administration;

(d) Secondary towns:

(i) A comprehensive review of the legal and institutional provisions
of the Municipal and Towns Acts leading to possible consolidation
with a single status for all municipalities below that of city level;

(ii) An assessment of the physical infrastructure and institutional
capacity in all municipalities and towns, taking account of the
post-1988 public works programmes, in order to prioritize needs
and better co-ordinate the donor-assisted projects (particular
attention needs to be given to the scheduling of water supply,
sanitation and drainage improvements);

(iii) Support for integrated development planning and investment
programming, concentrating on physical improvements matched
with assistance in institutional strengthening, and covering project
preparation, enhanced resource mobilization, and more effective
programming and budgeting.

A.9 Recommended Programme

Under the current atmosphere of uncertainty with respect to the form and
timing of a new elected government, it is difficult to determine the share of
the recommended programme that could be sustained without capital and
technical assistance inputs. The Mission considers that there is the
institutional capacity within HD, YCDC and MCDC, and GAD to absorb an
expanded programme. GAD has stated that the problem has been obtaining
approval for increased establishments, rather than finding qualified technical
and administrative staff to fill the posts. However, with the continued closure
of all tertiary education institutions and the break-up of the student
population, any examination of increased outputs, training potential and
introduction of new in-country courses was severely constrained.

A further factor in assessing absorptive capacity is the historical role of
the public service since independence. Below the top- level core of
decision-makers, all initiative among technical and administrative cadres has
been stifled to the point where there is little or no upward movement of
proposals for technical, procedural, or policy reforms. A more open
management system would unleash an as yet undetermined degree of
dialogue and innovation, commensurate with the generally high level of
education, experience and expertise currently locked up within the public
service. A new government is also likely to attract back to Myanmar many
highly skilled nationals lost in brain-drains during the periodic relaxations of
exit restrictions. These professionals would make a significant impact on the
capacity of top management in both public and private sectors and in various
fields of education and training.

Taking account of these circumstances, the Mission has formulated a
preliminary programme which is limited to technical co-operation projects,
within which national personnel would, in many cases, play dominant roles.
Specific programme components which would be appropriate for
implementation without external support are not identified, nor is any attempt
made to identify capital assistance needs other than confirming the
importance of maintaining the currently programmed World Bank and UNCDF project contributions.

The key items of the recommended programme are:

(a) Support for the human settlements programme monitoring and co-ordination cell (new project);
(b) Rangoon metropolitan region integrated development project (reformulation of BUR/85/016);
(c) Mandalay metropolitan region integrated development project (new project);
(d) Secondary towns integrated development project (new project);
(e) National construction industry adjustment project (new project);
(f) National housing finance project (new project);
(g) Relevant Components of Programme for Pre-Investment and Investment Assistance, Phase IV (Myanmar Umbrella IV), (MYA/86/012):
   - Water and sanitation sector review (whole country)
   - Yangon Traffic Engineering Study
(h) Relevant Components of Institutional Strengthening of Infrastructure Agencies, MYA/88/045:
   - YCDC "unaccounted for" water management;
   - YCDC overseas training for cost accountants;
   - YCDC/GAD training for workshop staff;
   - YCDC/GAD overseas study visits for water supply and sanitation technology;
   - GAD project monitoring and data management
(i) Relevant Components of Umbrella Support Services for UNCDF Programme, (MYA/88/047):
   - Sites-and-services for low-cost housing (project formulation for provisional allocation of $US 2 million in MYA/88/C08)
(j) Relevant Components of Infrastructure Rehabilitation Project (IDA Credit. World Bank 7282-BA):
   - YCDC infrastructure rehabilitation
   - GAD other towns rehabilitation
(k) Support for Ministry of Planning and Finance (new project);
(l) Support for rural settlements planning and development, and regional planning (new project).
PART B. NATIONAL OVERVIEW

B.1 Introduction

The human settlements sector, by definition, embraces the more conventionally categorized socio-economic development sectors. This overview at the national level provides a synoptic framework for tracing the range of forces and activities which influence the ways in which cities, towns and villages grow and change. Shelter, as a specific multi-sectoral topic, is addressed later in parts D and E.

The broad geographic zones and land uses are also referred to briefly in part E. The Mission was not, however, able to identify material which provides guidance on trends in natural-resource extraction, water management and farming methods, and the resultant effects on natural and human ecosystems, including population distribution and settlement patterns.

At the end of each section, an attempt has been made to draw out some of the implications for human settlements in the particular context of the current situation in Myanmar.

B.2 Population

The UNFPA interpretation of government population policy is that birth-rate control is not seen as a problem and that the primary aim is to equip and mobilize the people for economic growth. The emphasis is on ensuring the development of a country of healthy individuals. Access to modern methods of contraception is limited, and family planning is not recognized as valid on maternal and child health grounds. However, mortality levels are considered by the Government as unacceptably high, and the spatial distribution of the population is an issue the Government is addressing in relation to more efficient agricultural production and the resettlement of inner-city communities to peri-urban satellite townships.

The total population is estimated to be just over 40 million in 1990. For the 1973-1983 intercensal period, the average annual growth rate was 2.02 per cent. The current rate is estimated at around 1.9 per cent. Due to increased emphasis on country-wide access to health care, the crude death rate dropped from 18.4 per thousand in 1961 to 8.4 by the late 1980s. Over the same period the crude birth rate fell from 38.5 to 28.6. Life-expectancy increased from 44 to 60 years between 1960 and 1987. The 1983 census results showed more females than males, with a sex ratio for the country of a whole of 98.6. Age composition in 1983 reflected considerable changes from the 1973 census as shown in table B.2.1.

Table B.2.1 Age Composition-1973 and 1983
(Percentage)

<table>
<thead>
<tr>
<th></th>
<th>Union</th>
<th>Urban</th>
<th>Rural</th>
<th>Union</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 15</td>
<td>41.5</td>
<td>40.8</td>
<td>41.7</td>
<td>38.6</td>
<td>35.7</td>
<td>39.5</td>
</tr>
<tr>
<td>15-59</td>
<td>52.5</td>
<td>53.7</td>
<td>52.1</td>
<td>55.0</td>
<td>58.1</td>
<td>54.1</td>
</tr>
<tr>
<td>60 and over</td>
<td>6.0</td>
<td>5.5</td>
<td>6.2</td>
<td>6.4</td>
<td>6.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>(0.9)</td>
<td>(0.92)</td>
<td>(0.92)</td>
<td>(0.82)</td>
<td>(0.72)</td>
<td>(0.85)</td>
</tr>
</tbody>
</table>

Source: 1983 Census Report

The total fertility rates from the 1983 census were 4.73 for the whole country, with 3.41 for urban, and 5.2 for rural.
Average household size in 1983 was 5.2, a slight increase from 5.0 in 1973. Results for marital status showed a trend towards higher ages at marriage.

Some 69 percent of the 1983 population were ethnic Burmese, with the largest minority, the Shan, accounting for 8.5 per cent and the next largest, the Karen, 6.2 per cent. Buddhists with 84 per cent are the largest religious group, followed by 4.9 per cent Christians and 3.9 per cent who are Muslims.

The average population density increased from 43 to 52 per sq km between 1973 and 1983, and ranges from Yangon Division at 391 to Shan State at 10. The urbanization rate is comparatively low, with a current average annual rate of growth of around 2.3 per cent.

Table B.2.2 shows the 1983 population and land areas by state or division, and combines this data with the distribution of local government units, composed of mixed urban/rural townships, the urban areas (towns and municipalities), together with the lowest administrative levels, the urban wards and rural village tracts. Table B.2.3 presents projections from 1983 to 1988 as prepared by the Government's Census Division.

### Table B.2.2 1983 census results

<table>
<thead>
<tr>
<th>State/division</th>
<th>Population (thousand)</th>
<th>Percent (thousand)</th>
<th>Area per km²</th>
<th>Population density (thousand)</th>
<th>Percent urban areas</th>
<th>Township administrative (number)</th>
<th>Towns/Municipalities (number)</th>
<th>Urban wards (number)</th>
<th>Rural village tracts (number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kachin</td>
<td>904</td>
<td>2.56</td>
<td>2.05</td>
<td>89,042</td>
<td>10</td>
<td>20.13</td>
<td>18</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>Kayah</td>
<td>168</td>
<td>0.48</td>
<td>2.69</td>
<td>11,730</td>
<td>14</td>
<td>24.67</td>
<td>6</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Karen</td>
<td>1,058</td>
<td>3.00</td>
<td>2.11</td>
<td>30,381</td>
<td>35</td>
<td>10.44</td>
<td>7</td>
<td>7</td>
<td>33</td>
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<tr>
<td>Chin</td>
<td>369</td>
<td>1.04</td>
<td>1.33</td>
<td>36,017</td>
<td>10</td>
<td>14.72</td>
<td>9</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Sagaing</td>
<td>3,856</td>
<td>10.92</td>
<td>2.14</td>
<td>94,623</td>
<td>41</td>
<td>13.72</td>
<td>38</td>
<td>38</td>
<td>165</td>
</tr>
<tr>
<td>Tenasserim</td>
<td>918</td>
<td>2.60</td>
<td>2.46</td>
<td>43,344</td>
<td>21</td>
<td>24.12</td>
<td>10</td>
<td>9</td>
<td>54</td>
</tr>
<tr>
<td>Pegu</td>
<td>3,800</td>
<td>10.76</td>
<td>1.80</td>
<td>39,404</td>
<td>96</td>
<td>19.46</td>
<td>28</td>
<td>32</td>
<td>233</td>
</tr>
<tr>
<td>Magwe</td>
<td>3,241</td>
<td>9.18</td>
<td>2.09</td>
<td>44,820</td>
<td>72</td>
<td>15.22</td>
<td>25</td>
<td>26</td>
<td>153</td>
</tr>
<tr>
<td>Mandalay</td>
<td>4,581</td>
<td>12.97</td>
<td>2.25</td>
<td>37,021</td>
<td>124</td>
<td>26.49</td>
<td>29</td>
<td>28</td>
<td>216</td>
</tr>
<tr>
<td>Mon</td>
<td>1,682</td>
<td>4.76</td>
<td>2.50</td>
<td>12,265</td>
<td>137</td>
<td>28.15</td>
<td>10</td>
<td>10</td>
<td>62</td>
</tr>
<tr>
<td>Rakhine</td>
<td>2,046</td>
<td>5.79</td>
<td>1.79</td>
<td>36,778</td>
<td>56</td>
<td>14.85</td>
<td>17</td>
<td>17</td>
<td>119</td>
</tr>
<tr>
<td>Rangoon</td>
<td>3,974</td>
<td>11.25</td>
<td>2.22</td>
<td>10,171</td>
<td>391</td>
<td>67.78</td>
<td>39</td>
<td>39</td>
<td>503</td>
</tr>
<tr>
<td>Shan</td>
<td>3,719</td>
<td>10.53</td>
<td>1.58</td>
<td>155,801</td>
<td>24</td>
<td>17.86</td>
<td>52</td>
<td>48</td>
<td>304</td>
</tr>
<tr>
<td>Irrawaddy</td>
<td>4,991</td>
<td>14.14</td>
<td>1.85</td>
<td>351,36</td>
<td>142</td>
<td>14.89</td>
<td>26</td>
<td>28</td>
<td>207</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>35,307</strong></td>
<td><strong>100.00</strong></td>
<td><strong>2.02</strong></td>
<td><strong>676,562</strong></td>
<td><strong>314</strong></td>
<td><strong>288</strong></td>
<td><strong>2,190</strong></td>
<td><strong>13,756</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>35</strong></td>
<td><strong>100.00</strong></td>
<td></td>
<td><strong>2.02</strong></td>
<td><strong>52</strong></td>
<td></td>
<td><strong>23.95</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 1983 census.

(2) Names of states and provinces were those used in 1983.

### Table B.2.3 1988 Population projections

<table>
<thead>
<tr>
<th>State/division (Area)</th>
<th>Population (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kachin</td>
<td>1.01</td>
</tr>
<tr>
<td>Kayah</td>
<td>0.19</td>
</tr>
<tr>
<td>Kayin (Karen)</td>
<td>1.17</td>
</tr>
<tr>
<td>Chin</td>
<td>0.39</td>
</tr>
<tr>
<td>Sagaing</td>
<td>4.30</td>
</tr>
<tr>
<td>Tanintharya (Tenasserim)</td>
<td>1.04</td>
</tr>
<tr>
<td>Bago (Pegu)</td>
<td>4.10</td>
</tr>
<tr>
<td>Magwe</td>
<td>3.60</td>
</tr>
<tr>
<td>Mandalay</td>
<td>5.15</td>
</tr>
<tr>
<td>Mon</td>
<td>1.90</td>
</tr>
<tr>
<td>Rakhine (Arakan)</td>
<td>2.25</td>
</tr>
<tr>
<td>Yangon (Rangoon)</td>
<td>4.46</td>
</tr>
<tr>
<td>Shan</td>
<td>4.04</td>
</tr>
<tr>
<td>Ayeyarwaddy (Irrawaddy)</td>
<td>5.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.20</strong></td>
</tr>
</tbody>
</table>
Implications for human settlements

The high percentage of the population in urban centres, combined with the low rate of urbanization, provides a relatively stable but extensive base for absorbing urban improvements, for obtaining rapid per capita increases in standards, and for mobilizing municipal-level resources. Wide ranges in population density pose problems in the equitable distribution of essential services between the sparsely populated remote border states and the central plains zones. The absence of data on movements within and between the border areas, and the lack of disaggregated urban statistics and detailed household and dwelling unit data in published census material, constrain medium- to long-term planning activities. The trend towards an older population with lower dependency ratios will reduce the demand on social services, but this may be offset by the improvements in health care. Government population-distribution policies may not coincide with the preferences of the communities concerned, leading to social disruption and unrest.

B.3 Economic setting and public finance*

Agriculture remains the basis of the economy, contributing around 37 per cent of GDP and accounting for 63 per cent of total employment. About 12 per cent of the total land area is farmed and just over half of this is under rice cultivation. The country is rich in forest and marine reserves, and in mineral deposits including oil and natural gas. The population is relatively well-educated and the pressure on land is low by Asian standards. Despite these resource advantages, economic development has not matched the potential. The worsening of the economy during the 1980s has resulted in an estimated foreign debt by the end of 1989 of $US4.9 billion, or around 70 per cent of GNP. Despite the dismantling of the Burmese brand of socialism before the events of September 1988, and the subsequent liberalization of trade, official government figures record a continuing downturn. For 1988/89, GDP registered a growth lower than population increase, with declines in annual per capita consumption of 4.8 per cent and in annual production per worker of 1.2 per cent. Drops in production during 1989 were registered for cement, paper, textiles and fertilizers, while only plywood of the major products showed a notable increase.

* The material in this section makes extensive use of Economic Intelligence Unit Country Profile 1989/90, and Far Eastern Economic Review Asia Year Book 1990
In 1988, GDP per capita was $US282, well below the average for low-income countries of $US310. Absolute poverty leading to food insufficiency is reportedly rare, although the urban population and those in remote areas suffered from severe food shortages during 1988 and 1989.

In the 1989/90 review of the economy by the Ministry of Planning and Finance, attention is drawn to the urgent need to reduce the budget deficits due to substantial shortfalls in tax revenue and in contributions from the State Economic Enterprises (SEE), to improve domestic resource mobilization and to reform the tax system. Land revenue, previously collected in kind, is collected in cash. An Amendment Act will facilitate assessment of export duties under border trade arrangements. The Foreign Investment Law of 1988 is intended to increase the inflow of foreign capital. Permissions have been granted for setting up private companies and joint ventures.

Those countries which were not involved in the economic boycotts of the post-1988 Government have taken advantage of the shift towards a more open economy. Malaysia, the Republic of Korea Singapore and Thailand, among others, have signed concessions for timber and fishing rights. The legalization of the border trade with China has dramatically increased revenues. There are doubts, however, about the long-term economic and environmental effects of selling off key natural resources without adequate controls, and on the ability to develop the manufacturing sector in the face of the flow of cheap Chinese consumer goods.

The World Bank, in its 1989 Economic Memorandum based on a June 1988 mission, concluded that the critical state of the economy resulted from years of maintaining an inappropriate agricultural incentive system, from an overvalued exchange rate, and from insufficient resource mobilization. The three main areas of intervention recommended were measures which would recognise the "real" as opposed to the official economy, the opening of exports and imports to the private sector, and the reform of the operating rules of the national SEEs. With respect to the future role of foreign donors, the focus of new aid should be on the reconstruction of existing productive capacity, and on the energy and transport sectors. It was further recommended that assistance be formulated within a consistent macro-economic framework based on the realities of incremental reform, and also that consultative group mechanisms be introduced for those multilateral institutions co-operating in the gradual transition.

Several of the reforms recommended, as described earlier, were already being introduced through new legislation. The SEEs as from April 1989 were placed on a new economic footing, with the Government requiring these organizations to cover their production costs.

The 1989/90 budget and economic plan forecast a trade surplus due mainly to the export of teak and other hard woods. Early in 1989, the rice market showed signs of recovery following the negative effects of the earlier attempts to regularize trade. Little of the benefit from any upturn in the economy is likely to find its way into increased social and industrial investment so long as the budget allocations for the armed forces continue to take priority.

Of the total national investment, around 80 per cent is from the public sector. Budget estimates are shown in tables B.3.1 and B.3.2.
### Table B.3.1 Budget estimates 1989/90 (millions)

<table>
<thead>
<tr>
<th></th>
<th>Central Government</th>
<th>State Economic Enterprises</th>
<th>Town/city development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receipts</strong></td>
<td>8,620.0</td>
<td>25,457.2</td>
<td>383.2</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td>8,763.7</td>
<td>29,764.0</td>
<td>556.7</td>
</tr>
<tr>
<td><strong>Balance</strong></td>
<td>-143.7</td>
<td>-4,307.2</td>
<td>-173.5</td>
</tr>
</tbody>
</table>

### Table B.3.2 Public expenditure allocations 1989/90

<table>
<thead>
<tr>
<th></th>
<th>1989/90 current (K millions)</th>
<th>1989/90 Percentage</th>
<th>1989/90 capital (K millions)</th>
<th>1990/91 Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2119</td>
<td>7.3</td>
<td>549</td>
<td>11.2</td>
</tr>
<tr>
<td>Livestock</td>
<td>560</td>
<td>2.0</td>
<td>131</td>
<td>2.7</td>
</tr>
<tr>
<td>Forestry</td>
<td>1006</td>
<td>3.5</td>
<td>199</td>
<td>4.1</td>
</tr>
<tr>
<td>Mining</td>
<td>1308</td>
<td>4.5</td>
<td>545</td>
<td>11.1</td>
</tr>
<tr>
<td>Processing and manufacture</td>
<td>6676</td>
<td>23.0</td>
<td>915</td>
<td>18.7</td>
</tr>
<tr>
<td>Power</td>
<td>585</td>
<td>2.0</td>
<td>439</td>
<td>9.0</td>
</tr>
<tr>
<td>Construction</td>
<td>1510</td>
<td>5.2</td>
<td>293</td>
<td>6.0</td>
</tr>
<tr>
<td>Transport &amp; communications</td>
<td>1532</td>
<td>5.3</td>
<td>702</td>
<td>14.4</td>
</tr>
<tr>
<td>Trade</td>
<td>6380</td>
<td>22.0</td>
<td>69</td>
<td>1.4</td>
</tr>
<tr>
<td>Social services</td>
<td>1998</td>
<td>6.9</td>
<td>339</td>
<td>6.9</td>
</tr>
<tr>
<td>Financial institutions</td>
<td>1592</td>
<td>5.5</td>
<td>45</td>
<td>0.9</td>
</tr>
<tr>
<td>Administrative organizations</td>
<td>3350</td>
<td>11.5</td>
<td>465</td>
<td>9.5</td>
</tr>
<tr>
<td>Town and city development committees</td>
<td>298</td>
<td>1.0</td>
<td>201</td>
<td>4.1</td>
</tr>
</tbody>
</table>


A/Note: Current expenditure excludes interest payments, subsidies and contribution of State Economic Enterprises to Central Government.

The Yangon consumer price index was recorded officially to have increased 32.1 per cent during the 12 months ending November 1988. Under the new Government, the effects of the continuing high inflation have been marginally reduced for public servants by the wage increases in April 1989, the first for 10 years. Official figures do not, however, reflect the true situation as no account is taken of price levels in the uncontrolled parallel private economy.

Employment is dominated by agriculture, followed by trade and then manufacturing. Due to the lack of reliable statistics on employment outside the public sector and the involvement in second jobs by many public servants, statistics on the distribution of the labour force should be treated with caution. The official figures for 1988/89 are given in table B.3.3.
The reduction in development co-operation flows since 1982 has been a major element in the continuing balance of payment problems. Japan, the largest consistent donor, increased its aid commitment following a decline between 1980 and 1983, but the Federal Republic of Germany and the United Kingdom made substantial reductions. Aid was suspended after the unrest in 1988. Australia and Japan partially resumed their previous programmes in early 1989. Japan has made it clear that new aid could not be commenced without payment on debt amounting to about Yen 24 billion as at March 1990. Emergency relief has been channelled through the United Nations system. United Nations technical assistance projects are operational, following a six-month suspension starting in September 1988. The disbursements from selected major aid sources are provided in table B.3.4. The most recent situation specifically for programmes relating to the human settlements sector is described in Part C with supplementary data in annex II.

### Table B.3.3 Labour force distribution 1988/89

<table>
<thead>
<tr>
<th>Sector</th>
<th>Total (thousands)</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>10 042</td>
<td>62.6</td>
</tr>
<tr>
<td>Livestock and Fisheries</td>
<td>217</td>
<td>1.4</td>
</tr>
<tr>
<td>Forestry</td>
<td>193</td>
<td>1.2</td>
</tr>
<tr>
<td>Mining</td>
<td>87</td>
<td>0.5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1384</td>
<td>8.6</td>
</tr>
<tr>
<td>Power</td>
<td>17</td>
<td>0.1</td>
</tr>
<tr>
<td>Construction</td>
<td>270</td>
<td>1.7</td>
</tr>
<tr>
<td>Transport and communications</td>
<td>529</td>
<td>3.3</td>
</tr>
<tr>
<td>Social Services</td>
<td>449</td>
<td>2.6</td>
</tr>
<tr>
<td>Administrative</td>
<td>558</td>
<td>3.5</td>
</tr>
<tr>
<td>Trade</td>
<td>1 622</td>
<td>10.1</td>
</tr>
<tr>
<td>Others</td>
<td>668</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16 036</td>
<td>100.0</td>
</tr>
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</table>


### Table B.3.4 Selected major aid sources net receipts ($ millions)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
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<tr>
<td><strong>Bilateral:</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Australia</td>
<td>5.4</td>
<td>6.9</td>
<td>6.7</td>
<td>7.0</td>
<td>7.3</td>
</tr>
<tr>
<td>France</td>
<td>13.1</td>
<td>-2.4</td>
<td>5.2</td>
<td>8.2</td>
<td>15.9</td>
</tr>
<tr>
<td>Federal Republic of Germany</td>
<td>76.3</td>
<td>29.7</td>
<td>64.0</td>
<td>17.2</td>
<td>21.5</td>
</tr>
<tr>
<td>Japan</td>
<td>100.6</td>
<td>114.5</td>
<td>141.6</td>
<td>225.8</td>
<td>165.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.3</td>
<td>0.4</td>
<td>-2.1</td>
<td>16.3</td>
<td>3.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>9.6</td>
<td>-2.8</td>
<td>-5.2</td>
<td>-20.7</td>
<td>7.6</td>
</tr>
<tr>
<td>United States</td>
<td>4.0</td>
<td>7.0</td>
<td>8.0</td>
<td>9.0</td>
<td>11.0</td>
</tr>
<tr>
<td><strong>Multilateral:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AsDB</td>
<td>16.6</td>
<td>24.7</td>
<td>32.4</td>
<td>26.6</td>
<td>35.7</td>
</tr>
<tr>
<td>EEC</td>
<td>1.8</td>
<td>1.9</td>
<td>2.1</td>
<td>14.6</td>
<td>0.1</td>
</tr>
<tr>
<td>World Bank-IDB</td>
<td>43.0</td>
<td>79.4</td>
<td>42.9</td>
<td>43.8</td>
<td>64.6</td>
</tr>
<tr>
<td>UNDP</td>
<td>8.8</td>
<td>7.7</td>
<td>12.4</td>
<td>11.8</td>
<td>11.2</td>
</tr>
<tr>
<td>UNICEF</td>
<td>7.0</td>
<td>5.3</td>
<td>8.7</td>
<td>8.1</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Implications for human settlements

The liberalization of trade and the permission to set up private companies and joint ventures is likely to lead to increased employment opportunities in urban centres and to a demand for improved urban infrastructure. The resultant increased rate of urban population growth will, in turn, exert pressure on urban land and housing, but will provide opportunities for an expanded municipal revenue base. The opening-up of the borders for officially sanctioned trade has already made a considerable impact on the urban economies of Mandalay and Taunggyi, with ripple effects on surrounding smaller towns in their hinterlands and on settlements along the main routes leading to the borders with China and Thailand. Environmental degradation resulting from uncontrolled logging and depletion of marine resources will influence rural and coastal settlement patterns. A swing from agriculture as the dominant source of employment will sever traditional farming and market-town linkages and will accelerate the emergence of an urban/rural dichotomy.

B.4 Political situation, institutional and legal framework

During the first half of 1990, all executive and legislative powers continued to be held by the military authorities. The supreme governing body, the State Law and Order Restoration Council (SLORC), is composed of 19 members, including seven of the nine Ministers who share 21 portfolios between them. All Ministers, with the exception of the Minister for Health and Education are senior career military officers. Most positions at Director-General and Director level are in the hands of civilian public servants or retired officers. Local government is controlled by SLORC military appointees, and divisional-level LORCs serve as decentralized administrative organs and supervise localized development committees.

The SLORC Chairman, Senior General Saw Maung, is Prime Minister and also the Minister for Defence and for Foreign Affairs. Other SLORC members with supra-ministerial powers are Secretary 1, Major General Khin Nyant, and Secretary 2, Major General Tin Oo.

As at March 1989, over 230 political parties had been registered, in the lead-up to the final date set for elections, 27 May 1990. The elections were held on schedule, with the numbers of parties reduced, through deregistration by SLORC and mergers, to 93. Initial unofficial results show an overwhelming majority of seats to have been won by the National League for Democracy (NLD), the main opposition grouping.

As announced by SLORC in April 1990, the transition process involves the drafting and adoption by Parliament of a Constitution after the multi-party elections, followed by a national referendum on the new Constitution and then a second round of elections within the provisions of the finally approved Constitution. Any acceptable Constitution will need to accommodate the demands of the minority groups on the eastern border who have been continuously at war with the successive Burmese Governments since the country’s independence. In Yangon, the general opinion among both local and foreign political observers was that a two-year period would be required. However, given the subsequent massive electoral support for NLD and the continuing political and economic pressure from the international community, many commentators are optimistic that the military will agree to some form of power-sharing at an earlier stage in the process. In the immediate post-election period, there are press reports of an emerging consensus among the international community. There is apparently a general feeling that, after 30 years of an isolationist, one-party order, the new Government
must be given time to adjust and that careful monitoring of the role of the military should accompany the removal of sanctions and the resumption of economic relations and development co-operation programmes.

The central- and local-governmental organizational tiers have remained more or less intact under the present Government, with the obvious exception of the parliamentary level. Among the 14 divisions states a set of 50 sub-divisional groupings have been inserted by the military authorities as a level above the 31 townships. Within the townships there are both urban and rural administrative units. Centres with urban status are designated either as towns (119) or municipalities (169). The larger urban centres such as Yangon and Mandalay are themselves made up of townships, with 27 within the Yangon boundary and four within Mandalay. The smallest units in urban areas are the wards (2190) and in rural areas the village tracts (13,756). Table B.2.2 shows the distribution according to the 1983 census. The term "city" is used loosely. Only Yangon has city status conferred by specific legislation.

The current list of ministries together with selected departments relating to human settlements sector functions are presented in figure B.4.1. The key ministries are the Ministry of Construction and the Ministry of Home and Religious Affairs. Within these, the Housing Department (HD), the General Affairs Department (GAD), and the local-level development committees play key executive roles.

The organizational arrangements of the Ministry of Home and Religious Affairs (MOHRA) and the Ministry of Construction (MOC) are shown in figures B.4.2 and B.4.3 respectively. Water-supply and sanitation sectoral responsibilities, which are spread over four ministries, are set out in figure B.4.4.

Due to the erratic evolution of the human-settlements network of institutional roles and relationships, there are, currently, certain inconsistencies, some of which will be removed by the new Yangon city legislation promulgated in May 1990. The planning, land-development, land-administration, infrastructure and general city management responsibilities will be consolidated under the Yangon City Development Committee (YCDC). The Mandalay City Development Committee (MCDC) will, however, remain subject to budgetary supervision by GAD, and the Settlement and Land Records Department (SLRD) under the Ministry of Agriculture and Forests (MOAF) will retain this city’s land administration responsibilities. The operations, organization and staffing of HD, YCDC, and MCDC are addressed in part D, which deals specifically with the urban aspects of the human settlements sector.

GAD is essentially an umbrella administrative department which supervises local administration, reviews budgets and makes recommendations to the Ministry of Finance (MOF), and designs and implements certain water-supply and road projects. In keeping with the expanded technical role allocated to GAD in 1988, the Headquarters Engineering Division currently has a personnel strength of 317, of whom around 30 per cent are degree or diploma engineers. The total of township personnel, for which GAD approves the staff establishment, is around 40,000. Each urban ward and village tract has the post of a clerk, which in aggregate accounts for about a third of the total. The towns and municipalities within the township administrative units account for about 12,000 personnel.
In the post-1988 context of rapid decision-making and short project gestation periods, a flexible *ad hoc* situation prevails with respect to institutional roles. Several departments, notably HD and the Construction Corporation, now known as Public Works, are undergoing reorganization in response to changing areas of responsibility.

The legislative system inherited from the colonial period is highly comprehensive but it is complicated by the division of the country into Upper and Lower areas. This resulted in the introduction of a second, later set of legal provisions covering, *inter alia*, local government, land administration and taxation arrangements, when the British annexed Upper Burma and then immediately following independence. Of specific concern to the human settlements sector are the following laws and rules:

(a) Towns Act, 1870;
(b) Lower Burma Towns and Village Act, 1894;
(c) Acquisition Act, 1894;
(d) Municipal Act, 1898;
(e) Land Revenue Manual, 1907;
(f) Rangoon Development Trust Act, 1920;
(g) Land Rules, 1922;
(h) City of Rangoon Municipal Act, 1924;
(i) Underground Water Rules, 1941;
(j) Requisitioning (Emergency Provisions), 1947;
(k) National Housing Town and Country Development Board Act 1951;
(l) Land Nationalisation Act, 1953;
(m) Rent Control Act, 1960;
(n) Town Planning Act (Draft Proposal), 1961;
(o) City of Yangon Development Law (SLORC Law No. 11/90), 1990;

Other relevant legislation covers: land alienation, government buildings, building regulation and repair, land purchase, land and revenue regulation (Upper Burma), local authority loans, and municipal taxation.

The precise status of the pre-1988 legislation in relation to the 1974 Constitution and the laws subsequently enacted by SLORC is unclear. However, the major new reform which clearly influences urban management is item (o), the effects of which are discussed above with reference to the mandate for HD and YCDC. The full text of this law is provided in annex VI.

**Implications for human settlements**

Although the general organization of central and local administration has been retained under the present Government, participatory arrangements through councils and associations have been disrupted and specialist technical decision-making has been displaced by military management systems. The uncertainties surrounding the post-election situation will affect the nature and quantity of external assistance and the capacity to predict the acceptability of new human settlements-related projects which seek to respond to the post-1988 mass urban resettlement programmes. Changes in the complementary roles and relationships between HD and YCDC will affect the institutional framework for the UNDP/UNCHS (Habitat) project scheduled to commence in 1990 (see section C.5.1). A newly-constituted
Government to replace the SLORC transitional régime would provide opportunities for a thorough review of all legislation relating to the sector. Laws covering development-control and town-planning powers which have never been fully applied or finally enacted,(for example, items (k) and (n) in the above list) are in urgent need of consolidation and simplification. The effects of the Rent Control Act on repair and maintenance activities and the bypassing of the stipulations of the Act by landlords and tenants is such that reforms will be required. This will be particularly important with respect to the proposed rehabilitation programme for the Yangon CBD area.
Figure B.4.1 Ministerial/departmental system

**SLORC** (19 members)
Supreme Court
Attorney-General
Auditor-General
Multiparty Democracy General Election Commission
Public Services Affairs Department and other related Public Service bodies

Ministries (9 ministers)
1. Prime Minister's Office
2. Agriculture and Forests
3. Construction
4. Co-operatives
5. Culture
6. Defence
7. Education
8. Energy
9. Foreign Affairs
10. Health
11. Home and Religious Affairs
12. Industry I
13. Industry II
14. Information
15. Labour
16. Livestock and Fisheries
17. Mines
18. Planning and Finance
19. Social Welfare
20. Trade
21. Transport and Communications

Selected departments
- Settlement and Land Records S V W/ Survey V / Agricultural Mechanization H / Irrigation B
- Public Works D E R / Housing B D F G H S
- Co-operatives N / Cottage Industries N
- Higher Education L / Technical, Agricultural and Vocational Education L
- Energy Planning I J
- Health M / Planning and Statistics M
- General Affairs C D E F G H M T U / Immigration and Manpower W / Municipal-Township Development Committees B C D E F G H M T U
- Industries Planning Q
- Planning C / Project Appraisal C / Budget C / Central Statistics Organization W / Foreign Economic Relations A
- Relief and Resettlement N
- Road Transport D E O P / Railways O P / Inland Waterways O P / Posts and Telecommunications K
- Advanced education/vocational traini
- Environmental health
- Community development/income generation
- Urban transport
- Rural transport
- Industrial location
- Construction industry
- Land administration/revenues
- Municipal taxation
- Local administration
- Mapping/surveys

Human settlements functions

A Development co-operation
B Urban/regional planning
C Financial planning/budgeting
D Urban roads/bridges
E Rural roads/bridges
F Urban water supply/sanitation
G Urban solid waste/drainage
H Rural water supply/sanitation
I Urban power supply
J Rural power supply
K Telephones
W Census/Statistics

*Source: AsDB, Water Supply and Sanitation Sector Profile, 1988 (Manila, 1988)*
FIGURE B.4.2

Ministry of Home and Religious Affairs

Sources: AsDB, Water Supply and Sanitation Sector Profile, 1988
**Figure B.4.3 Organization of Ministry of Construction**

<table>
<thead>
<tr>
<th>Public Works</th>
<th>Housing Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minister (Lt. Gen. Aung Ye Kyaw)</td>
<td>Director General (U Aung Phone)</td>
</tr>
<tr>
<td>Officer on Special Duty (Lt. Col. Khin Maung Myint)</td>
<td>Deputy Directors of Divisions:</td>
</tr>
<tr>
<td>Managing Director (U Khin Maung Yin)</td>
<td>- Urban and Regional Planning</td>
</tr>
<tr>
<td>Chief Engineer</td>
<td>- Unban Water Supply/Sanitation</td>
</tr>
<tr>
<td>Directors:</td>
<td>- Land: Surveys/Revenue</td>
</tr>
<tr>
<td>Engineering (planning)</td>
<td>- Finance Planning</td>
</tr>
<tr>
<td>Engineering (roads)</td>
<td>- Estate Management</td>
</tr>
<tr>
<td>Engineering (water)</td>
<td>- Accounts</td>
</tr>
<tr>
<td></td>
<td>- Administration</td>
</tr>
</tbody>
</table>

*Note:* Both wings are in a state of transition. Public Works is not officially titled a department. Previously this wing was the Construction Corporation. The Housing Department is in the process of being reorganized as the Department of Human Settlements and Housing, and under the legislation introduced in May 1990 will lose certain functions and personnel to YCDC.
The national-level body concerned with land records and assessments is the Settlement and Land Records Department (SLRD) within MOAF. This Department has divisions dealing with statistics, works, administration, and rural land. Records for Yangon up to the May 1990 transfer to YCDC were administered by HD, otherwise every township local-administration unit has an SLRD branch office. In Mandalay, the four townships are administered by a single branch office. Land recording, including cadastral data and land uses, was well-established during the colonial period. According to SLRD, the map coverage extends over all but certain remote areas, where written data based on field enquiries are used. Records for the states (Upper Burma) were only introduced following independence.

Historically, land tenure in rural areas for Lower Burma consisted of a "royal" freehold if cleared and worked for three years. In Upper Burma freehold grants were made. Leasehold tenure was introduced later, with 20 to 30-year lease periods. Following colonization, all land in the urban areas was declared as belonging to the Crown, with the exception of religious holdings and land held by influential Chinese. Those siding with the British were given freehold land. Later those who distinguished themselves in the First World War were offered district administration posts which included freehold land grants. There were no restrictions on transferring freehold and leasehold land.

Rural land, following nationalization, remains under a tenure system based on "user rights". Rural land reform has been under consideration since 1988, but as yet only controls of agricultural production and marketing have been subject to reforms (see section E.2 on rural land use and tenure).

Outside Yangon, land-administration operations under SLRD include assessments for land revenues and for acquisitions, and the collection of transfer fees and stamp duty, although GAD collects revenues, manages land transfers and makes payments. Rural land is assessed annually and collection performance is reported as 95 per cent of demand. Assessment rates have not been adjusted for 20 years. A new system, based on yields rather than amount of land and type of crops, is under consideration. Excluding Yangon, SLRD reports the total annual receipts for land revenues as around K700 million.

Compensation for compulsory conversion from agriculture uses is calculated at 12 times the annual land revenue for cultivated paddy land. For urban serviced land, for which there is leasehold and freehold tenure, the valuation for acquisition purposes is calculated at 1.5 to 2 times the assessed value.

Freehold land revenue is collected annually; leasehold land rent quarterly. Only freehold plots over a quarter of an acre are subject to land revenues.

In granting new leasehold plots, licences are given for three years. If construction is satisfactorily carried out, 30-year or 60-year leases are issued depending on the building type. Ninety-year leases have not been given since independence. Permits are temporary provisions lasting, in the first instance, for one year. Subdivision control in Yangon is carried out by YCDC. However, HD first inspects the cadastral map and provides approval.

Land and property markets are particularly active in Mandalay and Taunggyi, following the legalization of border trade. In these centres, the shift
during 1990 has been away from purchases towards rentals, accompanied by large payments of key money (see section D.5.2). Undeclared key money plays a major role in all transfers throughout the urban sector, partly in order to bypass rental-control provisions, and partly to avoid revealing the role of "black money" in transactions.

Rural cadastral and land-use mapping is at the scale of 16 inches to one mile (1:3960). Land-use classifications cover rice (three types), other crops, alluvial islands, swamps and upland areas. Buildings are not shown although major roads and water bodies are included.

The urban cadastral maps, managed by HD up to the May 1990 transfer of Yangon's land-administration responsibilities to YCDC, date from 1895. Within the City boundary there are 300,000 registered land holdings. Annual land transactions number around 3000. Within HD, there are 38 surveyors and 12 land inspectors. All registrations and transfers are recorded manually both in HD and SLRD. The land-record plot-identification system does not match that used for YCDC property taxation and for electricity and water supply.

There is national coverage of topographical mapping at the scale of one inch to one mile (1:63,360) based on the British Ordnance Survey level of detail and cartographic conventions. Contours are at 10-foot intervals. Latest revisions were made between 1940 and 1960. Aerial photography for the whole country was carried out in 1969 at 1:25,000 scale.

Aerial photography is not used by HD for urban planning analysis, nor by GAD and the other relevant departments for rural road planning. The Mission did not identify any uses of satellite data, or requests for assistance in this field from departments with human settlements interests. However, a UNDP project executed by FAO is addressing remote-sensing techniques for agricultural development.

Implications for human settlements

Although the present Government has not as yet intervened legislatively in the land-tenure system, the possibility of rural land reforms providing title to those working the land, either under SLORC or a new Government, cannot be ruled out. If there should be reforms, there will be effects on settlement patterns and on rural to urban migration, particularly if a relatively free rural land market is allowed to operate. The increased pressures on urban land, likely to be felt throughout the economy of the country as a relatively unregulated private sector takes off, will expand the workload of the departments responsible for land records and survey. The current laborious manual systems and the fragmented plot-identification arrangements for the various taxation and municipal services records indicate the need to examine the opportunities for computerized methods and for an integrated land-information system. Registration of brokers may also need to be considered. Aerial photography and satellite data are neglected as analytical planning tools; increased access and use will involve clarification and resolution of prevailing security provisions. All aspects of the likely changes in land-administration and -survey techniques have major implications for the formulation of future training programmes.

B. 6 Transport and communications

The new policy of a shift towards a more market-oriented economy has emphasised a need for improved physical infrastructure, including air, water, rail and road transport, together with modernized telecommunications.
Government allocates high priority to the replacement of equipment and the expansion of systems to deal with growing volumes of both internal and external trade. The private sector dominates internal freight as shown in table B.6.1.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic output</td>
<td>83 056</td>
<td>83 029</td>
<td>81 361</td>
<td>80 329</td>
</tr>
<tr>
<td>Imports</td>
<td>626</td>
<td>682</td>
<td>504</td>
<td>360</td>
</tr>
<tr>
<td>Total internal freight</td>
<td>83 882</td>
<td>83 711</td>
<td>81 865</td>
<td>80 698</td>
</tr>
<tr>
<td>Public sector:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Railways</td>
<td>5 781</td>
<td>5 735</td>
<td>5 267</td>
<td>3 913</td>
</tr>
<tr>
<td>Inland Water Transport Corp</td>
<td>2 076</td>
<td>1 984</td>
<td>1 877</td>
<td>1 524</td>
</tr>
<tr>
<td>Road Transport Corp</td>
<td>2 328</td>
<td>2 574</td>
<td>2 368</td>
<td>1 710</td>
</tr>
<tr>
<td>Five Star Line (coastal)</td>
<td>1332</td>
<td>1 100</td>
<td>937</td>
<td>632</td>
</tr>
<tr>
<td>Other</td>
<td>4660</td>
<td>6 004</td>
<td>5 992</td>
<td>6 153</td>
</tr>
<tr>
<td>Co-operative sector</td>
<td>2817</td>
<td>3 166</td>
<td>3 209</td>
<td>2 246</td>
</tr>
<tr>
<td>Private sector</td>
<td>70 624</td>
<td>68 806</td>
<td>67 397</td>
<td>68 377</td>
</tr>
</tbody>
</table>


Private road transport has around eight times the number of trucks registered as the public sector and five times as many buses. This private-sector dominance is further augmented by around 26,000 pick-ups used as minibuses. Highway networks are being upgraded, following 40 years of neglect, and new routes are under construction. There are 23,000 kilometres of main roads, of which around 60 per cent is to all weather standard. The only internal air carrier is Myanmar Airways Corporation, which with Thai Airways International provides the major external service. Internal passenger trips in 1988/89 totalled 413,000. Due to lack of available flights on the fleet of six Fokker F-27s, three Fokker F-28s and two helicopters, passenger numbers have declined over the last 10 years.

The number of telephones in Myanmar has doubled since 1974. There are now 65,419 telephones -1 per 590 people. This is one of the lowest levels in the world and the lowest in Asia. In addition, there are 1115 post offices, 310 telegraph offices, 138 telex offices and 22 facsimile machines. Although there were telephones in the country in 1884, modernization of the system began only in 1974 with assistance from IDA. An Earth satellite station supplied from Japan was commissioned in 1979 with a capacity of 60 circuits, together with an international electronic telephone exchange.

The Government has received assistance with its third telecommunications development project in extending the network in 10 townships. The project includes improved long-distance facilities, expansion of telex and computer facilities and a new digital electronic international exchange.

Television has been extended to 170 townships. The one channel XZK-TV transmits in colour nightly between 7 and 9.30 p.m., with extra programmes at weekends and holidays. International news is covered by
solar VISNEWS. In 1988, it was estimated that 9.7 per cent of the population had sets, but that 72 per cent were occasional viewers.

Voice of Myanmar broadcasts throughout Myanmar, in English and eight national languages. The Health Education Bureau produces programmes for radio and television, and also produces related pamphlets and posters.

Implications for human settlements

The relatively low distribution of feeder roads in the remote border areas will affect the proposed programmes for increased coverage of essential services. A system of rural service centres to provide strategically-located groupings of key facilities will need to be investigated. This will, in the long term, influence population distribution and rural settlement patterns. The existing and planned national road and rail network allows comparatively good links between the main urban centres. The Yangon metropolitan-level loop railway line is underexploited as an urban mass-transit mode. The post-1988 satellite townships (see section D.4.6) will depend heavily on the opportunities for upgrading this rail system in the capital. These new developments, combined with the likely rapid modernization of the economy, will put stress on the existing public transport systems and traffic management capacity. To a lesser extent, similar urban transport problems will be experienced throughout the other larger urban centres. A less restricted media will provide opportunities for higher levels of communication and of expanded participation in the management of urban and rural settlements, and will enhance education in public health and environmental issues.

B.7 Energy

The country’s energy resource base includes natural gas, petroleum, hydropower, biomass and coal. Reserves are more than adequate but production problems have led to extreme shortages. Myanmar is one of the lowest commercial-energy consumers amongst LDCs (73kg oe compared with an average, among other LDCs (excluding China and India) of 116 kgoe. The country now faces an immediate energy-supply crisis caused by declining supplies of oil, gas and electricity.

Capital assistance for the development of power stations has been provided by Japan and for general transmission by the World Bank/IDA. Also planned for World Bank/IDA financing is an on-shore gas development project.

Implications for human settlements

Power shortages and intermittent supplies will severely affect the ability of the major post-1988 urban-resettlement areas to develop as productive communities. Modernization will increase energy consumption in both urban and rural settlements, leading to a higher demand for domestic electrical equipment, to shifts in living patterns and resultant changes in housing forms.

B.8 Construction

The move towards a market economy is likely to reduce significantly the share of the public sector in construction, which was 84 per cent in 1989/90, compared with 15 per cent for the private sector, and 1 per cent for co-operatives. The promotion of private companies and the removal of the monopoly on public-sector projects from the Construction Corporation (renamed Public Works), provides opportunities for a more competitive and
efficient industry. Apart from technical skills in high-rise design and construction, the available expertise in trades and professions is reportedly adequate. There are gaps, however, in organizational and financial experience in setting up and running large-scale private construction enterprises.

The most serious problems facing the industry are related to materials supply and costs, particularly cement and reinforcing steel. There are wide differentials between official prices for all materials and those paid in the parallel market. Rapid inflation in both materials and labour costs has resulted from the accelerated public works programmes launched by the present Government, and particularly from the resettlement schemes being implemented in all major urban centres.

The objectives formulated by the Government for the construction sector are to give top priority to roads and bridges and for commercial buildings required for national economic and regional development, to give second priority to social service buildings such as hospitals and schools, and third to administrative buildings. There is no mention in the Government's 1989/90 review of the pre-election urban road improvement and resettlement crash programmes which have dominated construction activities during the 1989/90 financial year and are running into 1990/91.

The volume of construction from 1985/86 to 1988/89 is broken down by public, co-operative and private sectors in table B.8.1. Data on public sector housing stock held by ministries for their own personnel, and for which the Government retains full operation and maintenance responsibilities, are provided in table B.8.2.

Table B.8.1 Volume of construction works (K millions)

<table>
<thead>
<tr>
<th></th>
<th>1985/86</th>
<th>1986/87</th>
<th>1987/88*</th>
<th>1988/89*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads and bridges</td>
<td>2 704.0</td>
<td>2 812.6</td>
<td>2 793.0</td>
<td>2 323.0</td>
</tr>
<tr>
<td>Buildings</td>
<td>269.5</td>
<td>284.3</td>
<td>354.9</td>
<td>279.1</td>
</tr>
<tr>
<td>Irrigation works</td>
<td>1371.8</td>
<td>1 499.0</td>
<td>1 368.9</td>
<td>1 150.7</td>
</tr>
<tr>
<td>Power transmission</td>
<td>299.0</td>
<td>182.7</td>
<td>183.1</td>
<td>155.6</td>
</tr>
<tr>
<td>Transport related</td>
<td>125.8</td>
<td>97.8</td>
<td>1 52.6</td>
<td>59.7</td>
</tr>
<tr>
<td>Mining related</td>
<td>72.5</td>
<td>116.0</td>
<td>107.1</td>
<td>87.7</td>
</tr>
<tr>
<td>Others</td>
<td>7.8</td>
<td>6.7</td>
<td>3.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Renovations/improvements</td>
<td>242.6</td>
<td>243.5</td>
<td>224.3</td>
<td>208.3</td>
</tr>
<tr>
<td>Roads and bridges</td>
<td>315.0</td>
<td>393.6</td>
<td>398.5</td>
<td>378.7</td>
</tr>
<tr>
<td>Buildings and others</td>
<td>83.9</td>
<td>93.7</td>
<td>101.0</td>
<td>270.7</td>
</tr>
<tr>
<td>Co-operative sector</td>
<td>35.5</td>
<td>38.3</td>
<td>38.7</td>
<td>27.1</td>
</tr>
<tr>
<td>Private sector</td>
<td>343.7</td>
<td>350.8</td>
<td>350.9</td>
<td>414.7</td>
</tr>
<tr>
<td>Total</td>
<td>3 083.2</td>
<td>3 201.7</td>
<td>3 182.6</td>
<td>2 764.8</td>
</tr>
</tbody>
</table>


(*) Provisional
<table>
<thead>
<tr>
<th>Ministry</th>
<th>1986/87 (actual)</th>
<th>1988/89 (provisional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher authorities</td>
<td>- 2,229</td>
<td>2,235</td>
</tr>
<tr>
<td>Agriculture and Forestry</td>
<td>16,761</td>
<td>17,311</td>
</tr>
<tr>
<td>Livestock and Fisheries</td>
<td>3,081</td>
<td>3,262</td>
</tr>
<tr>
<td>Mines</td>
<td>9,621</td>
<td>10,030</td>
</tr>
<tr>
<td>Industry I</td>
<td>9,637</td>
<td>10,043</td>
</tr>
<tr>
<td>Industry II</td>
<td>3,827</td>
<td>2,422</td>
</tr>
<tr>
<td>Construction</td>
<td>22,525</td>
<td>23,506</td>
</tr>
<tr>
<td>Transport and Communications</td>
<td>24,545</td>
<td>24,832</td>
</tr>
<tr>
<td>Education</td>
<td>2,981</td>
<td>3,036</td>
</tr>
<tr>
<td>Health</td>
<td>7,338</td>
<td>7,350</td>
</tr>
<tr>
<td>Information</td>
<td>496</td>
<td>496</td>
</tr>
<tr>
<td>Culture</td>
<td>108</td>
<td>92</td>
</tr>
<tr>
<td>Planning and Finance</td>
<td>886</td>
<td>1206</td>
</tr>
<tr>
<td>Social Welfare</td>
<td>51,292</td>
<td>55,132</td>
</tr>
<tr>
<td>Home and Religious Affairs</td>
<td>494</td>
<td>494</td>
</tr>
<tr>
<td>Trade</td>
<td>3,662</td>
<td>5,527</td>
</tr>
<tr>
<td>Defence</td>
<td>33</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>178,797</td>
<td>7,990</td>
</tr>
</tbody>
</table>


### Implications for human settlements

The lifting of controls on private contractors competing for government work provides opportunities for the introduction of an efficient, competitive construction industry. Lack of management experience and the continuing critical shortage of building materials will constrain progress. There is, nevertheless, a promising foundation. Although production capacity needs expanding and transport costs need stabilizing, ample natural resources for construction materials are readily available. With the notable exception of steel and related products, most construction and services components are manufactured within the country, albeit not always to acceptable standards and adequate levels of output. Increased population pressure on urban centres, together with higher levels of industrialization, will, undoubtedly, overtax the industry in its current embryonic state. A more diversified industry, with opportunities for a range of sizes and specializations in firms, should accelerate the move away from temporary construction materials to housing with less fire risk and higher health standards. For example, increased incentives for small businesses operating in a more open market should generate an active trade in sanitation and water-supply components, operation and maintenance tools and equipment, and solid-waste management equipment. There are openings for initiatives in appropriate technologies for small-scale industries based in the post-1988 peripheral resettlement areas where the needs for tight income-generating linkages are critical.

### Water supply and sanitation

In the past decade there has been an emphasis on rural water supply and sanitation. Water-supply coverage is officially stated to have increased from 13 per cent to 27 per cent and sanitation from 5 per cent to 25 per cent.
In urban areas there have been specific projects and studies, but overall improvements, particularly in low-income urban areas, have been slight.

The large-scale resettlement programmes which have been under implementation in the cities and most large towns since 1988/89 are likely to increase the usual incidence of illness caused by poor sanitation. Although tubewells have been included in these projects, sanitation has been left to the occupants and drainage is inadequate.

Piped water-supply systems serve parts of 64 of Myanmar’s two cities and 288 towns. Many of these installations are 40-70 years old with intermittent and poor-quality water. Plans for improvements have been prepared for 23 towns and the former Government was seeking assistance to add 17 towns to the programme.

By the end of the year, Mandalay will have a new city-wide piped-water system as a result of an AsDB/OPEC loan. The project began in 1985. In Yangon, AsDB has also been involved in a project to construct the Phugyi reservoir to increase the water supply to the existing distribution systems.

The rural population relies on rivers, lakes, ponds and wells. RWSD had drilled 6807 deep wells in Lower and Upper Burma between 1952 and 1976. Many of these are no longer operational. Since then, UNICEF and AIDAB have been assisting in the extension of rural water supply with tubewells and hand pumps. There are a number of gravity-fed piped-water systems in hilly areas and many hand-dug private wells throughout the country.

Outside Yangon’s CBD, there are no conventional piped sewerage systems in Myanmar. In the cities and towns, septic-tanks and pit-latrines are used by those who can afford to build them. Bucket latrines were formally discontinued around 1982 and the city authorities no longer collect night soil. In almost all densely-built areas seepage from septic-tanks and pits finds its way into open rainwater drains or natural waterways which are regularly blocked or flooded. The health hazards of poor sanitation and drainage are perceived by local professional people and in all reports on the subject as the most urgent problem to be tackled in human settlements.

Table B.9.1 lists recent and current urban projects in water and sanitation. Many of these were suspended or have been closed down since 1988.
Table B.9.1 Urban water supply

<table>
<thead>
<tr>
<th>Project</th>
<th>Population served</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandalay water supply (AsDB and OPEC loan)</td>
<td>66,000</td>
<td>On-going - 9000 house connections; 40 posts, 485 fire hydrants and 14 tubewells completed.</td>
</tr>
<tr>
<td>Phu Gyi Reservoir, Yangon water supply (AsDB and OPEC loan)</td>
<td></td>
<td>On-going, - 28 MGD additional water supplied, raising level of level of service. No extension of distribution mains.</td>
</tr>
<tr>
<td>Gyobyu and Hlaga Hlawga</td>
<td></td>
<td>80 MGD to downtown Yangon.</td>
</tr>
<tr>
<td>Pyi water supply (JICA-grant aid)</td>
<td>68,600</td>
<td>Completed.</td>
</tr>
<tr>
<td>Magway water supply (JICA-grant aid)</td>
<td>59,700</td>
<td>Completed.</td>
</tr>
<tr>
<td>Nine Towns water supply - Shwebo (for Thazi)</td>
<td>51,400</td>
<td>Thazi completed.</td>
</tr>
<tr>
<td>Monywa, Pakokku, Yenanchaung, Taungdwingyi, Thazi, Pyinmana Pyawbwe and Yemethin (JICA-Grant Aid)</td>
<td></td>
<td>Pakokku 80 per cent completed Others on-going and in good progress.</td>
</tr>
<tr>
<td>Mudon water supply</td>
<td>50,200</td>
<td>Completed.</td>
</tr>
<tr>
<td>Feasibility study for water supply and sanitation for seven towns (UNDP grant)</td>
<td></td>
<td>Study completed.</td>
</tr>
<tr>
<td>Feasibility study for water supply and sanitation for five towns (UNDP grant)</td>
<td></td>
<td>Study completed.</td>
</tr>
</tbody>
</table>

Source: WHO, Yangon

**Implications for human settlements**

As the most important basic service without which settlements cannot survive, water supply, together with the management of both liquid and solid wastes, has major repercussions on domestic and public health, on social services, and on economic activities. The post-1988 urban resettlement programmes are exerting a major stress on existing water and sanitation systems throughout all the urban centres affected. The new Mandalay water-supply project suffers from the lack of a parallel sewerage network. This will have a serious impact on that city’s drainage system. Lack of adequate maintenance and breakdown in the earlier rural water-supply installations will affect settlement growth patterns and may act as a push factor, particularly if a free rural land market is introduced and increased industrialization attracts migration to urban centres. The standards and techniques of sanitation to be adopted in order to improve existing conditions will influence the planning of new expansion schemes, and the capacity of already developed urban areas.

**B.10 Water resources/ floodcontrol/ environment**

Myanmar’s four major river systems - Ayeyarwady, Chindwin, Sittan and Salween - have a catchment area amounting to 90 per cent of the land area. Peak flows coincide with the June-October rainfall period. Although water resources are abundant, the lack of investment and skilled technicians has resulted in only 20 per cent of the 13 million acres of irrigable land being
developed. The groundwater resources of the country are relatively unexplored and the depth of aquifers varies between 2-3000 and 80-200 metres. (1986/87).

In the first year (1986/87) of the Fifth Four-Year Plan, seven flood-protection and irrigation projects were completed with assistance from the World Bank, EEC and JICA, among others. Development planning for irrigation and the establishment of a databank system are two new projects given priority by the Government.

In the past, there has been a tendency to select the cheapest chemicals for pesticides in order to save foreign exchange. Some of these are banned in other countries. The risks to people, animals, soils and water sources are high. In May 1990, new legislation was introduced to control the type and use of pesticides.

Some reports suggest that farming methods in the Ayeyarwady delta and lowlands are depleting the soil of micro-nutrients and that salinity is increasing. As the crop yields decrease, farmers tend to increase the use of chemical fertilizers.

Myanmar's forests occupy 46 per cent of the total land area and the export of hardwood overtook rice as the highest foreign exchange earner in the mid-1980s. It is known that teak is amongst the products illegally smuggled out of the country and extensive logging concessions have been formally purchased over the last two years by business interests based in Thailand. The extent and effect of uncontrolled forestry activity is not known, but the environmental risks of forest depletion and fires, landslides, and soil erosion are high in Myanmar.

**Implications for human settlements**

Accelerated environmental degradation arising from uncontrolled logging will influence rural land uses, farming systems, the distribution of the rural population, and the size, location and form of rural settlements throughout the affected areas. Improved management of water resources will provide opportunities for expanding the areas of cultivated land. The impact of major flood-protection and irrigation projects on settlement patterns does not, however, appear to have been given adequate attention. Seasonal flooding in the peripheral areas of Yangon will seriously affect the post-1988 resettlement schemes. Protection measures for these schemes have not been addressed during the design stage, and major health hazards and damage to properties are very likely to occur.

**B.11 Education/health/welfare**

The literacy level of the population over 5 years of age was 79 per cent according to the 1983 census. All schools are State schools, starting at age five and ending at age 16, comprising primary (five years), middle (four years), and high schools.

During 1987/88 only 7 per cent, 9 per cent and 12 per cent of enrolled children passed their final year of primary, middle and high school respectively. The findings of an investigation showed the major causes for primary school drop-out are economic (43 per cent), and needing to assist with household work (20 per cent). In higher education, pass rates were higher but at universities and colleges during 1987/88 they were again low:
State expenditure for education was K1159.9 million in 1988/89.

The Rangoon Institute of Technology (RIT) has been running a one-year diploma course in physical planning since 1985. An average of 10 graduates per year were produced in three years, although the planned capacity was 20 per year. Four are already working in the URP Division of HD.

Schools, institutes, colleges and universities were closed as a result of the civil unrest in 1988. Primary and middle schools had reopened by September 1989.

Myanmar's People's Health Plan III (1986-1990) singles out community health care as a priority and aims to expand primary health care (PHC) to reach the wards and village tracts of all 314 townships.

Health expenditure accounts for 1 per cent of GDP and of this 70 per cent is directed to public-sector health services. MOH has been enlarged by the creation of two new departments, Statistics and Traditional Medicine.

Deaths by major causes, for 1984, the last year for which records were available, were reported as being dominated by viral, parasitic/protozoal and other infections, pneumonia/upper respiratory tract problems, and cholera and other diarrhoeal diseases.

UNICEF has reported infant mortality and child mortality rates for 1987 as 44.3 per thousand live births and 98 per thousand live births, respectively. Daily per capita calorie intake for 1986 was 89 percent of requirements. For 1988, the immunization performance (one year olds) was reported as 44 per cent for BCG and 34 per cent for DPT.

There are more doctors in the country (2.9 per 10,000 population) than there are nurses or midwives. The number of doctors increased by 16 per cent, nurses 12 by percent, and midwives by only 4.5 percent between 1984 and 1986. By contrast, the number of community health workers and auxiliary midwives increased by 92 per cent and 61 per cent respectively during the same period.

The Government now wishes to extend PHC to the previously underserviced Shan and Kayah States as part of its Border Areas Development initiative. UNICEF plays a major role in assisting MOH in PHC. A Universal Child Immunization Programme (UCI) aims at 60 per cent national coverage by the end of 1990 and awareness of Oral Rehydration Therapy (ORT) is reported at 62.5 percent among rural woman.

The Social Welfare Department of the Ministry of Social Welfare has 1644 staff in its field and central offices. There are 14 area offices in the states and divisions. The public sector is responsible for 14 separate special schools including 33 day-care centres and 20 pre-primary schools. The budget of the Department is only K18 million and there is a shortage of staff at all levels.

There are 1360 national NGOs involved in health and welfare programmes. These include schools for the disadvantaged, 584 voluntary day-care centres (VDCC), three leprosy centres, and 12 separate religious
organizations. UNICEF assists 36 VDCCs and has helped to introduce health and nutrition education to the parents of children under 3 years.

Following the civil unrest in 1988, a number of emergency relief programmes were carried out through a local NGO. These included food assistance mainly for the Chin Hills population, and the distribution of medical supplies provided by the Federal Republic of Germany, AIDAB and UNICEF. From November 1988 to February 1989 over 100 metric tons (valued at US $1.3 million) were distributed to reach all basic health centres in the 314 townships of the country.

**Implications for human settlements**

The condition and potential of human resources influence the social, cultural and economic productivity of human settlements. Education standards affect employment patterns, and, in turn, the demand for services. The comparatively high standards of education throughout the country and particularly in urban areas, reacting with modernization trends within a more open society, will have a major impact on expectations and aspirations. Changing priorities in response to a wider range of choices are likely to affect dramatically the quality of life in the major cities, with both positive and negative results. The introduction of PHC services in border states will influence behavioural patterns, which will then gradually result in changes in housing conditions, and in the demand for better water, sanitation and power supply. The well-established mutual-support systems, the role of the religious establishment and the existing national NGO framework, all provide a promising basis for the development of strong community organizations within a restructured, participatory local administration.
PART C. DEVELOPMENT CO-OPERATION

C.1 General programme

The most recent analysis of development co-operation, which brings together the programmes of multilateral and bilateral donors, is the UNDP Report for 1988. This report includes some basic country data in addition to information on on-going and planned technical and capital assistance. Profiles on the main donors are also provided.

The total value of development co-operation rose to US$44,226,000 in 1988, following a marked decline from about US$82 million in 1982, down to about US$39 million in 1987. Table C.1.1 indicates the sectoral distribution trends for technical assistance. Health, and agricultural, forestry and fisheries consistently account for the highest shares, followed by industry, and transport and communications. Human settlements, which is difficult to classify using conventional sector categories, is at the lower end of the range.

Table C.1.1 Sectoral distribution trends for technical assistance (disbursement base) (percentage)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<td>Political affairs</td>
<td>0.02</td>
<td>0.01</td>
<td>0.04</td>
<td></td>
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<tr>
<td>General development issues, policy and planning</td>
<td>3.86</td>
<td>4.26</td>
<td>2.23</td>
<td>2.63</td>
<td>9.3</td>
<td>5.62</td>
<td>5.48</td>
</tr>
<tr>
<td>Natural resources</td>
<td>4.88</td>
<td>4.86</td>
<td>8.27</td>
<td>7.38</td>
<td>5.7</td>
<td>0.16</td>
<td>4.26</td>
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<tr>
<td>Agriculture, forestry and fisheries</td>
<td>17.17</td>
<td>28.32</td>
<td>29.21</td>
<td>19.65</td>
<td>33.3</td>
<td>17.01</td>
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<tr>
<td>Industry</td>
<td>12.68</td>
<td>4.15</td>
<td>11.49</td>
<td>12.99</td>
<td>3.2</td>
<td>11.77</td>
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<td>Transport and communication</td>
<td>19.6</td>
<td>8.81</td>
<td>4.54</td>
<td>7.92</td>
<td>8.2</td>
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<tr>
<td>and development finance</td>
<td>0.18</td>
<td>2.23</td>
<td>8.27</td>
<td>31.27</td>
<td>31.27</td>
<td>27.63</td>
<td>35.09</td>
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<tr>
<td>Population</td>
<td>0.06</td>
<td>1.07</td>
<td>0.59</td>
<td>0.47</td>
<td>0.2</td>
<td>0.38</td>
<td>0.28</td>
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<tr>
<td>Human settlements</td>
<td>0.01</td>
<td>0.27</td>
<td>0.29</td>
<td>0.27</td>
<td>0.3</td>
<td>0.09</td>
<td>0.08</td>
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<td>Health</td>
<td>25.21</td>
<td>32.66</td>
<td>31.27</td>
<td>31.27</td>
<td>27.63</td>
<td>35.09</td>
<td>23.93</td>
</tr>
<tr>
<td>Education</td>
<td>2.95</td>
<td>3.05</td>
<td>7.51</td>
<td>9.07</td>
<td>2.1</td>
<td>3.48</td>
<td>9.61</td>
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<td>Employment</td>
<td>0.38</td>
<td>0.01</td>
<td>0.54</td>
<td>0.82</td>
<td>0.03</td>
<td>0.17</td>
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<td>Humanitarian aid and relief</td>
<td>5.51</td>
<td>4.12</td>
<td>0.43</td>
<td>0.5</td>
<td>0.28</td>
<td>2.90</td>
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<tr>
<td>Social conditions and equity</td>
<td>2.09</td>
<td>1.38</td>
<td>2.33</td>
<td>2.91</td>
<td>3.95</td>
<td>6.8</td>
<td>5.79</td>
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<tr>
<td>Culture</td>
<td>4.09</td>
<td>4.89</td>
<td>0.6</td>
<td>0.31</td>
<td>0.48</td>
<td>1.7</td>
<td>1.13</td>
</tr>
<tr>
<td>Science and technology</td>
<td>1.92</td>
<td>1.06</td>
<td>1.02</td>
<td>4.64</td>
<td>4.2</td>
<td>9.65</td>
<td>1.59</td>
</tr>
</tbody>
</table>


The Mission carried out a search of all assistance, relying heavily on the UNDP 1988 Report and supplementary UNDP documentation. Interviews were also held with other agencies. Adopting a broad definition for the human settlements sector, an inventory of 68 projects was identified, covering both technical and capital assistance. This was sorted by agency and by human settlements sub-sector. The detailed inventory is presented in annex II. A summary of the results of the exercise is set out in table C.1.2. The selection includes on-going and planned projects as of 1988, plus those which were in the process of being formulated and/or revised during 1989 and early 1990.
The overall United Nations system delivery in 1988 was worth $US26.2 million, of which UNDP accounted for $US11.3 million, with a remainder of $US14.9 million. Of the other agencies, major disbursements were by UNICEF with $US5.6 million, UNCDF, $US2.3 million, and WHO, $US2.8 million.

The UNDP Fifth-Country Programme, 1987 to 1991, allocated total resources of $US 65,514,000. At the Burma Aid Group meeting in 1986, the Government presented a list of priorities. Strong preference was expressed for technical assistance in the following four areas:

(a) Development of an indigenous research capacity in the key sectors of the economy;
(b) Identification of investment opportunities and preparation of feasibility studies;
(c) Equipment and expertise in selected fields of advanced technology;
(d) Training, specifically in-country programmes.

### Table C.1.2 Human settlements-related project Inventory summary

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number of projects</th>
<th>Contribution $US</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDP</td>
<td>24</td>
<td>41,257,242</td>
</tr>
<tr>
<td>UNCDF</td>
<td>7</td>
<td>23,600,000</td>
</tr>
<tr>
<td>UNICEF</td>
<td>8</td>
<td>8,108,300</td>
</tr>
<tr>
<td>UNFPA</td>
<td>2</td>
<td>4,130,000</td>
</tr>
<tr>
<td>ESCAP</td>
<td>2</td>
<td>3,177,300</td>
</tr>
<tr>
<td>World Bank/IDA</td>
<td>4</td>
<td>122,000,000</td>
</tr>
<tr>
<td>WHO</td>
<td>3</td>
<td>1,400,000</td>
</tr>
<tr>
<td>AsDB/OPEC</td>
<td>2</td>
<td>35,007,960</td>
</tr>
<tr>
<td>USAID</td>
<td>1</td>
<td>9,500,000</td>
</tr>
<tr>
<td>AIDAB</td>
<td>2</td>
<td>40,272,720</td>
</tr>
<tr>
<td>EEC (joint with UNICEF)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>1</td>
<td>7,415,000</td>
</tr>
<tr>
<td>Finland</td>
<td>1</td>
<td>54,000</td>
</tr>
<tr>
<td>Israel</td>
<td>1</td>
<td>15,731,000</td>
</tr>
<tr>
<td>Japan</td>
<td>6</td>
<td>6,750,000</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Singapore</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>311,827,452</strong></td>
</tr>
</tbody>
</table>

**By human settlements sub-sectors**

<table>
<thead>
<tr>
<th>Sub-sector</th>
<th>Number of projects</th>
<th>Contribution $US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban planning, development and management</td>
<td>12</td>
<td>54,846,602</td>
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<tr>
<td>Water supply/sanitation</td>
<td>20</td>
<td>118,547,590</td>
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<tr>
<td>Integrated rural/urban</td>
<td>10</td>
<td>18,604,070</td>
</tr>
<tr>
<td>Planning and development</td>
<td>6</td>
<td>171,338,900</td>
</tr>
<tr>
<td>Environment</td>
<td>7</td>
<td>87,415,000</td>
</tr>
<tr>
<td>Construction industry/materials development</td>
<td>3</td>
<td>2,899,000</td>
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<tr>
<td>Transport</td>
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<td>-</td>
</tr>
<tr>
<td>Statistics/data management</td>
<td>7</td>
<td>9,721,830</td>
</tr>
</tbody>
</table>

**Notes:**

a For 1 project
b Total contribution is approximate, taking account of some double counting between UNDP projects and technical assistance components in a capital project.

c Some projects merged where joint funding.

**Source:** UNCHS (Habitat) Sector Review Mission.

### C.2 United Nations system

The overall United Nations system delivery in 1988 was worth $US26.2 million, of which UNDP accounted for $US11.3 million, with a remainder of $US14.9 million. Of the other agencies, major disbursements were by UNICEF with $US5.6 million, UNCDF, $US2.3 million, and WHO, $US2.8 million.

The UNDP Fifth-Country Programme, 1987 to 1991, allocated total resources of $US 65,514,000. At the Burma Aid Group meeting in 1986, the Government presented a list of priorities. Strong preference was expressed for technical assistance in the following four areas:

(a) Development of an indigenous research capacity in the key sectors of the economy;
(b) Identification of investment opportunities and preparation of feasibility studies;
(c) Equipment and expertise in selected fields of advanced technology;
(d) Training, specifically in-country programmes.
In assessing the previous Country Programme, opportunities for improvement were identified in the following:

(a) Project design and preparation of project documents;
(b) Faster processing of training components and project documents;
(c) Equipment components.

The Fifth Countries Programme focuses on four themes:
(a) Modernization of the agricultural sector;
(b) Development of agro-industry;
(c) Development of physical infrastructure;
(d) Development of social infrastructure.

The only specific mention of human settlements activities in the programme document is under "linkages in social infrastructure". The UNCHS (Habitat)-executed Rangoon City and Regional Development Project is referred to with respect to associated contributions from a bilateral donor.

The UNDP mid-term review in 1989 took account of the effects of the 1988 civil unrest, of the move from a centrally-planned economic management system towards a market-oriented economy, of the exercise undertaken with support from the United Nations system to identify the new assistance needs in facilitating the economic transition, and the designation of Myanmar as a least developed Country. In response to the changing situation, technical assistance was seen to be needed in improvements to:

(a) Resource-use evaluation;
(b) Resource-use planning and management;
(c) Resource-use efficiency.

The review noted that government strategies had not yet been articulated to the point where generalized policies could be translated into specific programmes. With this in mind, it was decided that the major reassessment of UNDP assistance for undertaking the transformation should be addressed in the next Country Programme starting in 1992. However, several adjustments were incorporated into the Fifth Country programme. New education projects redressed imbalances in social infrastructure, and a new area of concentration, economic policy and management, was introduced. Again, no specific reference to human Settlements was made, although in the three resource-related improvements listed above, areas of direct relevance are surveys, inventories and data collection under item (a), land-use planning under (b), and access of the private sector to government-sponsored research facilities, results and training programmes under (c).

Out of the 24 UNDP human settlements-related projects identified by the Mission, four are considered as key contributors to the sector. These are:

(a) BUR/85/016; Yangon City and regional development, phase II;
(b) MYA/86/012; Programme of pre-investment and investment assistance, Phase IV (Umbrella);
(c) MYA/88/045; Institutional strengthening of infrastructure agencies;
(d) MYA/88/047; Umbrella support for UNCDF investment programme.

Each project is discussed in detail in section C.5.
As a result of the decision by the United Nations General Assembly to designate Myanmar as an LDC, the country became eligible for UNCDF capital assistance. In consultation with the Government, missions in 1988 and 1989 identified a programme expected to amount to around $US 25 million. Human settlements-related capital assistance within this programme consists of urban housing and water supply, together with four projects supporting rural resettlements and arising from the Government's requests for border development assistance.

The UNICEF programme is next in importance to UNDP in terms of disbursement levels. The period during which operations were suspended provided an opportunity to refocus programmes. One example is the integration of water supply, latrine construction, and health education pilot programme in three townships. Following the successful logistic operations in the distribution of emergency medical supplies in 1988, special efforts were made to clear stockpiles. Food-assistance activities in 1988 covered 93,000 families; remaining funds were subsequently used in child-feeding programmes in Yangon. These programmes were linked to child-weighing and health-education activities. The main UNICEF areas of sustained support are in: health and nutrition, water supply and sanitation, education, women in development, and surveys and evaluations. As the first step towards formulation of the next UNICEF country programme, 1991 to 1994, an analysis of the situation of children and women in Myanmar is being carried out. Early indications are that the emerging priorities over the next 10 years will be:

(a) Strengthening the local capacity for the production of essential drugs and vaccines;
(b) Enhancing the capacity of MOH to train auxiliary midwives;
(c) Improving and expanding child-growth monitoring, and use of data;
(d) Integrating priority MCH and safe motherhood interventions with UCI;
(e) Strengthening and monitoring the substantive aspects of primary education;
(f) Advocating the integration of water supply, sanitation, and health education, and expanding low-cost appropriate technology applications;
(g) Increasing the local capacity for the manufacture of handpumps and latrine pans;

Items (f) and (g) have direct relevance to human settlements, particularly in the context of the large-scale urban resettlement programmes begun by the Government in 1989. In the inventory of sector-related projects identified by the Mission, the UNICEF component is mainly concerned with water supply and sanitation, and health education.

The WHO and UNFPA projects which contribute to the human settlements project inventory cover environmental health and vital registration. Further sector-related inputs have been made by ESCAP in training and seminar activities in support of Multi-purpose Development Planning for River Basins and Urban Development Planning.

G.3 Other multilateral agencies

The other main multilateral agencies contributing to Myanmar's development co-operation programmes are the World Bank and the Asian Development Bank (AsDB), with disbursements in 1988 of $US56.6 million and $US33.3 million respectively. Total World Bank-committed capital assistance is $US394,465,000 concentrated in natural resources, industry,
and transport and communications. AsDB has $US293,639,000 committed in the same sectors, with the addition of health.

The World Bank country assistance strategy seeks to address Myanmar's long-term development constraints through: (a) supporting foreign earnings by viable export promotion and import substitution, by improving production of export commodities and rehabilitating associated infrastructure; (b) encouraging more liberal use of incentives to reward efficient production and management in both public and private sectors, and (c) assisting in strengthening and modernizing implementing institutions.

The key contribution to the human settlements sector is the Infrastructure Rehabilitation Project, negotiated in 1988, with an IDA credit of $US45 million. This is described in detail in section C.5.5. The approved 1990-1994 country programme includes a Phase II of Infrastructure Rehabilitation for 1994 with a provisional loan amount of $US 160 million. Under "other items", municipal infrastructure and housing are indicated for 1993 and 1994 respectively.

Further projects indirectly supporting human settlements are wood industry (I and II), and construction industry/road rehabilitation.

In the AsDB development outlook report for the region, the most pressing policy reforms are considered to be the decontrol of prices of cash crops, decentralization of production decisions in agriculture, decontrol of prices of industrial inputs and outputs, and liberalization of private activities in the industrial sector. Administrative measures and institutional strengthening are seen to be indispensable for the successful implementation of these reforms.

AsDB has two urban infrastructure projects for water supply in Yangon and Mandalay with a combined total loan amount of $US35 million. Of particular importance to the human settlements sector is the AsDB Water Supply and Sanitation Sector Profile, February 1988.

Other multilateral contributions to the human settlements sector are from EEC joint funding with UNICEF on a project on rural water supply, and OPEC joint funding with AsDB on the Yangon and Mandalay urban water-supply projects.

C.4 Bilateral donors

Total bilateral technical assistance in 1988 amounted to $US18 million, while capital assistance committed was $US1435 million. The major donors are Australia, France, the Federal Republic of Germany, Japan, and the United States of America. Technical assistance is concentrated in natural resources, industry, and agriculture, forestry and fisheries. With the addition of transport and communications, and health, a similar sectoral distribution applies to bilateral capital assistance.

Bilateral items in the inventory of human settlements-related projects drawn up by the Mission are dominated, in terms of cost, by the AI DAB rural water project, the Japanese seven-towns water project and the Finnish wood industry project.
C.5 Specific projects

C.5.1 Rangoon City and Regional Development - Phase II (BUR/85/016/H/01/56)

Project data

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<thead>
<tr>
<th>Primary function</th>
<th>Direct support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary function</td>
<td>Institution building</td>
</tr>
<tr>
<td>UNDP sector</td>
<td>Human settlements</td>
</tr>
<tr>
<td>Government implementing agency</td>
<td>Housing Department, Ministry of Construction</td>
</tr>
<tr>
<td>Executing agency</td>
<td>UNCHS (Habitat)</td>
</tr>
<tr>
<td>Government inputs: Direct</td>
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<td></td>
<td>K16,500,000</td>
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<tr>
<td>UNDP inputs Full-scale</td>
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<tr>
<td>Preparatory Assistance</td>
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</table>

This project has been formulated as an extension of a first phase which undertook a comprehensive physical, social and economic planning approach, wherein detailed studies in housing, transport, infrastructure and urban renewal formed the basis for the Rangoon Structure Plan. The impressive array of outputs, as listed in annex IV, provides an important multi-sectoral database for the city. Although the structure plan has not been formally adopted, the project has influenced design standards for subsequent large-scale sites-and-services schemes, the Government's new approach to cost-recovery measures, and the formulation of the World Bank infrastructure rehabilitation project. The metropolitan regional scope of the first phase was however adjusted during the project to provide a concentrated focus on Yangon City as opposed to the Division.

The aim of the second phase (in the words of the project document) is to demonstrate improvement measures in the most critical sectors and to propose larger-scale activities in order to prevent future deterioration. The four priority areas identified, all of which form continuations of project components in the first phase, are:

(a) **Planning** - through the widening and refinement of the structure plan, involving division-level planning, local plans, policy guidelines, pre-investment studies, and training;

(b) **Housing** - through strengthening the Government's role as housing supply enabler and the development of appropriate construction materials and components, involving demonstration housing projects, and the installation of modular timber and clay roofing tile workshops;

(c) **Urban renewal** - through the demonstration of cost-recovery principles, related credit systems and conservation measures, involving a pilot project for buildings in the historic central area and preparation of larger-scale rehabilitation programmes;

(d) **Infrastructure** - through improvements to existing human-waste management systems incorporating cost-recovery mechanisms, involving a pilot project for alternative technology, including small-bore sewerage;

The project strategy is based on the assumption that widespread replication will result from the demonstration effects of pilot activities. Some 40 percent of the project budget is allocated to non-expendable equipment, most of which is for construction materials and workshop equipment. Expert inputs are made up of separate individual consultants. A CTA is allocated.
39 working months, with a Timber House Production Specialist 9, a Clay-tiles Production Specialist 8, a Housing Economist 3, and an Urban Sanitation Consultant 3, plus five months for unspecified consultants.

The project will be attached to the Urban and Regional Planning Division of the Housing Department of MOC. All counterparts will be personnel within this Division.

In the pre-1988 context, these project-design issues were debatable and strong arguments could be made for the progressive development of outputs commenced during the first phase. However, the current situation is such that the proposed outputs and the institutional framework have been overtaken, not to say swamped, by events. The scale of the present Government's squatter resettlement programme for Yangon (discussed in part D) negates the potential for the effects of a pilot scheme on city-wide programmes. The Government has already commenced work on central area rehabilitation. The liberalization of the economy, and the resultant demand for joint ventures involving risk capital from several South-East Asian countries, opens up the construction-materials industry to private-sector initiatives. Legislation enacted in May 1990 removes key planning and development functions from the Housing Department to the Yangon City Authority under a different Ministry. The critical sanitation conditions arising from the haste in which the resettlement programme is being implemented shifts the priority focus from inner-city experimental sewerage to large-scale emergency on-plot waste management throughout the new peri-urban townships. The recent events do, however, intensify the need for the review of the structure plan proposed in the project, but geared to a broad-based urban-management approach which addresses institutional links, municipal finance, land administration, and operations and maintenance issues. Recommendations on project reformulation, taking account of present conditions, are included in part F.

Although the project is active, due to delays in obtaining governmental approvals UNCHS (Habitat) had not recruited the CTA and other experts as of May 1990.

C.5.2 Programme of Pre-Investment and Investment Assistance, Phase IV (Myanmar Umbrella IV)(MYA/86/012/A/01/42)

Project data

<table>
<thead>
<tr>
<th>Primary function</th>
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<tr>
<td>Secondary function</td>
<td>- Training</td>
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<tr>
<td>UNDP sector</td>
<td>- General development issues; policy and planning</td>
</tr>
<tr>
<td>Government implementing agency</td>
<td>- Ministry of Planning and Finance</td>
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<tr>
<td>Executing agency</td>
<td>- World Bank/UNCHS (Habitat)/DTCD</td>
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<tr>
<td>Government inputs (in kind)</td>
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<td>UNDP inputs</td>
<td>- $US3,000,000</td>
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<td>Duration</td>
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<tr>
<td>Initial estimated starting date</td>
<td>- April 1990</td>
</tr>
<tr>
<td>Signed</td>
<td>- Expected mid 1990</td>
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</table>

This project is designed to promote the optimum allocation of resources for financing investments, and to attract additional external capital
assistance. The subprojects initially identified, which will involve investment preparation activities are: Port Development Study for Thilawa Port, Comprehensive Transport Study (whole country), Water and Sanitation Sector Review (whole country), and Yangon Traffic Engineering Study. In the process of producing these outputs, the counterpart institutions will be strengthened in project preparation through on-the-job training and at workshops and seminars, both in-country and abroad. Ninety-three percent of the project is allocated to subcontracts for the four subprojects and for as yet unidentified topics.

The project is the fourth in the series of multi-sectoral "umbrella" projects, pioneered by UNDP in Myanmar. This approach accelerates technical-assistance-project processing and enables programmes of bankable investment options to be formulated within a co-ordinated process and a common time-frame.

Both the water and sanitation, and traffic engineering components will make significant contributions to the human settlements sector. The most recent World Bank mission, in March 1990, reported that the terms of reference for these studies require updating. Given the national impact of the 1989/90 resettlement programmes, the current UNCHS (Habitat) Mission recommends that attention be given to the upgrading of conditions in these new communities incorporating recent UNICEF experience in the integration of water supply, sanitation and health education.

A conspicuous absence in the project document is any reference to the 1988 AsDB Water Supply and Sanitation Sector Profile, the terms of reference for which overlap the study included in project MYA/86/012.

C.5.3 Institutional Strengthening of Infrastructure Agencies (MYA/88/045/ A/01/42)

Project data

Primary function - Institution building
Secondary function - Training
UNDP sector - Transport and communications
Government implementing agency - Ministry of Transport and Communications
Executing agency - World Bank
Government inputs (in kind) - K2,800,000
UNDP inputs - $US1,900,000
Duration - 4 years
Initial estimated starting date - November 1988
Signed - Expected mid-1990

This project will provide training and analytical support to five government agencies responsible for transport and urban services, with particular emphasis on equipment maintenance and cost accounting. The agencies concerned are:

- Inland Water Transport Corporation
- Myanmar Railways Corporation
- Road Transport Corporation
- Yangon City Development Committee (YCDC)
- General Affairs Department (GAD)
Consultants will be commissioned, mainly through subcontracts, for 14 advisory and training subprojects, which account for 93 per cent of the budget.

The YCDC and GAD components are those which make direct inputs to the human settlements sector. These agencies will benefit from the following six subprojects:

- Unaccounted for water management programme (YCDC)
- Overseas training for cost accountants (YCDC)
- Training with overseas agencies (YCDC)
- Training for workshop staff (YCDC/GAD)
- Overseas study visits for water supply and sanitation technology (YCDC/GAD)
- Project monitoring and data management system (GAD)

Beneficiary populations will be those in Yangon and in the secondary towns for which GAD has financial, administrative and technical support responsibilities. The largest subproject in terms of value is the YCDC unaccounted for water management programme, with an allocation of $US400,000, and for which UNCHS (Habitat) has been designated the executing agency.

C.5.4 Umbrella Support Services for UNCDF Programme (MYA/88/047/A/01/31)

**Project Data**

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Under this project, pre-investment and design studies together with implementation assistance will provide support services for a planned package of UNCDF capital assistance in the order of $US25 million. The package will consist of eight projects, concentrating on rural development. Of these, four will be addressed in the initial preparatory assistance phase. The remaining projects, which will have important implications for rural settlements planning, are part of a proposed border development programme for which further clarification is awaited from the Government.

Pre-investment and project formulation missions account for 66 percent of the preparatory assistance budget of which $US32,000 is allocated for plastic-pipe production, $US32,000 for pump production, and $US40,000 for sites-and-services for low-cost housing. The latter component, which is of special interest to the human settlements sector in the light of the 1989/90 resettlement programmes, involves the production by late 1990 of reports on
the identification of priorities, the technical characteristics of the proposed housing project, the feasibility for a small-loan programme, together with a draft project appraisal document. An amount of $US2 million has been provisionally allocated for the UNCDF capital assistance to housing.

C.5.5 Infrastructure Rehabilitation Project, Phasell (World Bank 7282-BA)

This project was initially appraised in August 1988, and is now scheduled for reappraisal during the second half of 1990. The objectives of the project are: (a) to contribute to the rehabilitation and better maintenance of existing transport and urban infrastructure; and (b) to initiate a programme of policy and technical improvements through a series of studies. An IDA credit of $US45 million (subject to adjustment during reappraisal) will fund the import of materials and spare parts to be allocated as follows:

- Ships and dockyard rehabilitation 22 per cent
- Locomotive and rolling stock rehabilitation 20 per cent
- Bus and truck rehabilitation 9 per cent
- Infrastructure rehabilitation in Yangon 28 per cent
- Rehabilitation in other towns 21 per cent

Within the overall financing plan is a UNDP contribution, inclusive of contingencies, of $US5 million. This includes the UNDP projects BUR/85/015 and MYA/86/012, which are incorporated as integral components of the total project.

Human settlements-related components for Yangon are composed of: (a) rehabilitation of water mains, distribution pipes, valves, pumps and tubewells; (b) rehabilitation of sewer mains and supply of maintenance equipment; (c) solid-waste management assistance, consisting of rehabilitation of garbage trucks and gully emptiers, and the supply of tools and workshop equipment; and (d) road rehabilitation, strengthening road-maintenance capabilities and improving traffic management.

The UNCHS (Habitat) Mission’s comments on the UNDP technical assistance projects supporting this infrastructure rehabilitation project apply equally to the selection and scale of investment components. The 1989/90 accelerated public works programmes, which are dominated by land development for urban resettlement areas, also include major new roads and road improvement projects throughout Yangon, Mandalay and the secondary towns. The sudden increase in the operations and maintenance burden, particularly where drastic changes in urban population distributions are concerned, strongly suggests a reordering of priorities for both YCDC and GAD.

The Appraisal Report, dated August 1988, includes the initial terms of reference for the national-level study for water and sanitation. Although there is a reference as a source in a table, the text omits to mention the AsDB parallel study dated February 1988.
D.1 General profile

The urban sector is characterized by slow population growth in relation to the national rate, by a high share of the overall population for a rural-based society, by the dominance of Yangon, and the concentration of the urban population in low-lying divisions as opposed to the mountainous states forming the border zones. A further feature, identified in discussions and not documented, is the close interdependences of towns and their hinterlands, and a resultant less marked urban/rural dichotomy than is emerging in other Asian countries.

The current estimate for annual urban growth is about 2.3 per cent compared to 1.9 per cent nationally. The United Nations projection for the average low-income centrally planned economies, with the exception of China, for 1980-1990, is 4.7 per cent. The 1980 figure for the average share of urban populations for the same group of countries is 17.3 per cent, compared with Myanmar’s 24 per cent at the time of the 1983 Census. Yangon accounts for 30 per cent of the urban population, followed by Mandalay with 6.3 per cent. Figure D.1.1 shows the 10 urban centres with populations over 100,000. The divisions cover 40 per cent of the total land area, 69 per cent of the total population and 76 per cent of the urban population.

The definition of an urban centre is not mentioned in the 1983 census reports. However, in interviews with GAD, the key organization with respect to local-administration responsibilities, it was established that 288 centres have urban status within the provisions of the Towns Act and the Municipal Act. The Towns Act may apply to centres of less than 10,000, where administrative offices are located, and with densities and functions of a sufficiently urban nature for urban wards (as opposed to rural village tracts) to be introduced. According to GAD, municipalities have over 10,000 population. Under the Act, there are wide powers for raising revenues, including property-based taxation, and 15 main categories of urban functions, covering planning, development control, implementation and management of urban physical and social services. Of the 288 urban centres, 169 have municipal status and 119 town status. The average population size of an urban centre is about 33,000 and that for the national total of 2190 wards, about 4300. Thirty centres had over 50,000 population according to the 1983 census.

Age distribution in 1983 within the urban sector shows a young population, with 36 per cent under 15 years. When compared with the rural distribution, there is a marked bulge in the 10 to 24 urban age groups.

Under- or unemployment in the urban sector was recorded in the 1983 census (in terms of those reported as seeking work) as 3.7 per cent of the labour force, compared with only 1 per cent in rural areas. Persons with agricultural occupations in urban areas were recorded as 11.6 per cent. Agriculture-related industry is the largest industrial occupation category, with 13.2 per cent of urban industrial employment and 80.4 per cent of rural. Female employment sources throughout urban centres are dominated by the wholesale and retail trades, hotels and restaurants.

With the exception of externally-funded projects, towns and municipalities have, until recently, financed current and capital expenditures from their own revenues. Central government transfers, as grants, commenced in the
Figure D.1.1 Main Urban Centres

1994 estimates, using 1973-83 annual average I growth rates (%)

1. Yangon 3,000,000 (2.0)
2. Mandalay 1,000,000 (2.4)
3. Moulmein 280,000 (2.5)
4. Rangoon 172,000 (1.9)
5. Pathein 158,000 (1.3)
6. Taunggyi 144,000 (2.7)
7. Monywa 126,000 (2.6)
8. Sittwe 127,000 (2.6)
9. Mawlamyine 117,000 (2.8)
10. Mergui 107,000 (2.7)
Figure D.1.2 Comparative areas of cities

Source: ESCAP, Physical Profiles of Cities in the ESCAP Region, 1982
(population data from late 1970s, early 1980s)
Yangon and Mandalay added in 1983.
current (1990/91) financial year. GAD, which, with the exception of Yangon, has the responsibility for supervising local administrations and reviewing budgets, has given an indicative figure of K 350 million (excluding Yangon) for the present annual revenue of all townships, covering both the urban and rural components. Annual urban sector budget totals are not readily available, although GAD maintains that by far the majority of the quoted figure is urban-based. A recent amendment to the Municipal Act provides for increased taxation levels, specifically for the Vehicle or Wheel Tax. The effect of this has been to increase the provisional total revenue estimate for 1991/92 to K500 million. The largest single source of revenues is that covering fees, rentals and other charges from markets and slaughterhouses.

As an approximate guide to urban budget levels, inclusive of Yangon, the official government report for 1989/90 records allocations for current expenditure by town and city development committees as K298 million for current and K201 million for capital expenditure. It should be noted, however, that, under the current Government, programming and budgeting has been affected by short-term measures which are not necessarily predicted in annual financial planning or reported in accordance with the standard sector allocations.

In order to provide a regional context for the form and size of the two major centres, Yangon and Mandalay, Figure D.1.2 has been prepared using graphics adapted from an ESCAP report.

D.2 Housing department

D.2.1 Introduction

As mentioned in the Section of Part B dealing with the institutional framework, the HD plays a dominant role in the Human Settlements Sector, and specifically in urban planning, land development and housing management. Although the mid-1990 new legislation, see Annex G, has significantly reduced the role of HD, a description of previous responsibilities and performance provides a necessary background to any review of current urban programmes and to the formulation of future projects. A thorough analysis of the operations of the HD was carried out under the UNCHS (Habitat)/UNDP Rangoon City and Regional Development Project (RCRDP), together with assessments of housing policies and programmes. This work is summarized in the following Sections and supplemented by material obtained by the Mission which reflects the situation as at mid-1990.

D.2.2 Institutional history

During the colonial period, public-sector housing was constructed by the Public Works Department as tied staff quarters assigned according to rank. Rental levels were based on building costs recovered over 75 years at a 3 to 5 per cent interest rate. Up to the present, rents have never exceeded K150 per month and have been usually in the order of K70-90. Private companies adopted similar arrangements for their employees. At independence all this stock was nationalized and transferred to the newly-established National Housing and Town and Country Development Board (NHB), and in some cases to the relevant ministries and public corporations. Under the NHB Act of 1951, the functions of the Rangoon Development Trust (RDT) were also assumed, resulting in a body which combined town and country planning, all stages in the housing-supply process, urban water supply and sewerage, and the administration of land within the Rangoon City boundary.
In 1965, responsibilities for the construction of houses was taken over by the Public Works Corporation, while NHB continued to plan, finance and manage housing. Through changes in name only (during 1974), NHB became HD and the Public Works Corporation became the Construction Corporation.

The development control powers inherited initially from RDT were expanded to cover all urban centres, and then transferred in 1974 to the Peoples’ Councils. Land administration was only for Rangoon, while water supply and sewerage was for all urban areas with the exception of Rangoon.

The current sanctioned establishment was approved in 1971. As a department, HD funding is through regular budgetary allocations; HD is not required to be self-financing and income is surrendered to the Central Government. Capital expenditure is currently around K 50 million per year and recurrent expenditure K 40 million. The Department now holds about 30,000 dwellings throughout the country, including apartments in multi-storey walk-up blocks. (This total may incorporate some serviced plots developed since 1985.) Revenues include K 10.5 million per year on land leases. House rents from public servants are in the order of K 16 million per year. Other revenues are tubewell licence fees and mapping certification (cadastal) fees. These recent figures should however be treated with caution. Up-to-date official records were not available for checking. The data were received verbally during a period of intensive activity during mid-1990 when HD was responding to the day-to-day pressures of the new Government immediately prior to the general elections.

In 1986/87 the dwelling units administered by HD accounted for around 17 per cent of the total public sector housing stock (see Section B.7. Other major developers and managers of housing were MOHRA, MOTC, MOAF and MOI (II).

The use of "housing" as the title of the department is a misnomer in the sense that the operations by 1990 were dominated by planning, land development, water supply, sanitation, and land administration. The Mission was advised that a new title "The Department of Human Settlements and Housing" was in the process of being approved by the Government, in conjunction with a reorganization and expansion.

The City of Yangon Development Law of May 1990 removes land administration to YCDC together with those planning, land development and housing operations specifically relating to the City.

D.2.3 Organization and staffing

The system of land, planning and estate subcommittees reporting to the higher-level Housing Committee, all of which included representatives from peoples’ councils and associations, was discontinued following the 1988 governmental changes. A Director-General, under the Minister concerned is the executive head, supported by directors of the following divisions. The number of Officer class staff in each division, as given to the Mission, is shown in brackets.

Urban and Regional Planning (11)
Urban Water Supply and Sanitation (10)
Land Administration (12)
The total staff strength including the 54 Officers is in the order of 1000. Under the proposed new organization, an additional 700 personnel at all levels has been requested.

Of particular importance to the formulation of future development co-operation programmes is the capacity of the Urban and Regional Planning Division, which is designated as the counterpart for the current UNDP/UNCHS (Habitat) project. The current divisional personnel strength is as set out below:

- Degree planners with at last 15 years’ experience and a minimum of a master level degree (5)
- Degree planners with at least 15 years’ experience, and with some overseas training (2)
- Professionals with around 7 years’ experience, and with a post graduate diploma in physical planning (4)
- Planning assistants with at least 15 years’ experience, and with some overseas training (2)
- Surveyors with at least 15 years’ experience (14)
- Surveyors with less than 5 years’ experience (8)
- Assistant engineers with at least 15 years’ experience (3)
- Draftsmen with at least 15 years’ experience, most of whom have engineering diplomas (22)
- Chief landscape gardeners (2)
- Landscape gardeners (33)
- Chief of Administration (1)
- Administrative staff (11)
- Office support (21)

This strength of 145 compares with the combined total of 93 Officer class professionals and other staff already sanctioned as counterparts for the UNDP/UNCHS (Habitat) project. Of the existing personnel, the project would absorb 27, and the remainder would need to be recruited. The latest position, as received by the Mission, is that the new posts to be sanctioned under the proposed expansion of HD include an increase of 80 per cent for this Division, including those for the project, but that an as yet undetermined number would now be transferred to YCDC.

D.2.4 Housing policies and programmes

Following the Second World War, the newly-independent Government launched a massive reconstruction programme which sought to replace destroyed or damaged housing stock. Along with education and health, housing was incorporated in the provisions of a welfare state as a subsidized social service available to all. Programmes were concentrated in Rangoon.
Around 6000 low-income temporary units were constructed by the then NHB plus smaller schemes for middle-income civil servants.

Insurgency movements and general insecurity during the 1950s led to high levels of migration. Rangoon's squatter population was over 300,000 by 1958, and it was recognized that the conventional housing solutions were no longer applicable. Satellite towns to the east of the city, incorporating sites-and-services plots, were rapidly developed in order to relocate 62,000 households. From then until the mid-1980s, the numbers of conventional civil servants' housing as constructed by most departments and corporations continued to increase, until the current total of around 170,000 for the whole country was reached. HD, as the leading body responsible for housing initiatives, introduced several schemes including arrangements for outright sales, rental purchase and rental units in walk-up apartment blocks. However, HD performance was poor, resulting in an average production by 1984 of 130 units per year over the previous 20 years. The combined performance of all other departments and corporations in supplying housing to their own employees was comparatively high. The figure for 1980/81, for example, was around 8000. The work of the RCRDP team tended to underplay this national-level programme, while concentrating on the operations of HD. In 1985/86, sites-and-services schemes were reintroduced, mainly for fire victims, but in this case plots were also developed for the middle and upper levels of the public service.

The formal private-sector housing system consisted of individually constructed dwellings, restricted to wealthy households, on serviced plots, usually within the existing high-income housing areas, and using licensed engineers and/or architects. Up to 1989, there were no private housing developers. Small contractors undertook labour-only or labour-plus-material-delivery contracts. Private financing was not institutionalized; households invested personal savings or took loans from friends or relatives. By the mid-1980s, an average of between 100 and 200 formal housing applications were being processed each year in Rangoon by the then RCDC.

The informal housing market was characterized by individual initiatives for owner-occupation or renting, by temporary construction materials and inadequate servicing, and by the construction of multi-storey blocks on private land with the developers selling the right of occupancy for units and surrendering one dwelling free of charge to the landowner. In Rangoon, the overall performance of this sector reached levels of up to 4000 a year by 1984.

According to the RCRDP reports, the situation in 1984 could be described as one in which a housing policy did not exist. As a result of negative experiences with costly and highly-subsidized programmes producing low outputs, the Government had ceased to consider the provision of housing as a priority issue. This was, however, in the context of a gradual but sustained build-up of squatters in Yangon and other cities at a scale matching that prevailing in 1958.

The RCRDP team working within HD estimated the backlog in the need for new and improved units in the capital to be in the order of 100,000, increasing by about 5000 a year.

The response to the conditions, as implemented by the new Government during 1989/90, is described in the following sections, both at the national
level and in some detail with respect to the two cities and selected secondary towns.

**D.3 Post-1988 urban works programme**

Through highly critical press reports, mainly based on limited site inspections and interviews with embassy personnel, international attention was focused during the early months of 1990 on the Yangon resettlement programme launched by the Government in 1989. The Mission found that the programme is not limited to Yangon, but has broad national coverage. The scale and characteristics of the land-development and other works was considered by the Mission to be of such overwhelming significance to the present and future urban situation that the Mission concentrated its resources on attempting to assemble a comprehensive record of the programme and assessing the impacts and implications.

The programme consists of: (a) land development for sites-and-services resettlement schemes, and for complete housing units for public servants; (b) new and improved roads; (c) urban rail transport; (d) road, rail and pedestrian bridges; (e) parks and gardens; (f) redevelopment for commercial and residential uses of sites cleared as a result of resettlement and fires; (g) clean-up campaigns, building renovations, and repainting of facades; and (h) rehabilitation of drains and water bodies.

Given the size of the population of the country overall and an urban population of less than 10 million, the scale of works within the time period allocated is probably unprecedented internationally. Based on visits to selected towns, analysis of maps and layout plans, and the data supplied by GAD and HD, the Mission estimates that the total population affected by the resettlement and new housing components is in the order of 1.5 million, or 4 per cent of the total population and 16 per cent of the urban population. Roughly 50 per cent of this number is in Yangon, Mandalay, Taunggyi and Bago, all centres visited by the Mission. A further 8 per cent is made up by 10 towns for which HD has prepared projects. According to GAD, about 80 per cent of all towns and municipalities have similar programmes. Using this advice, together with the average proportion of existing populations in the smaller towns for which new resettlement plots are provided (around 20 per cent) in schemes where layouts were made available, the national total has been calculated. This could, however, be on the low side; there is evidence that where HD prepared layouts, the ultimate scale of the works has been dramatically increased using local planning teams. For example, the HD project for Taunggyi was expanded from 4000 to 12,000 plots in this way by the Divisional LORC, without reference to HD.

Adopting gross average densities of around 7.5 plots or 45 persons per acre, based on plans inspected by the Mission, the total land area involved is in the order of 34,000 acres (13,700 ha) or 53 square miles (137 sq km).

The scope of the other components is difficult to quantify. However in Yangon alone, the value of new roadworks is K 250 million. In Mandalay a 35-mile urban light rail system has been installed. The entire Central Business District (CBD) of Yangon covering an area of 2.64 square miles had all facades repainted on the instructions of the military authorities, and 300 buildings renovated.

In interviews with government personnel and from press statements, the complete set of objectives for the programme can be summarized as follows:
(a) To implement large-scale home-ownership policies, shifting from rental to purchase schemes;
(b) To remove illegal land uses and provide new planned housing opportunities for the squatters relocated, involving serviced plots with security of tenure through 30-year leases;
(c) To reduce dramatically the waiting lists for public service housing;
(d) To reduce congestion, thereby improving public health conditions and reducing fire risks;
(e) To free important sites for public uses such as parks, and for commercial redevelopment;
(f) To obtain land for new roads and widened roads, and improve transport systems;
(g) To enhance the general physical appearance of urban areas;
(h) To improve the ability of the authorities to introduce better standards of law and order.

The total land-development estimates do not include projects commenced between 1985 and 1988 for fire victims, public servants' programmes and resettled squatters - 13,000 plots in Yangon, 5000 in Mandalay. If these are included, the population affected in the five-year period commencing 1985 increases by at least a further 75,000.

The post-1988 programme is by no means an innovation for the people of Yangon. It differs only in degree from earlier population redistribution measures. It replicates in motivation, implementation speed, management style, political climate, and development standards, the 1958-1960 squatter resettlement. Three new townships were then developed on what was at that time the periphery of the city. A total of 60,000 plots were provided in Thakita, and North and South Okkalapa. Although these areas still suffer from inadequate services, especially drainage and sanitation, they have merged into the socio-economic fabric of the city. They are fully occupied and have been described by United Nations experts (UNCHS (Habitat) project personnel) as successful urban development initiatives. What makes the current programme particularly significant is its increased scale, its national coverage and the incorporation of extensive schemes for public servants. It is also understandably a much more emotionally charged phenomenon, coming as a government reaction to the September 1988 events and in the context of the controversial lead-up to the elections in May 1990.

Detailed descriptions of specific components of the current programme are presented within the following sections devoted to profiles of selected urban centres. From the viewpoint of the overall situation, taking account of the statements from official government sources and from several donor representatives, and bearing in mind the limited resources available to the Mission, the following assessment may be made:

(a) The accelerated relocation without community consultations and adequate preparation has severely stressed the socio-economic conditions of the poorest households. Relationships between employment opportunities and housing have been strained. Daily transport costs have drastically increased. Although some squatters are public servants eligible for credit to purchase plots/houses or for construction materials, the majority are obliged to find downpayments of up to K 3500 for the plot, plus cash for materials and for assistance in the construction labour involved. Those who could not or would not resettle in the new peri-urban areas have been forcibly removed to rural areas (see sections D.4 and E.9). Life savings have been
drained and informal high interest debts have been incurred. Vulnerable
groups, such as single-parent families have been particularly hard-hit. In
several interviews with resettled families, the opportunity of owning a plot
was seen as a long-term advantage, providing a marketable asset to be later
sub-let in whole or in part, or sold off. This benefit, in most cases, however,
is likely to be offset by the immediate extreme hardships and by fears that
the expected long-term security of tenure through leaseholds may not be
formally granted.

(b) The scale of the programme, taken together with a timeframe which
has concentrated construction works within a nine-month period, has rapidly
increased demand for materials, labour and transport. Original estimates for
civil works have been exceeded. The embryonic private-construction
industry has suffered from an artificial financial climate where in some cases
extra money has been found by government regardless of budgetary
allocations and in other cases contractors have been obliged to continue with
little or no profit margins. Inflation in construction costs has affected both the
land-development components (initially priced at levels below all-in
estimated costs and now leading to even higher subsidies) and the
house-construction costs for sites-and-services allottees. A typical self-built
timber house, which with labour was costing K 30,000 at the end of 1989,
had risen to K100,000 by mid-1990.

(c) The layouts and subdivisions based on designs prepared by HD
employ principles and standards related to the work of UNDP/UNCHS
(Habitat) project BUR/80/005. The regular plot size of 40’ x 60’ can
accommodate two households, each with a 20’ frontage and with ample
space for the dwelling, for external domestic activities and the pit latrine.
Space provisions, in terms of road reserves, allocations for community land
uses and back access lanes to plots, are generous by international
standards. In most layouts inspected, drainage networks incorporating
bridges and culverts, have been planned and are in the process of being
implemented. The highest levels of water-supply provision are around 1
water point for 50 plots. In some areas this reduces to 1 per 80 plots and
there are cases where water is being transported to the resettlement areas
by tankers. Sanitation is the immediate responsibility of each household. Pit
latrines are the norm, although some households are constructing septic
tanks. There is access to the standard UNICEF latrine slab, concrete rings
and plastic pipes. Health and education services are planned, but are not
keeping pace with the rate of plot occupations. On paper, the resettlement
schemes compare favourably with international sites-and-services
experience. There are, however, critical defects which will result in severe
deterioration in the physical environment and in the quality of life generally.
The locations selected in Yangon are low-lying and adjacent to major water
courses. They are on poorly drained soils and subject to seasonal flooding
combined with tidal flows. Only the road surfaces are above flood levels.
Floor levels of many dwellings and latrine slabs are such that water will enter
buildings and latrines will overflow. The drainage systems are not
incorporated with flood protection and control. Drainage operations and
maintenance performance throughout the city was inadequate prior to the
current programme. There is already widespread evidence of waterlogging,
with high levels of pollution, in the new areas before the start of the mid-1990
rains. The impact of the sudden expansion of urban-management
responsibilities and the public-health implications resulting from the rapid
development of new and expanded townships with a total target population
in Yangon alone of around 500,000, has neither been examined nor
acknowledged by the authorities. Following the initial demonstration of
capital-investment capabilities, it is very likely that operations and
maintenance, and community development will be severely neglected. The
community mutual-support systems which have been dislocated by the forced resettlements will take time and assistance to re-establish themselves. It is unlikely that sufficient official finances will be available for constructing, equipping and operating health and education facilities to the extent required to match minimum basic needs. A massive mobilization at the national level of community-based resources, tapping voluntary initiatives, will be necessary if widespread, critically deteriorating conditions are to be avoided.

(d) The hastily planned resettlement and transport projects have, in some cases, followed urban structure plans prepared by HD. In all the urban centres affected (whether or not plans exist and whether or not projects are in accordance with these plans), the impacts are such that new physical, social and economic planning systems need to be urgently formulated and applied. Urban development priorities have been reordered. River bridges in Yangon, for example, and reorganized public transport to service new population distribution patterns, have become high-priority needs.

(e) Theoretically, an oversupply of serviced urban land should stabilize residential land values, housing prices and rental levels. However, given the distances of the new resettlement areas from the main commercial centres and from informal employment opportunities, there will be increased pressures on the remaining accommodation in the inner-city zones. The distorted financial structures, the parallel official and informal market economies, the closed information/statistics systems, and the recent sudden shift towards a more open mixed economy are all factors limiting the ability of planners and economists to predict the outcome of the programme on land and housing markets, and on the urban economy generally. To give some idea of the funds mobilized partly by government allocations and partly by residents' advance payments, the total national land-development cost using a low average estimate of K 4000 per plot (excluding land-compensation costs, off-site infrastructure and transport for resettlement) is estimated by the Mission at around K 1 billion, or $US 155 million at the official exchange rate. The published public capital expenditure allocations for the Town and City Development Committees for 1988/89 and 1989/90 are K 201 million and K 212 million respectively. Most of the land development expenditure was incurred in 1989/90, although work is still continuing. The K 1 billion estimate is equivalent to around 9 per cent of the total public capital expenditure budgets, all sectors combined (excluding defence), for 1988/89 and 1989/90 of K 12.1 billion. Whatever the analysis, the impacts will most certainly be widespread and will be felt over many years.

(f) Setting aside the negative aspects resulting from the manner in which the work has been implemented, the Mission sees the overall programme as a potentially promising (if currently fragile) national asset. Sensitively handled by a government which recognizes the role of community participation and acknowledges the urgency of remedial priority actions and the importance of self-sustaining operations and maintenance systems, the new townships could develop into balanced and well-managed communities. The major obstacle to implementing policies for mass home-ownership in most developing countries has already been bypassed. The nationalization of rural land under previous Governments allowed acquisition of urban peripheral areas quickly and at little financial cost. The ability of residents to construct their own dwellings without imposed design standards is recognized.

The effects on the urban environment through extensive tree felling for road widening will require urgent attention. Unnecessarily wide roads can be reduced with planted central reservations. Disputes over land-tenure rights arising from demolitions carried out mainly for road widening will need
sensitive handling through public enquiries. The new parks, for which entrance fees are charged, can be allocated to communities for recreational redevelopment in less of a sterile and monumental manner. Although often unco-ordinated within hasty programmes prior to the elections, the drainage and water body rehabilitation works carried out with mainly military labour are a positive foundation for improved operations and maintenance.

In part F, the Mission presents recommendations on how an expanded development co-operation programme could assist in the limitation of damage, and could support the Government’s efforts in achieving the full potential of the post-1988 urban interventions.

D.4 Yangon

D.4.1 Introduction

The city of Yangon serves as the centre of Government and dominates the urban sector in terms of population size, land area, financial, economic and tertiary educational activities. It is the major seaport and has the only international airport.

The Rangoon City and Regional Development Project (RCRDP) reached generalized conclusions on the role of the city in the national economy. Although the subsequent legalization of border trade and the moves towards liberalization of the economy are adjusting the economic geography and are generating rapid growth in other centres such as Mandalay and Taunggyi, the RCRDP estimates serve as a useful guideline in the absence of official statistics. An interpretation of data at the Yangon Division level suggested that the city accounted for 33 percent of the country’s value added, and that the per capita city income was three times the national average. Furthermore, it was calculated that Yangon accounted for 66 percent of industrial output, and that, as would be expected, the labour force is the most diversified, qualified and productive.

The main single source of data is the final report for the Rangoon City Structure Plan, June 1986. This was produced within HD under MOC, as the main output of the UNDP/UNCHS (Habitat)-supported RCRDP. Each of the relevant documents is listed in annex IV.

Using RCRDP material, census reports and material obtained by the Mission, a statistical profile of the city is first presented as a set of data lists in the following sub-section. This covers: land areas, land uses, populations, densities, housing and services, land administration, employment and education. (City-specific data on health conditions are not readily available.) A description is then provided of the organization and functions of YCDC, followed by notes on selected services. Finally an assessment of the 1986 structure plan is presented, supplemented by an account of the post-1988 land development and housing programme launched by the present Government. In annex I, the detailed findings of a survey of the land clearances associated with this programme is provided.
<table>
<thead>
<tr>
<th>Land property:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of acres:</td>
<td>2,220 acres (1983)</td>
</tr>
<tr>
<td>Number of acres leased:</td>
<td>1,961 acres</td>
</tr>
<tr>
<td>Number of acres farmed:</td>
<td>1,961 acres</td>
</tr>
<tr>
<td>Number of acres farmed leased:</td>
<td>1,961 acres</td>
</tr>
<tr>
<td>Registered farms (1984):</td>
<td>3,780</td>
</tr>
<tr>
<td>Registered farms (1985):</td>
<td>0</td>
</tr>
<tr>
<td>Registered farms (1986):</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSEHOLDS WITH ELECTRICITY CONNECTIONS (1983)</td>
<td>97.7%</td>
</tr>
<tr>
<td>HOUSEHOLDS WITH ACCESS TO POTABLE WATER (1983)</td>
<td>90.0%</td>
</tr>
<tr>
<td>HOUSEHOLDS WITH SEPTIC TANKS (1983)</td>
<td>8.0%</td>
</tr>
<tr>
<td>HOUSEHOLDS WITH SEPTIC TANKS SERVED BY PUBLIC SEWERAGE (1983)</td>
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</table>

<table>
<thead>
<tr>
<th>PERCENT</th>
<th></th>
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<tbody>
<tr>
<td>HOUSEHOLDS IN RESIDENCE ASSEMBLY AREAS (1990)</td>
<td>74.0%</td>
</tr>
<tr>
<td>HOUSEHOLDS IN RESIDENCE ASSEMBLY AREAS (1995)</td>
<td>70.0%</td>
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</table>

<table>
<thead>
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<th>Typeface:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>HOUSEHOLD SIZE (1990)</td>
<td>4.1</td>
</tr>
<tr>
<td>HOUSEHOLD SIZE (1995)</td>
<td>4.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSEHOLD SIZE (1990)</td>
<td>47.9%</td>
</tr>
<tr>
<td>HOUSEHOLD SIZE (1995)</td>
<td>47.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Housing:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOWN PUBLIC SERVICES</td>
<td>475,000</td>
</tr>
<tr>
<td>BANDHUA-PANDO (1983)</td>
<td>475,000</td>
</tr>
<tr>
<td>VEGETABLES</td>
<td>475,000</td>
</tr>
<tr>
<td>PERMANENT IN MIDDLE-TERM MATERIALS</td>
<td>28,000</td>
</tr>
<tr>
<td>PERMANENT IN HOUR-TERM MATERIALS</td>
<td>28,000</td>
</tr>
<tr>
<td>HOUSEHOLD SIZE (1993)</td>
<td>4.1</td>
</tr>
<tr>
<td>AVERAGE HOUSEHOLD SIZE (1993)</td>
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</table>

<table>
<thead>
<tr>
<th>Percentage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HOUSEHOLD SIZE (1993)</td>
<td>47.9%</td>
</tr>
<tr>
<td>HOUSEHOLD SIZE (1995)</td>
<td>47.9%</td>
</tr>
</tbody>
</table>
**Demographics**

| Sex ratio (1983) 100:73 males per 100 females |
|------------------|------------------|
| Under 15 years   | 1983 (estimated) |
| 15-29 years      | 1983             |
| 30-64 years      | 1983             |
| 65 years and over| 1983             |

**Population**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>1990</th>
<th>1983</th>
<th>1981</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>5-9</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>10-14</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>15-19</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>20-24</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>25-29</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>30-34</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>35-39</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>40-44</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>45-49</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>50-54</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>55-59</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>60-64</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>65 and over</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

**Land use**

<table>
<thead>
<tr>
<th>Land use</th>
<th>1990 boundary changes in process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1990 boundary</td>
</tr>
<tr>
<td>2</td>
<td>1985 boundary</td>
</tr>
<tr>
<td>3</td>
<td>1983 boundary</td>
</tr>
</tbody>
</table>

**Land area**

<table>
<thead>
<tr>
<th>Land area</th>
<th>sq km</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>150</td>
</tr>
<tr>
<td>1985</td>
<td>124</td>
</tr>
<tr>
<td>1983</td>
<td>80</td>
</tr>
</tbody>
</table>

**0.4.9 Satellite Profile: Yeagun**
Market land values (1990)(K million/acre)

1st class housing areas
Northern areas

Employment (1983):

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional/technical/administrative/clerical</td>
<td>43%</td>
</tr>
<tr>
<td>Sales/services</td>
<td>22%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>3%</td>
</tr>
<tr>
<td>Industrial/transport</td>
<td>37%</td>
</tr>
<tr>
<td>Others</td>
<td>5%</td>
</tr>
</tbody>
</table>

Sectoral employment (percentage)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>49%</td>
</tr>
<tr>
<td>Co-operatives</td>
<td>2%</td>
</tr>
<tr>
<td>Private</td>
<td>15%</td>
</tr>
<tr>
<td>Casual/own</td>
<td>34%</td>
</tr>
</tbody>
</table>

Education (1983):(percentage)

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>5%</td>
</tr>
<tr>
<td>Secondary</td>
<td>25%</td>
</tr>
<tr>
<td>Tertiary</td>
<td>70%</td>
</tr>
</tbody>
</table>

Literacy rate

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>89%</td>
</tr>
<tr>
<td>Completed primary school only</td>
<td>21%</td>
</tr>
<tr>
<td>Completed secondary level</td>
<td>32%</td>
</tr>
<tr>
<td>Completed or within tertiary level</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>7%</td>
</tr>
</tbody>
</table>

Professional Resources (1983):

<table>
<thead>
<tr>
<th>Professional Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects, planners, engineers, surveyors, technicians</td>
</tr>
<tr>
<td>Economists, statisticians</td>
</tr>
<tr>
<td>Accountants, auditors</td>
</tr>
<tr>
<td>Computer operators</td>
</tr>
</tbody>
</table>

D.4.3 The Yangon City Development Committee (YCDC)

For the formulation of the World Bank Infrastructure Rehabilitation Project, an intensive analysis of the organization and performance of YCDC was prepared in early 1988. Although this project is now scheduled to be reappraised in late 1990, much of the background material is applicable to the current situation. Since 1988, however, the redistribution of population through the land-development programme has dramatically increased and changed the emphasis of the YCDC operations and maintenance responsibilities. The May 1990 City of Yangon Development Law transfers land-administration, planning and land-development functions to the YCDC from HD, and provides for amended financial arrangements. The following overview is based on material obtained in interviews prior to the introduction of the new legislation. The state of transition, political uncertainties and the element of crisis management in the manner in which YCDC has been obliged to carry out its functions resulted in a situation by mid-1990 for which it is difficult to obtain clear information particularly with respect to finances.

YCDC remains directly, controlled by MOHRA, although the accelerated programmes often require the short-circuiting of regular procedures. It has responsibilities for the provision of municipal services to the 27 townships making up the city area, within which there are 413 wards and 16 village tracts. Three new townships to incorporate the large-scale resettlement
areas are in the process of being officially designated. The current committee system was set up under 1984 legislation although the taxation structure was introduced in 1922. Figure D.4.3.1. sets out the organization structure. The total personnel strength shown is for mid-1990, with the breakdown of officer-level staff taken from the World Bank Appraisal Report. The total of 13,600, an increase of around 5000 since early 1988, reflects the impact of the post-1988 expanded public works activities.

YCDC has the following revenue categories:

(a) Property tax;
(b) Share of profit tax (5 per cent of business profits, passed on from the National Inland Revenue Department);
(c) Market, slaughterhouse rent/fees;
(d) Playgrounds/garden entrance fees, rents from concessions;
(e) Building application fees;
(f) Water, sewerage charges;
(g) Wheel tax (vehicle licences) (previously responsibility of Local Transport Department; since March 1990, collected by YCDC. 300 percent increase in annual collections since 1988/89);
(h) Hire and service charges (vehicles, workshops);
(i) Sales of drinking water (by tanker);
(j) Fines from courts (mainly traffic offences);
(k) Pawnshop licences;
(l) Public toilet fees;
(m) Crematorium charges;

In line with the national municipal revenue position, the market and slaughterhouse fees are the major source, followed by the property tax. There are around 290,000 registered holdings in the city: 50,000 of these have not yet been assessed and 55,000 are designated as "small huts" not liable for property tax.

A further source of income is from property development. Current projects include markets, a department store and a scheme for diplomatic residences. YCDC may raise funds through domestic banks for such income-generating activities, for which outright sales are expected, and for which payments may be received in foreign exchange.

The total actual revenue received for 1988/89 was reported as K300 million. The 1990/91 estimate for current expenditure is K300 million, with K500 million for capital expenditure.

The property tax estimated annual target for 1990/91 is K 60 million or 20 per cent of revenues. Thakita and North/South Okkala areas have now been taken over by YCDC and are subject to property tax. The new developments of Dagon and Hlaing Tha Ya will also be assessed for property tax within the next two years when these areas are formally annexed as part of YCDC. As many of the new plots are occupied by households previously in squatter housing not liable for tax, the revenue base will be considerably expanded.

The budgeting is annual, within a four-year plan. YCDC is required to be financially self-sufficient, although the Government contributed K280 million
in 1989/90. The highest capital expenditure is on roads, including associated drainage and footbridges (K250 million in 1989/90).

YCDC has the official role of relocating squatters in the post-1988 clearance programme on the orders of SLORC. YCDC is obliged to hire and pay for the trucks used in the operation (army transports were also used). The overall management of the exercise, including the selection of those to be moved, was the responsibility of a special *ad hoc* SLORC committee.

The priority technical assistance needs of YCDC, as reported to the Mission, are for improved management-information systems, financial management, and operations and maintenance skills. Equipment and machinery is also required for solid-waste management and cleansing services. Training is required for property tax management including the assessment programme, for land-information systems (LIS), and for accounting.

Figure D.4.3.1 Organization of Yangon City Development Committee

<table>
<thead>
<tr>
<th>SLORC Resettlement Programme Committee</th>
<th>Mayor/Chairman (Col. Ko Lay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretary</td>
<td></td>
</tr>
<tr>
<td>Joint Secretary</td>
<td></td>
</tr>
<tr>
<td>Full-time members</td>
<td></td>
</tr>
<tr>
<td>Part-time members members</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Departments</th>
<th>Officers</th>
<th>Other staff (percentage)(2)</th>
<th>Township offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>8</td>
<td>0.2</td>
<td>Insein</td>
</tr>
<tr>
<td>Budget and accounts</td>
<td>9</td>
<td>2.5</td>
<td>Mingladon</td>
</tr>
<tr>
<td>Works inspection</td>
<td>4</td>
<td>2.5</td>
<td>North Okkalapa</td>
</tr>
<tr>
<td>Works co-ordination</td>
<td>12</td>
<td>0.7</td>
<td>Kamayut</td>
</tr>
<tr>
<td>Assessment</td>
<td>6</td>
<td>1.2</td>
<td>Hlaing</td>
</tr>
<tr>
<td>Revenue</td>
<td>3</td>
<td>1.0</td>
<td>Mayangon</td>
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<tr>
<td>Markets</td>
<td>5</td>
<td>9.6</td>
<td>Thingangyynn</td>
</tr>
<tr>
<td>Veterinary services/slaughterhouses</td>
<td>4</td>
<td>2.5</td>
<td>Yankin</td>
</tr>
<tr>
<td>Cleansing</td>
<td>2</td>
<td>32.8</td>
<td>South Okkalapa</td>
</tr>
<tr>
<td>Engineering (roads/bridges)</td>
<td>23</td>
<td>6.2</td>
<td>Kemmendine</td>
</tr>
<tr>
<td>Engineering (buildings)</td>
<td>12</td>
<td>1.8</td>
<td>Sanchang</td>
</tr>
<tr>
<td>Engineering (water/sanitation)</td>
<td>20</td>
<td>17.1</td>
<td>Ahlone</td>
</tr>
<tr>
<td>Motor transport/workshop</td>
<td>4</td>
<td>11.2</td>
<td>Lanmadaw</td>
</tr>
<tr>
<td>Central stores</td>
<td>5</td>
<td>2.0</td>
<td>Latha</td>
</tr>
<tr>
<td>Parks, gardens/playgrounds</td>
<td>5</td>
<td>3.8</td>
<td>Pabedan</td>
</tr>
<tr>
<td>Township offices</td>
<td>24</td>
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<td>Botadang</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Pazundang</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Kyanktada</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Dagon</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Bañan</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Tamwei</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>MingalaTaungyunt</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Thaketa</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Dawbon</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Port</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Dala</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Seikkyi/Kanaungto</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>3.8</td>
<td>Plus three in process of being installed</td>
</tr>
<tr>
<td>Total personnel including officers</td>
<td>13,600</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

(2) Based on early 1988 breakdown as reported by World Bank

D.4.4 Municipal services

(a) *Water supply*

The chief sources of water supply for Yangon are the Hlawga Reservoir (16 MGD): the Gyobyu Reservoir (22 MGD) and 142 deep tubewells (16
MGD). There are high losses due to leakage, pump breakdown and general deterioration of the distribution system, much of which is over 70 years old.

Many private houses have their own hand-dug shallow wells and areas of low-income housing rely on communal wells and standpipes. Rainwater catchment is another source of water supply in some areas.

AsDB has been assisting in the improvement of water supply in the city. A project for the construction of the Phugyi Reservoir, transmission mains to extend the distribution system, two pumping stations and a plant for manufacturing pre-stressed concrete pipes was approved in 1973 with an estimated total cost of $31 million. Cost overruns of $27 million brought additional AsDB and OPEC loans in 1978. The project came to an end in 1990.

(b) Sanitation and drainage

The waterborne sewerage system which serves only the CBD was built 90 years ago and is the only one in the country. It consists of gravity sewers, 39 pneumatic ejector stations of which only 30 are working, two sewage force mains and outlet works. Over the years, surface drains have been linked to the sewer which discharges untreated stormwater and sewage into the Yangon River. A sewerage master plan was sponsored by USAID in 1965 to meet the city's requirements until 2010. Some improvements to the existing system were made with USAID assistance in the early 1970s, but came to an end for lack of local funds. Low-cost sewerage systems and on-site sanitation were to have been extended to areas served by the water distribution network.

The majority of the city's population depends on septic tanks - for those householders who can afford to build them - and pit latrines. Notice was served in 1988 on families using bucket latrines. Legal proceedings and fines were imposed on those who did not comply and the YCDC sanitation service stopped its collection of night soil.

As in all densely-occupied housing areas where the sanitation is poor, the health hazards are magnified when open stormwater drains become blocked and overflow. Sample surveys have confirmed that surface drains carry a medium to high pollution load with high levels of faecal matter.

Solid waste is collected by 104 trucks owned and operated by YCDC and by private contractors. The wastes are dumped at a site outside the municipal boundary. It is likely that there is well-organized sorting and recycling of waste materials prior to collection in Yangon as there is in Mandalay. Pigs and dogs play an important part in disposing of edible wastes.

(c) Fire-fighting

The 40 x 60 plots in new housing areas are generous for single-family dwellings. Typically a gap of 10-15 is left between houses and each block of 20-25 plots is separated by a wide road reserve.

There is a strong likelihood of plot subdivision, particularly on squatter resettlement sites, where families cannot afford to build, or at the sites for government employees, where the owners decide to build houses for rent (some of the government employees who had to buy new plots already owned houses in the centre of Yangon).
If this subdivision of plots were to occur on a large scale, the fire hazard would increase accordingly. All the houses in squatter resettlement areas are constructed of highly combustible materials. Even the more substantial timber houses are treated with inflammable products as protection against termites.

Apart from the fire breaks provided by road reserves, only the traditional local methods of fire-fighting are available. These include the use of long hooked poles, fitted with small timber plates, several of which are stacked just inside each plot. These are used to beat out fires and to drag down roofing material. Plastic water-filled bags are also stored outside most houses. The "back lanes" provided in most of the layouts also act as fire breaks and access for fire-fighting, although over time the encroachments on these reserves reduce their functions in this respect.

Traditional village fire-warning lookout points had been built at a number of squatter resettlement sites. An observation platform raised 3 - 5 metres on a wooden structure contains an alarm gong, and families arrange to keep watch in turn.

Considering the number of fires which occur in crowded housing areas (5400 households affected in 1985 and 1986), more emphasis needs to be given both to prevention and fire-fighting when improvement proposals are made for the new resettlement areas.

(d) Transport

Public transport in Yangon is provided by the modes listed in the following table:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Average daily passengers</th>
<th>Trips per person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousands</td>
<td></td>
</tr>
<tr>
<td>Buses</td>
<td>1 621.6</td>
<td>78.7</td>
</tr>
<tr>
<td>Taxis</td>
<td>246.4</td>
<td>12.0</td>
</tr>
<tr>
<td>Ferries</td>
<td>24.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Trishaws</td>
<td>60.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Suburban rail</td>
<td>86.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Inland water</td>
<td>21.7</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>2 060.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: In BUR/80/005 Rangoon City and Regional Development Project, Transport Consultant's Final Report, December 1983

In 1982, the State Road Transport Corporation (RTC) had 348 Hino and Leyland buses in Yangon. There were 1039 privately-run buses and 53 run by cooperatives. RTC had turned over three of their least profitable lines to the private sector due to a shortage of serviceable vehicles. Those in the private sector were much older.

The greatest intensity of bus travel was between the CBD and the two most important low-cost housing areas, North and South Okkalapa and Insein. From observation, the predominance of buses and taxis as public transport remains the same today.

The expected added pressure on all forms of transport to reach the new post-1988 resettlement areas from the centre of Yangon was verified through
field inspection. The fact that there is only one narrow bridge giving access to Dagon, and that the ferry must be used to reach Hlaing Tha Ya intensifies the problem.

The accelerated implementation programme for these areas has meant that all routes are clogged with all means of public and private transport attempting to carry building materials, personal belongings and people to the new sites.

The most immediate priority will be to complete the road bridge already under construction to improve access to Hlaing Tha Ya and to improve the major connections between Dagon and the city.

Fortunately the best opportunity for connecting the new resettlement areas with the rest of the city is already in place. This is the double-track circular suburban railway line which was built in 1954. It already serves 37 stations including the Central Railway Station. All the new sites are within reach of the line, and improvement to the service should be a priority in future projects. Up-to-date information on the condition of the railway is not available. Table D.4.1 shows that it carried only 4 per cent of passengers using public transport during 1982.

D.4.5 The 1986 structure plan

The structure plan, published in June 1986 as the final output of the RCRDP, assembles the findings and recommendations set out in the earlier reports prepared under the project. As a provisional proposal based on limited feedback from the concerned authorities, it was expected that adaptation and refinement would be undertaken as part of the Phase II Project - currently scheduled to commence effectively with the arrival of the first UNCHS (Habitat) personnel in mid-1990. Work was initiated in early 1984. The UNCHS (Habitat) team was composed of experts supporting an HD counterpart staff allocation of 21 professionals. A "Rangoon City and Regional Development Co-ordinating Committee" was constituted, chaired by the HD Director and composed of representatives from the Ministry of Defence, the Rangoon Division, Rangoon CDC, the Rangoon Institute of Economics, and the Department of Architecture, RIT.

It is stressed in the opening section of the plan report that during the execution of the project a major shift from the initial "analytical approach" to the emphasis on "sectoral improvement proposals directly supporting overall recommendations" was introduced. The plan was the first attempt to prepare a comprehensive city-wide planning framework, bringing together the previously fragmented sectoral investments, and addressing current legislative and institutional needs. It is further stated that in the absence of a legal context for the formulation and adoption of development plans, the plan document, by its form and content, anticipates such legislation, and remarks that such structure plans need to be supported by "local plans" in order fully to constitute a "development plan".

The function expected to be served by the structure plan were:

(a) Interpreting national and regional policies at the city level;
(b) Establishing aims, policies and general proposals;
(c) Producing a framework for detailed local plans;
(d) Providing guidance for development control;
(e) Establishing a basis for co-ordinating decision-making;
(f) Bringing key issues before the higher levels of Government and the public.

The structure-planning methodology selected is conventional in that a meticulously prepared set of data assembly and analysis reports is used as the vehicle for determining a strategy, supplemented by sector policies and legal institutional and financial arrangements. Entry into the planning process through this approach (as opposed to rapid assessments of conditions, identifications of problems; and early implementation of priority projects with readily identifiable and available resources) has resulted in an impressive set of documents; but with priority actions perceived as a subsequent implementation activity following protracted plan-adoption procedures. It should be noted, however, that traditional master planning techniques focusing on land-use zoning and regulatory rather than promotional provisions have been avoided, and that preliminary designs for action area projects have been incorporated. A discussion on alternative planning methodologies is not included in any of the documentation.

The key aims (objectives), which involve no quantification and mainly follow a standard non-controversial pattern, may be summarized as:

(a) Recognising realistic resource constraints with minimal financial costs;
(b) Maintaining the City as the dominant national urban centre;
(c) Retaining the natural population increase;
(d) Promoting industry and fulfilling employment demands;
(e) Improving accessibility, and integration of transport and land-uses;
(f) Providing affordable and appropriate dwellings and improving existing housing stock, together with the introduction of housing finance and cost recovery measures;
(g) Protecting the physical environment and encouraging conservation of the cultural heritage;
(h) Improving and expanding provisions of physical and social infrastructure;
(i) Providing planning flexibility to meet changing circumstances.

Assumptions used as the baseline for strategy formulation were that the City would increase by at least 1 million population within 12 to 15 years, that an increasingly large share of the country's industry would be located in the City, that current housing shortfalls would grow, and that financial resources would remain limited. The four components of the strategy are:

(a) Spatial restructuring;
(b) Guided densification;
(c) Repair and maintenance;
(d) Financing of urban investments.

The authors themselves acknowledge certain shortcomings, stating that "the Strategy is presented in a rather sketchy way (as the project work was concentrating up to now on sectoral analysis and elaboration of related improvement measures) and that its implementation would require considerable strengthening of the urban planning and urban development functions".
Figure D.4.5.1 The Yangon 1986 structure plan with subsequent development
**Spatial restructuring** concentrates on promoting an east-west priority development axis with the aim of consolidating new infrastructure investment for predicted growth in areas with existing high population increases and comparatively high levels of land availability. The preferred future spatial structure of the city was characterized by three functionally distinct but complementary urban sub-areas: the east-west axis, the existing central area, and the Syriam area, designed for larger-scale industries, and new port facilities.

**Guided densification** is not spatially specific but would rely on a package of incentives, embracing employment-generation interventions and land-supply mechanisms.

**Repair and maintenance** seeks to redress imbalances in services and building standards through comprehensive upgrading in the central area and low-income housing areas, and by the introduction of new construction-material technologies.

**Financing of urban investments** involves an approach based on diversification of sources, relying heavily on direct cost recovery from beneficiaries, through abandoning current government subsidies.

The physical attributes of the strategy are illustrated in Figure D.4.5.1, which also includes subsequent actual developments.

References are made to the effects of the post-1988 programmes on the structure plan proposals in sections D.2 and C.5. The assessment of the Mission on the methodology, scope and focus of the planning approach adopted are summarized below and expanded in section F.3 which addresses the reformulation of project BUR/85/016.

The structure plan's weaknesses as an operational tool stem from the institutional fragmentation of urban-management responsibilities between the then RCDC and HD. With the recent reorganization of responsibilities there should now be an opportunity to study more fully the city's overall financial management and to improve resource mobilization. Project reformulation may now permit more detailed analysis of the current revenue base and assess the opportunities for expansion and improved performance. In addition, the relationships between land- and property-based taxation in terms of the distribution of institutional responsibilities and opportunities for integrated land-information systems may be clearly defined.

The structure plan already contains thorough analyses of existing budgeting and programming procedures but a consolidated multi-sectoral recurrent and capital investment programme, taking account of existing commitments and programmes, still requires to be constructed. Without this exercise it will be difficult to test the validity of the plan in relation to current aims and resource constraints.

Further areas which deserve intensive treatment are the workings of the land and housing markets, surface-water drainage patterns and the interactions with other elements of waste management, and the impact of seasonal flooding on land-conversion trends. An illustrated analysis of physical constraints and opportunities employing sieve-mapping techniques could prove of value in this context. With respect to particular aspects of the proposed strategy, the guided development approach which is adopted both for "spatial restructuring" and "densification" appears to be an appropriate policy-level proposal, but requires more clarification in terms of specific
Total post 1985 programme: 97,730 plots
of which 84,000 plots commenced post 1988

& squatters and other areas cleared
1981-1990, including fire locations

approximate population resettled from
cleared areas: 312,000
of which 246,000 post 1988

separate public servants
allocations within the total:
38,000 plots

A 1958/60 resettlement programme
North and South Dkkalapa, Thakita
40,000 plots

O Industrial/Institutional Zones
(mainly post 1988, little land
development in progress by
aid 1991)

Figure D.6.4.1 Yangon resettlement programmes
incentive and disincentive mechanisms and the strategic-level infrastructure provisions.

D.4.6 The squatter clearance and resettlement programme

The Mission undertook a detailed survey of the recent resettlement programme dating from 1985. Figure D.4.6.1 illustrates the locations of the areas cleared and of the new resettlement sites. In annex I, a detailed description is provided, supported by an index map and an annotated list of all squatter and other areas cleared together with those squatter communities which by mid-1990 had not been relocated. According to HD, a total of 97,730 plots have been planned since 1985, including land-reassembly projects which allow squatters to remain in the existing locations. The majority of these plots are within areas for which by mid-1990 the land development was complete or in progress. The national context for this is described in section D.2. It was found that 43,000 squatter households (equivalent to 192,000 persons), including 8300 in reassembly projects had not been resettled. The total shifted in the post-1988 programme is estimated at 43,000 households (or 260,000 persons). To this can be added around 8500 households forced to relocate following a series of fires between 1986 and 1988.

To summarize the quantities involved, out of the 97,730 plots in the programme, around 52,000 plots were occupied by resettled squatters. In addition, a further 30,000 plots have been allocated to public servants leaving around 15,000 plots to be developed and/or allocated and occupied. The scale and speed of the operation can be gauged by the fact that of the 84,000 plots commenced in 1989, the Mission estimates that 70,000 are nearing completion - and this includes the construction of completed dwellings for public servants. The Mission could not ascertain the precise number of these dwelling units, but it is likely to be over 10,000 by mid-1990. The 97,730 plots is equivalent to between 580,000 and 590,000 persons, or around 20 per cent of the Yangon total population.

All resettlement areas have planned layouts with pegged out subdivisions and constructed roads. Road surfaces are above seasonal flood levels, but the ground surfaces of plots have not been raised. According to the Government, the full range of physical and social services will be provided. The standard 40’ x 60’ squatter resettlement plot with basic services is priced at K3000-K35,000 and the full amount must be paid in advance in a single payment. Dwelling construction and pit latrines are the responsibility of each household. Access to controlled timber prices is available. In many cases, although there was no initial planning for this contingency, households are dividing plots into 20’ x 60’ sizes and paying K1500. In one area, each family is provided with two young trees for planting within the plot boundary.

The Dagon new township has the majority of plots allocated in blocks to separate ministries. Each ministry concerned may decide to provide sites-and-service plots or completed dwellings for its own employees. Although the layout for the complete township of over 40,000 plots and the main road system is planned and developed by HD, the ministries are responsible for land development, survey, dwelling construction and allocations within each block*. Public servants are charged K 8000 per plot, deducted at source and repayable over five years without interest. Credit for the complete dwelling or for self-build construction costs is available for up to K 300,000 at 5 per cent interest over 10 years. HD quotes a waiting list of 60,000 public servants over and above the approximate figure of 30,000
Figure D.4.6.2 Section of Haing Tha Ya resettlement area: Yangon
households already housed in this programme. Priority is given to those who are married and with over 20 years in government service. Following a two-year permit period, all plots, including those for squatters, will have tenancy secured through grants of 30-year leases.

In Dawbon, the largest of the reassembly projects, the standard 25’ x 50’ plots are being halved to provide a 12.5’ frontage. During a period of around four months, each block of existing squatters occupies temporary self-built shelters while the planned layout is pegged out and roads constructed. Plot charges are K 3000 or K 1500. Services are being gradually installed. Drainage in the sections commenced in 1985 is poorly maintained. Private entrepreneurs are introducing water-supply systems. Wells are drilled on their own plots and assistants move a system of plastic pipes to the households wishing to buy water. A whistle arrangement is used to signal which tap at the well to turn on and when to turn off when storage drums at the plots are full.

The Urban Water Supply Division (which includes sanitation) of HD is responsible for planning for the well-drilling only in the squatter-resettlement areas. In the Dagon blocks allocated to different government ministries for their employees, each agency is responsible for its own water and sanitation arrangements.

Well-drilling equipment of the Rural Water Supply Division (RWSD) has been used at sites where deep wells were needed and private contractors have been employed for hand-drilling shallow wells.

The rough standard of distribution in the squatter-resettlement areas is one well per 50 plots. Each well is expected to give 4 gallons per minute. Hand-pumps set over a drained concrete slab are provided at each well. Wells are intended to be located not less than 50’ from the nearest latrines.

The earlier Hlaing Tha Ya resettlement section has a higher standard of utilities than the post-1988 projects. Some of the wells are connected to concrete storage tanks with rows of water taps set in one side, and one of them is operated by a solar pump.

Through RWSD and ESD, UNICEF’s Rural Water and Sanitation Programme has assisted with water and sanitation facilities in the Yangon resettlement areas. The material assistance has includes HDP latrine pans and fittings, computers for tubewell monitoring and solar driven submersible pumps (GRUNDFOS, Denmark). Some technical supervision has also been provided by UNICEF.

Water-quality tests have shown excessive iron and chloride from many wells. Aeration filters are being used experimentally to improve the quality and at Dala, where it is particularly bad, the Irrigation Department has constructed three rainwater storage ponds in open spaces between the housing.

HD has made no plans for sanitation. It was assumed that the occupants would provide their own pit latrines and locate them in the "back lane" reserves between house plots.

Given the emergency nature of the squatter relocation exercise, government agencies which would not normally deal with urban projects became involved. The ESD has provided latrine pans and fittings for 10 per cent of the squatter households. These were supplied by UNICEF.
At the Hlaing Tha Ya area, a number of public "pour flush" latrines had been constructed close to the market. These included a wooden shelter and squatting slab with HDP latrine pans connected to offset septic tanks made of prefabricated concrete rings. The public latrine inspected already had an unprotected pond of septic effluent next to the tanks, likely to overflow during the monsoon.

Some 16,150 septic tank units were supplied to six areas in Yangon since 1988 by the Water and Sanitation Department, YCDC. The three largest squatter resettlement areas are included in this total. Normally YCDC provides drawings of a recommended septic tank to private housebuilders who may purchase the rings from the Public Works (previously the Construction Corporation).

The two largest resettlement areas, Hlaing Tha Ya and Dagon (which between them account for a target population of at least 300,000 over a combined land area of around 40 sq km) will have a major impact on surface-water drainage systems. Hlaing Tha Ya is designed to drain into the Hlaing and Ram Hlaing Rivers, while flows from Dagon will discharge into the Ngamoyeik Creek. Both water courses are tidal. Earlier development in these areas has been constrained partly by lack of sufficient river crossings and by the seasonal flooding which is reported to be up to one metre or more in depth. Although internal drainage schemes have been designed by HD and are in the process of being installed, flood protection and control during the periods of high river levels and high precipitation have not been addressed. In Hlaing Tha Ya, the earlier development of 3500 plots with United Nations support has been assessed by UNCDF missions and the critical need for a broader view of the drainage system brought to government's attention.

Photographs of selected resettlement and reassembly areas are included in annex V. Typical layouts from the Hlaing Tha Ya and Shwe Pyi Tha areas with water point locations are shown in Figures D.4.6.2 and D.4.6.3.

5 Mandalay

D.5.1 Introduction

The city of Mandalay, although with only 20 per cent of the population of Yangon and 17 per cent of the land area, is experiencing rapid economic growth largely due to the opening of legal border trade with China and Thailand. Central area land values in 1989/90 are higher than those in Yangon, and there are higher rates of private-sector property development. Compared with Yangon, the Mandalay urban development pattern is characterized by: (a) a more even distribution of population; (b) the adoption of the historical grid patterns for later expansion areas; (c) a tightly drawn city boundary which is demarcated by earthworks; (d) a low proportion of unplanned and undeveloped areas; and (e) a close set of interdependencies with surrounding urban centres.

The 1978 structure plan treated Mandalay as a metropolitan region. This embraced the town of Sagaing in the adjacent division and several other small towns including Amarapura which links Mandalay with Sagaing. Using 1983 census figures, the combined population at that year would be in the order of 650,000.

The major sources of data are the 1978 structure plan (untranslated) prepared by HD, and the AsDB Mandalay water-supply project reports between 1985 and 1990. Using material from these sources, together with interviews held by the Mission and the 1983 census reports, a statistical
profile is first presented as a set of data lists. This is followed by brief sections on the Mandalay City Development Committee, key services and the squatter clearance and resettlement programmes.

D.5.2 Statistical profile : Mandalay

**Approximate land areas:**

<table>
<thead>
<tr>
<th></th>
<th>sq mi</th>
<th>sq km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate pre-1990 boundary</td>
<td>31</td>
<td>80</td>
</tr>
<tr>
<td>1990 boundary expansion in process</td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>

**Land uses (immediate pre 1990 area):**

- **Built up** (percentage) 82
- **Vacant** 12
- Historical palace (military use) 6

**Population:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>532 949</td>
</tr>
<tr>
<td>1990</td>
<td>630 000 (estimate)</td>
</tr>
</tbody>
</table>

**Age structure (1983):**

- Under 15 years (percentage) 35
- 15-59 years (percentage) 59
- 60 years and over (percentage) 6

**Sex ratio (1983):**

100.02 males per 100 females

**Densities:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Persons/sq mi</th>
<th>Persons/sq km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-1990 boundary, 1983 population</td>
<td>17190</td>
<td>6 660</td>
</tr>
<tr>
<td>1990 boundary, 1990 population</td>
<td>16 580</td>
<td>6 300</td>
</tr>
<tr>
<td>1983 lowest areas (AsDB project breakdowns)</td>
<td>3 850</td>
<td>10 000</td>
</tr>
<tr>
<td>1983 highest areas (AsDB project breakdowns)</td>
<td>11 540</td>
<td>30 000</td>
</tr>
</tbody>
</table>

**Housing and services:**

- Households (1983) 01 889
- Average household size (1983) 5.2
- Population (percentage) in households (1983) 17
- Population (percentage) in institutions (1983) 83
- Housing structures (1983) (number) 77 000
  - Permanent and semi-permanent materials 16 per cent
  - Wood and wood/bamboo 72 per cent
  - Bamboo/thatch 12 per cent
- Plots in resettlement areas (1985-90) 15 000
- Plots planned (1990-95) 10 000
- Pre-1985 population with access to drinkable water 90 per cent
- Post-project population with access to drinkable water (1993) 0 per cent
- Population served by: (1983)
  - Piped sewerage 0 per cent
  - Septic tanks 12 per cent
  - Pits/others 88 per cent

**Market land values (1990):(K million per acre):**

- CBD 212
- 1st class housing area 40
- South-west low-income area 9
Rentals (1990)

<table>
<thead>
<tr>
<th></th>
<th>K/month</th>
<th>Key money</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st class housing area</td>
<td>2 000</td>
<td>500 000</td>
</tr>
<tr>
<td>CBD ground floor shop</td>
<td>3 000</td>
<td>1 000 000</td>
</tr>
<tr>
<td>One room in low-income area</td>
<td>150</td>
<td>3 000</td>
</tr>
</tbody>
</table>

Professional resources (urban divisional totals) (1983):

Architects, planners, engineers, surveyors, technicians
Economists, statisticians
Accountants, auditors
Computer operators

D.5.3 The Mandalay City Development Committee (MCDC)

A new organizational arrangement was introduced in 1985. The previous Chief Executive Officer responsible to the Mayor/Chairman and Committee Members is now replaced with the position of MCDC Director. There are five divisions (Administration, Engineering, Sanitation, Finance, and the AsDB Water Project) with a total personnel strength of 1773, including 25 qualified engineers. City planning and expansion responsibilities are undertaken by a special Divisional LORC committee, which currently deals with squatter clearance and resettlement.

The city area is made up of four townships, within which there are 55 wards. Five wards are reassessed for property tax valuations each year on a rotation system. There are 60,000 holdings registered for tax purposes. All accounting and record-keeping is manual.

For 1989/90, the MCDC budget was K 22 million, excluding the AsDB loan for which the Central Government charges an on-lending rate of 5 per cent. Property tax accounts for 15 per cent of income. Over recent years the collection has varied between 85 and 95 per cent of demand.

Unlike the situation in Yangon, where land administration was transferred in May 1990 from HD to YCDC, SLRD still retains all responsibilities for land records, revenue assessment and collection within the city.

MCDC states that the 1978 structure plan is in urgent need of review, that the most critical management issues are related to sanitation and drainage and that priority training needs are in engineering design and maintenance, and town planning.

D.5.4 Services

(a) Water supply, sanitation and drainage

Before 1985, the city’s piped water supply depended on the moat surrounding the palace and on tubewells. Only 40 per cent of the population had access to piped water and 50 per cent of the supply was lost mainly due to leakage.

Mandalay’s water-supply system has now been improved as a result of a project which began in 1985 with external assistance from AsDB, and later
from OPEC, of $US 22 million. The Government’s contribution was equivalent to $US 46 million.

The Phase I design target set for 1993 is to serve 90 per cent of the population (estimated at 6207000 as shown in table D.5.4.1. Phase I will be completed by December 1990.

Table D.5.4.1 Water supply, 1993 (percentage)

<table>
<thead>
<tr>
<th></th>
<th>Public standpipe</th>
<th>Individual connection in garden</th>
<th>Individual fully-plumbed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-income</td>
<td>60</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Middle-income</td>
<td>36</td>
<td>51</td>
<td>63</td>
</tr>
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The per capita demand standard is 45 lpcd from standpipes, 120 lpcd for garden connections and 190 lpcd for fully-plumbed household connections. Since project delays have brought the completion date so close to 1993, the system has been designed to serve an estimated 760,000 people by 2000. A second phase of the project has been signed to implement the new design targets (estimated at $ 1 million in foreign exchange and $US 25 million equivalent in local currency).

The components of the project include 20 tubewells with a capacity of 75 lps (Phase I) and 96 lps (Phase II), 6.8 kilometres of transmission pipes, four storage tanks and a booster pumping station. New chlorinators are connected with the pump-station storage tanks. The total capacity of the storage tanks is 48,000 cubic metres.

The geological conditions for water supply are apparently very good in the Mandalay area, and trials for the new project suggested a very extensive aquifer. One 30-inch diameter test-well produced 120 lpc at a depth of 130 metres.

In principle there is no reason why adequate water cannot be provided to the new resettlement areas. The project made provision for new housing areas in the south of the city, and the main distribution pipes were deliberately oversized. In fact, 10,000 of the first phase of new plots are outside the city boundary so they may be excluded from the piped supply for some time, although MCDC states that incorporation of the new areas is being considered.

Water charges will be introduced in Mandalay. They will be paid directly to the new Water Division of MCDC. The maximum connection fee for household connections will be K 300-400. Standpipes will also be metered, leaving the community responsible for local charges. An advance payment of two months’ rates is required. Previously there were 12,000 metered connections in the city. The new project has provided 44,000 meters, 330 public standpipes and 965 fire hydrants.

With a staff of 375 and with 39 trucks, MCDC makes regular collections and dumps the garbage at sites outside the city boundary. Presorting is evidently very effective in Mandalay where nothing useful is thrown away and most materials are recycled in the informal sector. This may explain the claim by MCDC that there are no problems with garbage.
In 1983, it was estimated that 12 per cent of the population had septic tanks, 74 per cent pit latrines and 10 per cent buckets. Four per cent were without any sanitation facilities. Only the hospital had a small waterborne system which discharged into a trickling filter plant, and was in poor condition. Bucket latrines and night-soil collection were officially stopped in 1982. That is, MCDC stopped collecting and pit-latrines had to be included in any new building application. Presumably people who could not afford any alternative to buckets had to make their own arrangements. MCDC has one conservancy tanker which it uses to pump sewage from the hospital and the Mandalay Hotel, and two others which are available to desludge septic tanks.

The studies carried out for the water-supply project included a sanitation master plan which recommended a gradual improvement of the existing methods, leading eventually to a waterborne sewerage system.

There is no question that poor drainage presents the worst health and environmental problem for Mandalay. The improved water supply may only add to this problem unless urgent action is taken to improve the drainage.

The drainage system currently acts as a malfunctioning open sewer which is either blocked during the dry months or flooded during the monsoon. However, the very hot dry climate permits fast decomposition and there are two large lakes between the built up area and the river which act as sewage lagoons.

Mandalay's flat terrain is good for cyclists, but bad for drains. The existing drains have limited capacity and poor gradients. Apparently the size of one important collector drain has been reduced as a result of the road-widening programme.

The MCDC and the Construction Corporation are well prepared to implement a city wide drainage plan. Limited high-quality design assistance would be advisable for a drainage and sanitation programme.

(b) Transport

A Wheel Tax is charged for the 15,000 motor vehicles registered by the MCDC. These include cars and trucks. From observation there are some pick-up-truck taxis and a larger number of 40-year old Japanese three-wheel taxis.

Other transport is provided by bicycle trishaws, 3-4,000 horse drawn carriages, 400 bullock carts and, if the MCDC estimated rate of three bicycles per family is correct, 300,000 bicycles. Bicycles are not registered in Mandalay as they are in Yangon.

Other public transport is provided by old Hino and Leyland buses and by the new circular railway constructed by the Railway Corporation under the SLORC public works programme. This 35-mile railway makes use of part of the old line which ran through the centre of Mandalay. New tracks have been laid at street level often crossing road junctions with no warning signs or gates. Although the two trains each with five carriages are slow-moving, many accidents are reported to have been caused. There are 13 new stations, and the round trip, which costs K 3.00, takes two hours. Some sections of the line are built directly over the recently constructed 900-mm water main (the pipes are 2 metres below ground level). The Mission was unable to obtain an estimate of the cost of the railway.
The programme of new public works follows the same pattern as in Yangon and other towns. Much of the work in Mandalay is concentrated on road-widening, drained footpath construction, and one section of a new separated bicycle lane (total cost K7 million). All the work is being done hastily and it is very likely that the quality and design standards would not be acceptable under normal circumstances.

Other work under the programme includes a road bridge over the railway, a new road which gives traffic access almost to the top of Mandalay Hill, and a pedestrian underpass. The road, which includes a number of hairpin bends, was built in only two months. There is barely room for two cars to pass on the road and little evidence of permanent embankments and retaining walls. Mandalay Hill is an important Buddhist shrine, remarkable also for the covered staircases, which allow pilgrims to approach on foot along four different routes from the bottom of the hill.

D.5.5 The squatter clearance and resettlement programme

The programme has a target of 25,000 new plots. Between 1985 and 1988, 50,000 plots within the MCDC boundary were developed and occupied. The location of these is in conformity with the 1978 structure plan, which recommended the designation of 1600 acres for 13,000 plots. Of these, 6000 were to be reserved for relocated squatters. Under the current Government, 2500 plots have been completed within the boundary. Land outside the boundary but adjacent to the earlier schemes is being developed and incrementally occupied for a further 10,000. Also, in the same south-west zone, land has been set aside for 7500 additional plots. Beneficiaries are a mixture of relocated squatters and public servants.

The layouts follow the grid pattern adopted for the town as a whole. All occupants are required to construct their own dwellings. Water-supply provision is currently by tubewell, with an average provision of one point per 80 plots. Plot sizes are standardized at 40’ x 60’, with a single advance payment required for squatters of K4000. This is an increase in the original price, fixed in 1986, of K1800. Payment conditions for public servants are as for Yangon. Unlike the areas in Yangon, the land is not subject to flooding. Taking advantage of the land conditions, the most recently developed areas have graded and surfaced road construction only on the main access routes. Elsewhere, road reserves have not had topsoil removed. Reserves are simply pegged out, and there are no constructed roadside drains.

In the earlier phase, there is already a flourishing small-business sector based on furniture and construction-component manufacturing. A part bamboo/part teak two-storey dwelling costs around K25,000 to construct.

No budgetary allocations were required. The two special committees set up to identify new development areas and to undertake implementation responsibilities established a self-financing system for land development using the advance payments. Subdivision planning and survey work was carried out by MCDC and SLRD. A formal tendering procedure was followed, with five firms bidding for the most recent land development contract.

All squatters in Mandalay are not automatically relocated to the new resettlement areas. Following a fire in 1989, some squatters have been temporarily accommodated on nearby monastery land, pending a decision on final rehousing arrangements. Others with claims to land rights have been allowed to rebuild on the original site in accordance with a new plot layout.
Figure D.5.5.1. Mandalay city: resettlement areas and urban rail system
6 Taunggyi and other secondary towns

D.6.1 Introduction

Field visits were made to secondary towns within the population range of 100,000 to 500,000. Taunggyi had the highest 1973 to 1983 growth rate in this group, with an average of 3.7 per cent per annum. Advice received from HD and other sources confirmed that this rate has been sustained and possibly increased. Bago had one of the lowest at 1.9 per cent. The primary reason for examining first-hand the mid-1990 conditions in selected secondary towns was to record the form and extent of the post-1988 public works programme, with particular reference to squatter clearance and related land-development schemes.

D.6.2 Taunggyi

Situated at an altitude of 4690 feet, the hill town of Taunggyi is the administrative centre of Shan State. The town's population has grown from 74,995 in 1973 to 108,231 in 1985. Taunggyi township is amongst the smallest in area but has the highest population (219,516), the highest density, and the largest percentage of urban population (57.7 per cent).

Shan State covers the largest area of any district or state in Myanmar. It has 52 townships, 304 wards and 1632 village tracts. The population density has increased from 53 persons per square mile in 1973 to 62 in 1983. The total state population (3,716,841 in 1983) has grown at 1.57 per cent since 1973. For the state as a whole, only 17.7 per cent of the population is urban. Amongst ethnic groups, Shans are the majority (76.4 per cent), followed by Burmese (11.1 percent). Kachin, Kayah, Chin, Mon and Rakhine make up 6.2 per cent. The rest (6.3 per cent) are of mixed and foreign origin. Of the total population over five years of age, 46.2 per cent are literate, 70 per cent have had not formal education, and 19.8 per cent have completed standard 1 -A. Agriculture, animal husbandry, forestry, fishing and hunting occupy 80.5 per cent of the employed population. Production transport and equipment labourers make up 8.3 per cent, and professional and technical 1.5 per cent.

Taunggyi is a focus of trade from neighbouring China, the Laos People's Democratic Republic and Thailand. It has also prospered, no doubt, from smuggling and other illegal activities, although the main local products are cheroots and garlic. Insurgents and opium warlords operating between the township and the eastern borders explain the large military headquarters in the town.

A branch line from Thazi off the Yangon-Mandalay railway ends at Shwenyaung, 12 miles short of Taunggyi and almost 3000 feet below. The airport for Taunggyi is Heho, 25 miles from the town on a road running parallel to the railway.
Figure D.6.1.1 Taunggyi resettlement areas

A area designed by Housing Department
B C extension areas designed by Construction Corporation
The town sits on a rocky pine-covered shelf looking down 2000 feet to a fertile plateau on the west, and up to a craggy line of rocks 1000 feet higher on the east. There are remnants of colonial building, a mixture of Buddhist, Sikh and Hindu temples, mosques, churches and a main street which features more recent buildings in the international socialist-realist style.

Housing is mixed, with individual dwellings of wood, "brick nogging", reinforced cement frame and mainly corrugated galvanized iron sheet roofs. There are some very extravagant villas and some blocks of two- or three-storey government apartments dating from the late 1950s. There are two large older markets.

Water supply is from a reservoir of 56 million gallons fed by rainwater and a spring three miles from the town. It delivers 1.2 million gallons per day through a pipeline following the contours and which is said to lose more than 50 per cent along the way. Most private houses have their own hand-dug wells. The water contains large amounts of calcium bicarbonate.

Stormwater is carried in open drainage channels to the main north-south drain along the main street. From there it flows down the hillside and eventually into the lake at Khyu Kan, 7 miles away in a direct line. Those houseowners who can afford them build septic tanks, otherwise pit latrines are used in the town.

The public works programme directed by SLORC since 1988 has transformed the town itself and established a completely new settlement of 12,000 plots on the first step of the plateau 1500 feet below and six miles to the west of Taunggyi.

All squatters and temporary buildings - so called "encroachments" - have been removed from the upper town and resettled on 4000 plots, each 40' x 60', in the new area. There were conflicting reports as to whether or not the squatters had to pay K4000 for their plots, but the Mission was told that they would be given a lease when Taunggyi’s boundary was extended to include the new town.

Plans for Taunggyi’s expansion had already been prepared by the Housing Department before 1988 on part of the same lower site. That project proposed 4000 plots on either side of the main road with an internal configuration following the contours of the site (see Figure D.6.1.1.). Two additional sites, each of 4000 plots and including the squatter resettlement, were planned by the Construction Corporation of the Taunggyi Public Works Department after 1988. Plots have been set out at all three sites and the main roads constructed of compacted earth. All the squatter sites are occupied by bamboo-and-thatch buildings.

Site A, the one originally planned by the Housing Department, consists of 4040 plots mainly of 60' x 75" for "Gazetted Government Officers:" i.e. high-level civil servants from all departments. Some plots are 100' x 75'. The charge for these plots is K. 8000. Although three of the twelve deep tubewells for the entire new town are on this site, only a few houses have been built, apparently because the water supply is inadequate.

Site B, the squatter resettlement, appears to have only one of the tubewells constructed by AMD. There are other hand-dug shallow wells but no drainage channels have been provided. Latrines are also the responsibility of the resettled families.
Site C, which is only partly settled, consists of 4000 plots, each 40' x 60', for lower ranks of the army and government employees at a cost of K. 4000 per plot. This site is furthest from the main road.

Ten buses make 150 trips each day between Taunggyi and the new town. The six-mile climb is steep and slow. Government employees pay K.3 for the return journey, the resettled squatters K.6.

The 12 wells at the new site produce a total of 1500-2500 gph. At some of the wells the water is pumped into concrete tanks containing 6000 gallons. There are eight watertaps at each one. This water also contains high levels of sodium bicarbonate, and well water is considered by the Town Development Committee to be inadequate as a long-term solution.

A project has been prepared by the Irrigation Department, MOAF, to construct a new gravity-flow piped water supply from a spring and catchment reservoir 7.7 miles from the new site. Preliminary tests carried out during the rainy season suggest that the whole system could produce 1,078,272 gpd. The estimated cost of the project is K10,403,000 ($US1.2 million at the official rate). The Town Development Committee claims it needs foreign exchange to buy suitable materials for the project.

Since 1988, SLORC has directed the expenditure of K40 million on public works projects in old Taunggyi. These include: road widening, footpaths and drains - K20 million; a new three-storey market building covering a four-acre site - K1 million; a new town hall to seat 1000 people - K4.2 million; a new swimming pool (which has problems with algae in its water) - K1.2 million; and four new parks and playgrounds, two of them linked by a 300'-long suspension bridge across a ravine - K5.8 million.

The normal, pre-1988 annual income of the town from taxes, was K.8 million, and its annual expenditure K.7 million.

**D.6.3 Bago**

Using the intercensal growth rate, the 1990 population is around 122,000. The town is made up of 22 urban wards within the township of the same name which contains 86 village tracts in addition to the wards. Out of the 1983 population of the Division, 3.8 million, the urban sector accounted for 19.46 per cent or 740,000. The next largest urban centres in the Division are Peji with 83,332 in 1983 and Toungoo with 65,860. Bago is located on a road, rail and river junction, on the main northern route connecting Yangon with Mandalay.

The public works programme is composed of a resettlement scheme, a major new market, a bypass road, and various drain and water-body rehabilitation works. Town revenues for 1989/90 totalled K371,000. The roadworks within the resettlement scheme are being financed with a K3.5 million grant.

The structure plan prepared by HD has been used as the guideline for the resettlement zoning, but the plan's location of the bypass road has been switched to the western side of the town to serve the resettlement areas. The gross land development area is 2700 acres, providing 6000 plots with sizes varying from 40' x 60' to 80' x 100'. The work commenced in November 1988 and is being implemented by the Public Works Department (previously the Construction Corporation). Management is the responsibility of the Divisional LORC, not the municipality. Completion is scheduled for late-1991. Of the 4789 plots allocated, 2,000 were occupied by mid-1990. The layout generally
follows that prepared on request by HD. Water-supply works at the time of
the field visit were not complete. A tanker is used to supply water on a daily
basis at no charge. Two deep tubewells are being installed, to be
supplemented by 50 handpumps.

Apart from the roadworks within the scheme, all land-development costs
are covered by advance payments. Relocated squatters in this case are
allowed to pay in two installments. The minimum charge is only K500 for a
divided plot of 20' x 60' which can be occupied with an advance payment of
K250. Public servants have been allocated the larger plots, which are priced
at K,6000 for 60' x 80', and K9000 for 80' x 100'. As for the other towns with
similar programmes, public servants have a deferred repayment system and
access to credit for construction materials. On all plots, whether for relocated
squatters or for public servants, households are required to construct their
own dwellings. The low-cost plots are located on the perimeter of the scheme
with poor access conditions on hilly terrain. The cost of constructing a
bamboo house with thatch roofing is around K10,000, while timber
construction with metal roof sheeting is K100,000.

D.6.4 Housing Department projects

In order to assess the post-1988 activities in other towns, the projects
prepared but not implemented by HD were analysed. Apart from approximate
estimates given by GAD, this is the only reliable guide to assessing the scale
of the national-level programme. Table D.6.4.1 sets out the complete range
of HD activities.

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<th>1988 town area (acres)</th>
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<th>Area of schemes (acres)</th>
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<td>2 580</td>
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Notes: This data was prepared by the Housing Department. The total population of new schemes as a percentage of the total of the town populations is 22 per cent.

(a) New Town
PART E. RURAL SETTLEMENTS

E.1 Geographical zones and population distribution

The principal geographical zones, which are illustrated in a generalized form on figure E.1.1, are as follows:

A. The western and northern hills - the main catchment for the Ayeyarwady River.
B. The Shan Plateau - an extension of the Yunnan Hills in China, and the catchment for the Salween and Sittang Rivers.
C. The central plains - the upper valley of the Ayeyarwady and Sittang Rivers.
D. The Rakhine and Thanintharyi coastal regions - crossed by tidal water courses.
E. The delta region - lower Ayeyarwady and Salween River valleys.
F. The low hill ranges - the Bago Yoma between the Ayeyarwady and Sittang Rivers, and the Thanintharyi hills between the Andaman Sea and Thailand.

Crude population densities are shown in figure E.1.2.

Myanmar's Burman population occupies the divisions in the central plains and delta regions at the highest densities. The majority of non-Burmans live in the seven border states (Kachin, Shan, Kayah, Kayin, Mon and Chin) which are more sparsely populated.

The share of rural population has remained at 70 to 75 per cent since 1973. The 1988 projections from the 1983 census show a total rural population of 29.8 million people. The combined rural populations of Ayeyarwady and Yangon divisions accounted for 21 per cent of the total rural population in 1983.

Rural to urban migration is slower in Myanmar than in neighbouring countries. This may be due in part to the restrictions on movement imposed by the Government since 1962, and also to a situation whereby the socio-economic pressures which force people off the land are not so strong in Myanmar.

E.2 Land use, ownership and tenure

Of the total cultivated land (14.8 per cent of land area), 2.8 per cent is normally fallow. Unused cultivable waste land accounts for 12.6 percent and 46 per cent of the land area is forest. Forest reserves occupy only a third of the forested area.

Although land reclamation has been attempted, the most recent government policies have emphasized intensification of the areas already under cultivation by double-cropping, the introduction of high-yielding varieties of rice and increased use of fertilizer.

In 1987, 72 per cent of the active labor force was engaged in agriculture, livestock, fishery and forestry. Agriculture alone accounts for over 60 per cent of the total workforce. Paddy cultivation is the predominant activity and although rural cash incomes are low, rice production has strong traditional links with the national economy. Subsistence agriculture is a feature of the more remote parts of the border states.
Under the socialist system which gave the right of tilling to the tillers, the number of large farms decreased so that 61 per cent of all farmers work on holdings of less than five acres. These smallholdings account for one quarter of the land under cultivation. Holdings between 20 and 100 acres are farmed by only 2.5 per cent of farmers and this land represents 14 per cent of the total.

Farmers have been granted usufruct rights on the land they work. These cannot exceed 50 acres per family and rights cannot be transferred. Children who work the land with their parents have the legal right to continue farming it after the death of their parents. Absentee ownership is illegal and if land is abandoned, the village land committees can transfer it to a landless family.

Since 1988, a revision of landownership rights has been under consideration, but a new law had already been enacted to enable farmers to sell their produce on the open market in 1987. Through notification No.6/87 nine crops, paddy, maize, matpe, pedisein, butter bean, suntani, suntapya, pesingon and peyin were declared decontrolled. This rescinded control orders which had been in effect since 1966.

Although the present Government has not made rural land reform an issue in the moves towards the liberalization of the economy, several of the new political parties have declared their intention to introduce measures to grant formal title to those that work the land.

The economics of rice cultivation affect the distribution of population and settlement patterns in the most densely occupied zones.

E.3 Rice Cultivation

As the staple food and major export crop, rice, and its place in the rural economy, plays a major role in determining settlement patterns.

The changing fortunes of paddy farming have been bound up with national history since the time of the Burmese kings who first constructed weirs and canals in the central part of the country to improve the production of rice. Production, prices and exports were at a peak during the colonial period. They fell dramatically during the depression years in the 1930s - the time of the Saya San peasants revolution.

Production was hampered after independence by insurgency activities, but in 1953 the Agricultural and Rural Development Corporation (C) was set up to assist farmers with irrigation, land reclamation and better-quality seeds. Agricultural extension officers encouraged more modern farming methods and an agricultural bank was established to extend credit to farmers. In 1962 the revolutionary Burma Socialist Programme Party (BSPP) seized power. The once-powerful district commissioners were replaced by Security and Administration Committees (SACs). In 1973, the SACs were replaced by elected People’s Councils. Since 1988, the SLORC has reimposed a similar non-elected system.

Between 1964 and 1976, the performance of the agricultural sector was poor and yields had increased by only 0.85 per cent. High-yielding varieties of rice were introduced in 1966/67 with only limited success at first. In 1978, the township special High-yield Programme was started, and by 1983 haa been extended to 82 townships covering 53 per cent of total sown areas. Although sown acreages were the same, production almost doubled as a result of these programmes. No new townships were added to the
Figure E.1.1. Geographical zones (see text for zone key descriptions)
Figure E.1.2. Population densities
Programme after 1982 and, in spite of the earlier successes, farmers were discouraged by the Government's procurement and distribution practices.

Official policy dating from 1948 had three objectives: (a) to assure stable consumer prices with modest incentive levels to producers; (b) to capture rice profits for the State budget; and (c) to assure a low retail price and promote industrialization by keeping wage costs down. However, exports dwindled and the Government again intervened on a large scale.

In 1968, rice distribution was introduced to cover the basic needs of the non-paddy sector by providing 6 py/(28 lbs) of rice per person per month at the same low prices which had prevailed in the early 1960s. To provide for this and the export market, farmers were obliged to sell a part of their output to the Government at a price well below the market price. Farmers who did not meet their quota were subject to sanctions and loss of cultivation right. Those who met their quota were free to sell within their own township. In fact there was no way of knowing how much rice was traded on the free market during this period.

In 1986, a new procurement system was enforced. The Agricultural Farm Produce Trade Corporation (AFPTC) was to procure paddy only for export and distribution to rice-deficit areas from five states and divisions, and the co-operative societies would procure paddy for local consumption from all states and divisions. Because of the relatively low quality of Myanmar rice, the unit value of rice for export in only 75 per cent of the world price. Accordingly, government policy had two new objectives: (a) to improve the quality and production of rice; and (b) to diversify agricultural production. A programme of credit and packages of technical assistance were offered to farmers from the mid-1980s to assist in crop diversification, and 19 other crops were added to the township Special High-yield Programme which ran until 1986.

This brings the account of government agricultural policies back to the 1987 decontrol of crop sales where it began. The same notification allowed every citizen to purchase, transport, store, sell and transact the decontrolled crops in their original state or after milling, and the quota system of direct procurement by the Government was officially ended. However, farmers had to pay land revenue in kind rather than cash, and distribution of rice for government employees was to be carried out by the State. In order to do this at a controlled price, private wholesalers were also liable for taxes to be paid in crops.

Prior to the introduction of this system, land revenue was assessed at rates fixed in 1939, and the annual collection amounted to only K.40 million. Accordingly, a new tax rate had been introduced and assessments were being carried out by the Land Records Department under the supervision of People's Councils at different levels. This work was in progress until September 1988 when SLORC assumed control of the country.

In the year following the 1988 "unrest", the price of rice increased fourfold. The new Government undertook to continue providing rice at subsidized prices for government employees and to "needy" families. However, farmers were reluctant to sell at the low prices offered by the Government.
E.4 Transport

River transport has played a traditional role in both interregional and local transport. Many rural areas depend entirely on country boats and sampans for access to markets and social services.

Bullock-cart transport is widespread in many areas. Although the production of draught cattle has increased gradually since 1983, farmers face a shortage and the risk of outbreaks of foot and mouth disease. Mules and elephants provide transport in the more remote hilly states.

The expense of providing new roads has hampered many rural development projects aimed at opening up new areas to cultivation. Road construction has been a major element of many isolated bilateral- and internationally-funded rural projects.

Just as SLORC had initiated road widening programmes in almost every town in Myanmar, there are reports of comparable projects in the countryside. The following account of local people involved in railway and road construction in Kawlin township in western Sagaing Division is from the English-language daily newspaper (Working Peoples Daily, 13 May 1990):

"The people of Kawlin improved the 7 mile Kawlin-Tungmaw motor road. It is a vital link to Kyaukpahto special metal (2) gold refining plant. We had a talk to local elders and one of them said "the road is vital to us, that is why we are using voluntary service to improve it... some others used their carts to carry... stones from a quarry three miles away. Women also volunteered. Everyday 3000 volunteers and 600 bullock carts toiled hard to complete the road." The motor road began with an allotment of K500,000 from rural development funds and a contribution of K500,000 from the people. But the work cost over K2 million. Therefore the people donated K1 million in addition to the initial contribution."

E.5 Water and sanitation

Enteritis and diarrhoea are the leading diseases among hospital outpatients and second for inpatients. The relation of cholera, typhoid, hepatitis and worm infections to poor water and sanitation conditions is well known to health personnel and engineers but not to the majority of rural population. Myanmar, however, has emphasized the need for improved rural health, including water and sanitation, since the early 1960s.

One positive aspect of the efforts of the Government over the years is that the administrative and technical network is in place to reach the village tract level of local administration. Even though the coverage of water supply and sanitation is still very low, the network permits agencies such as UNICEF to assist the relevant technical departments. National coverage by rural water supply increased from 24 per cent in 1985 to an estimated 30 per cent in 1989 and in sanitation from 21 to 30 percent in the same timeframe.

The high-level policy agency for water-supply, the Water Committee, is currently inactive. The Rural Water Supply Division (RWSD), of the Agricultural Mechanization Department (AMD), implements rural water-supply projects. The Environmental Sanitation Division (ESD), of the Department of Health, provides technical guidance for rural sanitation. It also implements water-supply projects for schools, rural health centres and communities which employ rainwater catchment and storage. The Housing Department plans water-supply projects, and the Public Works Department implements them.
The National Health laboratory within DOH tests water quality and the Health Education Bureau of DOH is responsible for disseminating information.

The existing sanitary conditions for the majority of the rural population remain much as they were described in a thesis written 12 years ago.

".....houses of bamboo, thatch and palm leaves are of poor quality. Domestic animals - pigs, cattle and chickens - are kept under the eaves of the same roof or underneath the houses. The animals, smoke from the stable fireplace, and flies create a poor environment. The main source of water-supply is from Kutch shallow wells and ponds. For excreta disposal there is no system at all. One half of rural people do without latrines, the others have sanitary latrines: surface latrines are serviced by rodents and domestic animals."

In the dry-zone area (Magway and Mandalay Divisions) UNICEF and AIDAB assisted in drilling 3100 deep tubewells. These had been fitted with diesel pumps, many of which were underused through lack of diesel fuel. As an experiment, three solar-powered pumps were provided by UNICEF as a step towards finding alternative sources of energy for pumps.

In response to the Government’s decision to relocate equipment from the dry zone to lower Myanmar, UNICEF continued its assistance as detailed in table E.5.1 in three townships of Bago Division, and part of this programme was redirected to the recent Yangon resettlement areas described in part D of this report.

Table E.5.1 UNICEF assistance - Bago and Yangon

<table>
<thead>
<tr>
<th>Bago Division;</th>
<th>1989 target</th>
<th>August 1989</th>
<th>December 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shallow wells</td>
<td>1000</td>
<td>307</td>
<td>600</td>
</tr>
<tr>
<td>Household latrines</td>
<td>101300</td>
<td>89060</td>
<td>101300</td>
</tr>
<tr>
<td>Yangon resettlement areas;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deepwells</td>
<td>150</td>
<td>182</td>
<td>198</td>
</tr>
<tr>
<td>Household latrines</td>
<td>22638</td>
<td>12240</td>
<td>22638</td>
</tr>
</tbody>
</table>

Gravity-flow water-supply is appropriate and popular in the hilly regions of Myanmar. The technology is not affected by fuel costs and the shortages, which hamper the operation of well pumps. It also lends itself to community participation and the use of local materials. There are significant environmental benefits which have been observed by UNICEF in their work with the Government on the gravity-fed system. The success of the system depends on the capacity of the surrounding hillsides to retain water. Deforestation releases the surface water before it can be captured and silts up the streams which feed the reservoirs.

Engineers trained by UNICEF have been able to demonstrate the negative impact of tree-cutting to rural communities whose gravity-fed water supplies have been restricted in this way, and have had some success in encouraging conservation and reforestation.
The population of villages in Myanmar is typically around 300-400, with interdependences with small towns of 5000-40,000. Studies of regional characteristics in settlement patterns and housing types were not identified by the Mission. The main sources of research work, the relevant university departments, were not available due to the continuing closure of tertiary education institutions. The Urban and Regional Planning Division of the Housing Department has concentrated on the urban sector, and rural interventions are usually made on an isolated sectoral basis by many different government and international agencies.

There is a noticeable absence of the type of high-level regional planning co-ordination which would direct the work of the line ministries and foreign donors which are committed to assistance in rural programmes. The concept of integrated rural development based on settlement characteristics and on the varied needs of communities in different ecological zones is one which could be applied to good effect in Myanmar.

The wood-and-bamboo, thatched-roof house on stilts is no doubt the most popular and the cheapest house for rural households, and for many town dwellers also. The materials can be harvested at no monetary cost if they are to hand and there is a tradition for communal housebuilding in villages.

If no repairs were made, a typical bamboo house would last three to five years. On one hand they are cheap and well ventilated, on the other they are neither waterproof nor fireproof. In Taunggyi, the price of a bamboo house from a builder was quoted at K.8000. The price in the village would be much less.

The 1983 census recorded different types of dwelling, but not access to water and sanitation. Table E.7.1. summarizes from the Shan State returns:

<table>
<thead>
<tr>
<th>Type</th>
<th>Total</th>
<th>Rural</th>
<th>Semi</th>
<th>Wood</th>
<th>Wood and</th>
<th>Bamboo</th>
<th>Thatch</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>30011</td>
<td>17</td>
<td>2191</td>
<td>15.6</td>
<td>1.64</td>
<td>3.2</td>
<td>33.49</td>
<td>22.0</td>
</tr>
<tr>
<td>Rural</td>
<td>20669</td>
<td>52</td>
<td>173</td>
<td>0.8</td>
<td>35.7</td>
<td>1.2</td>
<td>1.85</td>
<td>8.9</td>
</tr>
<tr>
<td>Total</td>
<td>50680</td>
<td>69</td>
<td>392</td>
<td>8.4</td>
<td>5.01</td>
<td>4.4</td>
<td>52.39</td>
<td>30.9</td>
</tr>
</tbody>
</table>

As Taunggyi is the most urbanized township in Shan State, the predominance of wood-and-bamboo-thatched dwellings is clear.

The 1983 census recorded different types of dwelling, but not access to water and sanitation. Table E.7.1. summarizes from the Shan State returns:

<table>
<thead>
<tr>
<th>Material</th>
<th>Private rates (Kyats)</th>
<th>Government controlled rates (Kyats)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamboo pole - 6&quot; x 30'</td>
<td>50 (village price)</td>
<td>-</td>
</tr>
<tr>
<td>Bamboo shingles \textit{wagud} - 8' x 1' length</td>
<td>2.25</td>
<td>-</td>
</tr>
<tr>
<td>Bamboo wall mat - 10' x 10'</td>
<td>25 (village price)</td>
<td>-</td>
</tr>
<tr>
<td>Teak</td>
<td>3700 (50 cu. ft/ton)</td>
<td>2700 (ton)</td>
</tr>
<tr>
<td>Pyinkadoe</td>
<td>3500 (ton)</td>
<td>2000 (ton)</td>
</tr>
<tr>
<td>Cement per sack</td>
<td>300</td>
<td>150</td>
</tr>
<tr>
<td>M/S Re-bar</td>
<td>3000 (ton)</td>
<td>20,000 (ton)</td>
</tr>
<tr>
<td>Brick</td>
<td>-</td>
<td>1.25 each</td>
</tr>
</tbody>
</table>
Table E.7.3 Cost of typical house types at Taunggyi, 1990 (Kyats)

<table>
<thead>
<tr>
<th>House Type</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>20’ x 30’ Thatched bamboo</td>
<td>8,000</td>
</tr>
<tr>
<td>20’ x 30’ Brick-work and CGI roof</td>
<td>100,000</td>
</tr>
<tr>
<td>20’ x 30’ Timber and CGI roof</td>
<td>80,000</td>
</tr>
</tbody>
</table>

A study made as part of the UNCHS (Habitat) Rangoon project included an improvable house design for the Taikkyi Site-and-Service Project. Taikkyi was a township centre of 27,000 people in 1983, 45 miles from Yangon. The cheapest model was a bamboo house of 10’ 6” x 31’, as illustrated in figure E.7.1. Other versions of the same plan were proposed using different combinations of more permanent materials. This approach is widely applied by private housebuilders.

**E.8 Border area development**

SLORC has given priority to a planned programme of border development and has requested key United Nations agencies to participate. UNDP, WHO, FAO, UNICEF, UNCDF and UNFDAC have all been approached.

This is a particularly sensitive subject involving long-standing conflicts between successive Governments and insurgent minority factions in the border states. Another facet of border development involves poppy cultivation, drug traffic and various forms of smuggling.

Border area development is a parallel rural equivalent of the urban resettlement programmes initiated by SLORC as described in this report. Resettlement sites are already identified in each of the “sensitive” border states. The Mission was not able to confirm whether any of these have been finally planned and detailed layouts for new settlements prepared. Two groups of people will be eligible for resettlement: (a) insurgents who have voluntarily given themselves up - these are the so-called “welcome” sites; and (b) villagers who have been displaced by military action between the army and the insurgents.

United Nations agencies have been cautious in making commitments to border area development, but regular meetings are held to monitor the situation. The outcome of the elections will determine any future action. In the sense that many of these remote areas have very low levels of basic services and have previously been denied access for donor activities, there may be opportunities for extensive development assistance. One of the proposed projects is integrated rural development and this could offer scope for future UNCHS (Habitat) participation.

**E.9 Urban to rural resettlement - Yangon**

The component in the Yangon resettlement programme which has been most controversial is that concerned with relocation of certain urban communities to sites as much as 50 miles from the city. It is understood that these groups could not afford to make the downpayments on the plots in the

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new peripheral township areas, or for political reasons were moved to rural areas where activities could be better controlled by the authorities.

Although the Mission was not able to inspect the sites, information was provided through HD, which had been requested by the Government to prepare layout plans for:

- Ngasu Thung (on Prome Road) 940 plots
- Aye Mya Thaye (on Phaungyi branch off Bago Road) 712 plots

Other sites are at Daik-U, near the town of the same name, and at an unconfirmed location near Okpo.

The Mission was advised by HD that the original combined capacity of 1652 plots for the first two sites has since been increased to a figure in the order of at least 5000 plots. The Daik-U and Okpo locations, from anecdotal evidence, would not total less than 2000. In addition, a small resettlement site in a rural location, but accommodating households from Bago, was located by the Mission about 10 miles south of Bago. The capacity was given by the residents as 250 plots.

These resettlement schemes are designed as new rural communities. Plots were initially intended to be at least one acre in area, but it is understood that some subdivision is occurring. There is little reliable information available but the consensus is that:

(a) The households feel discriminated against, and would prefer to be offered affordable plots in Yangon;
(b) There is uncertainty with respect to security of tenure;
(c) Water-supply, sanitation, health care and education is being provided at much lower stands than in the Yangon resettlement schemes;
(d) There is inadequate support for smallholding agriculture and animal husbandry which is intended to be the economic base in the new locations.

There can be little doubt that this programme, as a component in the larger relocation exercise in Yangon, has been hastily conceived, poorly serviced and is causing major hardships to the communities concerned, including exposure to severe health hazards.

The Mission received no guidance of whether similar relocation operations from urban to rural areas had been undertaken in other urban centres.
Figure E.7.1 Model rural / Small Town House Design
PART F. RECOMMENDED PROGRAMME

F.1 Synthesis of development needs

The current needs of the human settlements sector in Myanmar, in common with all aspects of development, are being generated by three converging factors.

(a) The inherited problems and opportunities building up over 26 years of political and economic isolation, involving the neglect and misuse of natural and human resources, the dampening of public service initiatives and technical intercourse, the lack of recognition by minority groups of the legitimacy of successive regimes, the evolution of a parallel informal economy, the recent opening-up of the official economy and promotion of a formal private sector, drastic policy swings without sustained follow-up of the resultant development initiatives, preservation of traditional close urban-rural interdependencies, slow urban growth rates, and relatively low-density uncongested urban areas;

(b) The socio-economic and physical impact of the 1988 trauma experienced throughout all settlements, and specifically the disruption of life in the major urban centres resulting from the implementation and after-effects of the 1989/90 public works and resettlement programme;

(c) The outcome of the 1990 general elections, leading to the timing and form of the transfer of powers to a multi-party Parliament, the effects on public administration systems and specifically urban and rural local government, the resultant responses of donors and the interest of the new or adjusted Government in continuing, diversifying and expanding development assistance.

Rather than attempt to formulate alternative scenarios and predict the needs of a future Government, the Mission has concentrated on the more easily isolated remedial and promotional opportunities presented by the post-1988 settlements-related activities and the similar mass relocation programmes undertaken in Yangon in the late 1950s. Attention is, however, given to the needs generated by the economic reforms already introduced prior to September 1988, particularly with respect to an expanded private sector within a more open economic climate.

Although there are strong linkages between all levels of needs, for the purposes of identifying the primary sources of problems and targets for benefits, the needs are classified into sets under:

(a) National
(b) Rural
(c) Metropolitan regions
(d) Secondary towns

F.1.1 National

In the absence of national urban and shelter policies which take account of the far-reaching implications of the post-1988 public works programmes, there is no strategic framework for allocating capital investment and operational priorities. With no specific government body responsible for rural housing and settlement planning, there is an institutional gap with respect to the co-ordination of irrigation, agriculture, forestry, water supply and social
services as they relate to the distribution of population and the equitable delivery of social benefits. The spatial dimension in socio-economic planning is lacking. Within the Housing Department, the Urban and Regional Planning Division is not operating at the regional level, being mainly concerned with urban plans, layouts for expansion schemes and subdivisions. The original scope of the first UNDP/UNCHS (Habitat) project, which, as the title suggested, was set up to address the complete Rangoon region, was later reduced to concentrate on the city proper.

The liberalization of the economy, particularly with respect to joint ventures, will require firm policies on the location of industries, on the prioritized upgrading of infrastructure, and on environmentally sustainable development systems.

In order fully to exploit economic initiatives and mobilize savings, the introduction of financial institutions geared to the regulated growth of a formal private sector will need to be addressed. The notion of credit as a basic need deserves promotion, with the development of community-based arrangements throughout both the urban and rural areas.

The embryonic private construction industry lacks organized support. Country-wide distribution and marketing of construction materials and components in the context of a dwindling parallel unofficial economy requires new forms of Government interventions, linked with national-level programmes for the development of improved materials and technologies.

Arising from the above analysis, specific needs at the national level are identified as:

(a) Improved population and household data collection and analysis, including household-income and expenditure surveys, geographically specific and incorporating the effects of the post-1988 population redistribution programmes for the complete set of urban centres affected;

(b) National budgetary data reflecting the outlays from all concerned agencies, for the post-1988 public works programme;

(c) Training in household-survey techniques and processing as a complementary component to conventional census activities;

(d) A capability for formulating a national housing policy in support of an integrated planning perspective for urban development;

(e) A capability linked to (d) above for incorporating a spatial dimension into socio-economic planning based on regional plans which should take account of a likely future semi-autonomous federal arrangement for groupings of states and divisions;

(f) The introduction of area development programmes which, although having an agricultural or forestry base, seek to exploit the trade-offs with other sectors and to promote the consolidation of settlements as service centres;

(g) The development of financial institutions, particularly savings-and-loan arrangements for both urban and rural housing, linked to initiatives in community development and co-operatives but involving national-level regulatory and initial funding mechanisms;

(h) Support for the necessary adjustments in the currently immature small-scale construction industry to assist in responding to the needs of a more open, competitive market;
(i) Improvements in the local-government financing systems, clarifying and codifying the arrangements for central-government transfers and examining performance-related mechanisms for determining levels of grants, and investigating opportunities for a financial intermediary for municipal funding.

**F.1.2 Rural**

Much of the analysis at the national level has direct application to the rural situation. Rural settlements are currently treated in a sectorally fragmented manner. The interdependencies of housing, social and physical infrastructure and economic activities, in a country where the links between small rural towns and their rural catchments are still mutually beneficial and equitable, deserve sensitive handling. This may be a critical issue in the face of a rapid transition to a market economy and the possibility of a free rural land market.

Considerable donor support has been given to water supply and sanitation, but, as yet, "rural settlements", as a comprehensive village-level development topic, has not been addressed. In the context of watershed degradation through uncontrolled logging, an integrated approach to settlement and forestry will be important. The Government's policies for the intensification of rice production, the opening-up of new land for cultivation and agricultural diversification raises the need for the planned expansion and relocation of settlements, land allocations, the supply of construction materials, innovatory construction techniques, and the provision of essential services.

The major new government initiative affecting area-specific rural development is the decision to open up the border states for donor-assisted activities. Support has been requested through UNDP and UNCDF, among other donors, for water supply, feeder roads, hydel schemes, forestry and health services. No one Government body appears to have been given responsibility for co-ordinating the separate elements. As a potentially highly important, although sensitive development, bringing services into remote areas with fragile cultural and environmental conditions, this programme deserves high priority and extremely careful planning.

As mentioned earlier, the Mission had restricted opportunities for travelling in rural areas, for visiting villages and obtaining first-hand material on current conditions. Furthermore, likely valuable sources of research material, the university and related institutes, were closed down, and staff were difficult to contact. The following list of specific needs has, therefore, less substance than would be expected in a human settlements review covering both urban and rural sectors:

(a) Additional emphasis on rural living conditions, through the allocation of housing as an integrated development topic, to a specific department in order to provide both a development and a co-ordinating function (following the reduction in the scope of the work of the Housing Department and within its new mandate as the Department of Human Settlements and Housing, this additional role could be incorporated);

(b) The improved capability to exploit the mutually supportive components in rural area development programmes, with particular attention to the relationships between changes in farming and forestry patterns, rural settlement planning and house construction technologies;
(c) Advance planning to deal with probable rural land reforms, addressing assessments for purposes of taxation and acquisition, price regulation, and improved record systems taking account of the issuing of titles and likely increase in transactions (an associated review of the legislation dealing with the thresholds for municipal status as it affects small rural centres would also be appropriate);

(d) A sensitively planned comprehensive programme to introduce progressively basic-needs provisions to previously underserviced remote border areas, respecting ethnic backgrounds, housing and settlement patterns and with an environmentally sustainable development approach (meeting this need presumes a cessation of the military activities in these areas together with a political settlement following the installation of a new Government under a mutually-acceptable constitution);

(e) An independent assessment of the conditions in the rural resettlement schemes accommodating communities relocated from Yangon, with a view to supporting physical, social and economic improvements, and providing options for moving back to Yangon and occupying plots in the urban resettlement areas.

F.1.3 Metropolitan regions

Both Yangon and Mandalay are reaching a size, complexity and sphere of influence that merits a planning approach which takes in a study area larger than the officially gazetted city areas. There is no legislative or administrative basis for such a regional approach, unless the divisions themselves are given metropolitan status. Although the Yangon Division would lend itself geographically to such a move, the location of Mandalay City adjacent to the divisional boundary, and the configuration of the Division as a whole, would rule out conversion to a metropolitan area.

The scope of the post-1988 road and resettlement programmes in Yangon is such that a wholesale reassessment of the structure plan, the pre-1988 road programmes and the previously identified water and sanitation priorities is urgently required. The expansion of the city to the east and west on low-lying flood-prone areas raises new problems relating not only to the drainage of the new housing schemes but also to the overall surface-water management for the city and environs. Fresh priorities for public transport have been generated, linked to the need for new and improved river crossings. The scope of operations and maintenance programmes and the potential revenue base has been drastically affected by the mass relocation of squatters.

The problems of large-scale underserviced areas occupied within a short period highlighted by the post-1988 resettlement operations has had the effect of drawing attention to the deteriorating environmental conditions in the satellite towns developed under similar circumstances in the late 1950s. If a critical public-health situation is to be avoided, a combined upgrading programme for a population in the order of 1 million is required. This includes about 200,000 in substandard areas which have not been cleared, and about 400,000 in the earlier resettlement schemes.

In order to accommodate the public transport needs generated by the redistributed population, the existing Yangon City circular railway requires both technical and management attention.
The Mandalay situation is less critical than that of Yangon, in that the resettlement operation, although large in relation to the city population, has been incrementally implemented and there are reportedly no seasonal flooding problems in the new resettlement areas. The major need to be met is that resulting from the installation of a donor-assisted city-wide water supply scheme without a parallel complementary sewerage and drainage system. The post-1988 circular rail system is operational but not designed in terms of speed or capacity to meet the long-term needs of the population in the resettlement areas to the south-east of the city.

Mandalay is in urgent need of institutional and legal reforms which would match the provisions for Yangon. MCDC stresses the requirement for a complete review and update of the 1978 structure plan, and assistance in training for urban planning.

Specific needs identified for both cities are:

(a) Reformulation of the approved, but not effectively commenced UNDP/UNCHS (Habitat) Yangon project to take account of the recent developmental and institutional changes;

(b) Development plans for both cities which address metropolitan regional catchments, and overall city management, including resource mobilization, urban operations generally, human-resource development, and feasibility studies aimed at attracting external capital investments;

(c) Priority interventions to gain across-the-board incremental improvements in water supply, sanitation and drainage, targeted at the resettlement zones, and linked to the proposed UNCDF assistance and the World Bank-executed UNDP project study components and IDA credit, and involving intensive health education and community participation;

(d) Support for small-scale industries in the Yangon and Mandalay post-1988 resettlement areas, exploiting the mass-market cut off from easy cheap access to previous commercial and manufacturing sections of the cities, and harnessing the demand for water supply and sanitation materials and components, and assistance in dwelling construction and improvements;

(e) Incremental installation of computerized land-information systems and financial-management techniques, accompanied by the associated training, and covering valuations, accounting, and operations/maintenance technology and administration.

F.1.4 Secondary towns

The Mission obtained relatively little information on the smaller urban centres. The needs identified are based on brief visits to Taunggyi and Bago, supplemented by interviews. From HD and GAD it was ascertained that the servicing problems being experienced in Yangon and Mandalay throughout the post-1988 resettlement schemes are replicated in many other towns. Within the previous developed areas, including the historic cores, high densities and the resultant congestion leading to problems of access and waste disposal are comparatively rare.

A major issue arising from the programme of donor-assisted water-supply projects in secondary towns (see section B.9) is the lack of co-ordination with sanitation and drainage. According to GAD, road maintenance, which is closely connected to drainage conditions is in need of urgent attention.
There is apparently no shortage of adequately qualified and trained administrative staff, given the current management systems and record-keeping methods. Improved systems, enabling centralized data management in Yangon for national accounting purposes will, however, require training inputs. Physical infrastructure design, implementation, and operation/maintenance in the smallertowns is in need of a systematic review with respect to priority setting and human-resource development.

Specific needs are:

(a) A comprehensive review of the legal and institutional provisions of the Municipal and Towns Acts leading to possible consolidation with a single status for all municipalities below that of city level;

(b) An assessment of the physical infrastructure and institutional capacity in all municipalities and towns, taking account of the post-1988 public works programmes, in order to prioritize needs and better co-ordinate the donor-assisted projects (particularly attention needs to be given to the scheduling of water-supply, sanitation and drainage improvements);

(c) Support for integrated development planning, concentrating on physical improvements matched with assistance in institutional strengthening, and covering project preparation, enhanced resource mobilization, and more effective programming and budgeting.

F.2 Programme summary

The Government has demonstrated that under military-style management there is the capacity to design and construct a nation-wide public works programme without external technical assistance and with domestically mobilized capital resources. Although capital funding for the post-1988 programme has been supported by the income received from concession agreements with foreign private interests, there was an important element, albeit obligatory, of self-financing from advance payments from residents of the resettlement schemes.

Under the current atmosphere of uncertainty with respect to the form and timing of a new elected Government, it is difficult to determine the share of the recommended programme that could be sustained without capital and technical assistance inputs. The Mission considers that there is the institutional capacity within HD, YCDC and MCDC, and GAD to absorb an expanded programme. GAD has stated that the problem has been obtaining approval for increased establishments, rather than finding qualified technical and administrative staff to fill the posts. However, with the continued closure of all tertiary education institutions and the break-up of the student population, any examination of increased outputs, training potential and introduction of new in-country courses was severely constrained.

A further factor in assessing absorptive capacity is the historical role of the public service since independence. Below the top-level core of decision-makers, all initiative among technical and administrative cadres has been stifled to the point where there is little or no upward movement of proposals for technical, procedural, or policy reforms. A more open management system would unleash an as yet undetermined degree of dialogue and innovation, commensurate with the generally high level of education, experience and expertise currently locked up within the public service. A new Government is also likely to attract back to Myanmar many highly skilled nationals lost in brain-drains during the periodic relaxations of exit restrictions. These professionals would make a significant impact on the capacity of top management in both public and private sectors and in various fields of education and training.
Under these circumstances, the Mission has formulated a preliminary programme which is limited to technical co-operation projects, within which national personnel would in many cases play dominant roles. Specific programme components which would be appropriate for implementation without external support are not identified, nor is any attempt made to identify capital-assistance needs other than confirming the importance of maintaining the currently programmed World Bank and UNCDF project contributions.

In the detailed formulation of a technical co-operation programme for the human settlements sector, it will be important to review closely the complementary components within the World Bank-executed UNDP projects, MYA/86/012 and MYA/88/045. The reappraisal of the World Bank/IDA project "Infrastructure Rehabilitation" will provide opportunities to co-ordinate capital investment and policy study activities taking account of post-1988 Government's initiatives. Similarly, the planned review of the UNCDF pre-investment project, MYA/88/047, should not only establish the current priorities within the package of UNCDF capital assistance, but should also promote examination of the mutually supporting roles of United Nations agencies, the World Bank and the other donors.

Taking account of the projects already approved or awaiting approval subject to reformulation or reappraisal, the key items of the recommended programme, identified in response to the needs set out above, are as follows:

(a) Support for the human settlements programme monitoring and co-ordination cell (new project);
(b) Rangoon metropolitan region integrated development project (reformulation of BUR/85/016);
(c) Mandalay metropolitan region integrated development project (new project);
(d) Secondary towns integrated development project (new project);
(e) National construction industry adjustment project (new project);
(f) National housing finance project (new project);
(g) Relevant components of Programme for Pre-Investment and Investment Assistance Phase IV (Myanmar Umbrella IV) (MYA/86/012):
   - Water and sanitation sector review (whole country)
   - Yangon traffic engineering study
(h) Relevant components of Institutional Strengthening of Infrastructure Agencies, (MYA/88/045):
   - YCDC "unaccounted for" water management;
   - YCDC overseas training for cost accountants;
   - YCDC/GAD training for workshop staff;
   - YCDC/GAD overseas study visits for water-supply and sanitation technology;
   - GAD project monitoring and data management;
(i) Relevant components of Umbrella Support Services for UNCDF Programme (MYA/88/047):
   - Sites-and-services for low-cost housing (project formulation for provisional allocation of $US2 million in MYA/88/008);
F3 Support for programme monitoring and co-ordination

The scale and complexity of the potential human settlements programme is such that consideration will need to be given to support through UNDP to a co-ordination and monitoring cell. Counterpart attachment would need to be at a level sufficiently high to enable cross-sectoral control. With this in mind, the cell would preferably be based in FERD under MOPF.

Within both the Government and UNDP, there is currently no core of expertise qualified to steer the wide range of existing and possible future projects through a co-ordinated process of identification, formulation and, in some cases, reappraisal and reformulation. During 1990/91, UNCHS (Habitat), UNCDF, World Bank, AsDB and several bilateral agencies will be involved in project design and redesign in a climate of uncertainty under the current regime or drastic reorganization under a new parliamentary Government. AsDB may, for example, take up the proposals to extend the water-supply project in Mandalay to cover sewerage and drainage. JICA is involved in a programme of water-supply schemes for secondary towns.

The proposed arrangement for a co-ordinator recruited by the World Bank for projects MYA/86/012 and MYA/88/045 and the IDA Infrastructure Rehabilitation Project would not, even if expanded in scope, be an appropriate solution, given the need to oversee the projects of AsDB and bilateral agencies and to advise the Government on alternative sources of capital funding. Taking account of the considerable experience within UNCHS (Habitat) for executing Phase I of the Rangoon project and its likely major role in formulating and managing new projects, a UNCHS (Habitat)/UNDP approach would appear to be preferable for providing technical assistance for a co-ordination and monitoring cell. Whether this would involve a resident full-time position or a series of separate inputs is subject to further discussion with the Government on the matching level of counterpart provision. However, assuming the scale of the programme proposed in the following sections, a full-time expert adviser position is recommended.

A full description and assessment of this project as currently designed is provided in section C.5. It is recommended that it be reformulated under the title of "Yangon Metropolitan Region Integrated Development Project", but that UNCHS (Habitat) proceed with the recruitment of the Chief Technical Adviser.

The project would retain the component concerning the review of the structure plan prepared under the earlier phase, but would incorporate a thorough assessment of alternative planning methodologies appropriate for...
the needs for immediate actions rather than automatically accepting the
conventional structure plan approach.

Reformulation will involve a reorganization of the counterpart
arrangements reflecting the shift from the Housing Department to YCDC,
and taking account of the new rules and responsibilities assigned to these
organizations under the City of Yangon Development Law, 1990.

The components dealing with clay-tile and timber-material technologies
would be deleted and incorporated within the proposed new
construction-industry project. Pilot demonstration sewerage schemes and
pilot sites-and-services subprojects are not considered appropriate, given
the post-1988 events. It is recommended that capital investments be more
appropriately undertaken within the related UNCDF project.

By being attached to YCDC, the project will be in a position to integrate
spatial planning with overall city management, and overcome some of the
planning weaknesses faced in the first phase as highlighted in section D.4.

Priority would be given to mobilizing resources, both domestic and
foreign, for the design and implementation of a programme for rehabilitating
both the 30-year-old resettlement areas and the recent sites-and-services
programmes commenced in 1985 and then expanded through the post-1988
squatter clearances. This programme would need to be formulated in the
context of a surface-water management study which would examine
drainage patterns throughout the metropolitan region and include detailed
flood-protection measures for the new resettlement zones. An associated
component would be support for small-scale industries in order to strengthen
the economic base of the new residential areas.

As part of the urban-management concerns of the project, advisory
services and training would be provided in a wide range of topics including
multi-sectoral investment programming and integrated land-information
systems. The project would be required to advise on personnel management
and to conduct a programme of in-country and overseas training activities.
A further component would be a study of the land and housing markets, with
an assessment of the impact of the post-1988 resettlement programme.

With respect to the metropolitan-level strategic-planning activities, the
issue of expanding the city boundary to coincide with that of the Yangon
division would be addressed. It is understood from YCDC that this option is
already under consideration.

This project in its original form is written into the appraisal report for the
IDA Infrastructure Rehabilitation Project as a supporting
technical-assistance component. Within the World Bank-executed UNDP
project for Institutional Strengthening of Infrastructure Agencies, a study
addressing "unaccounted for" water is already included, with UNCHS
(Habitat) designated as the executing agency. It is strongly recommended
that the IDA reappraisal and the reformulation processes for all projects
supporting YCDC be undertaken as a combined single exercise.
F.5 Mandalay metropolitan region integrated development project

This project would have similar objectives and scope to that for Yangon. It would preferably be attached to MCDC as the counterpart institution, although HD could have an associating role to provide planning support. As for Yangon, a broad urban-management approach would be required which balances physical planning and action project formulation with a thorough examination of ongoing operation and maintenance commitments, resource mobilization and improved financial management.

Key issues to be addressed are:

(a) The identification of a metropolitan study area incorporating the urban centres of Amarapura and Sagaing together with surrounding smaller towns, and proposals for a consolidated programming and budgeting system which would seek to co-ordinate investments at the metropolitan region level;

(b) The expansion of the Mandalay City boundary to include the post-1988 resettlement areas, and the introduction of legislation and associated regulations to provide a formal city status to match the current provisions for Yangon;

(c) The development of the master plan for sewerage and drainage and the mobilization of the required external capital funding.

In formulating the project, close consultation with AsDB is needed in order to explore opportunities for continuity between the water-supply scheme already implemented and the possible future participation of AsDB in a sewerage and sanitation project.

There is insufficient material available to determine the scope of this project in terms of the number of towns to be included and the criteria for selection. According to GAD and HD, there is, however, a clear need to provide support. GAD suggests that urban centres with populations above 100,000 should be given priority. If this approach is adopted, the following eight towns would be considered in a shortlisting:

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mawlamyine</td>
<td>260,000</td>
</tr>
<tr>
<td>Bago</td>
<td>172,000</td>
</tr>
<tr>
<td>Pathein</td>
<td>158,000</td>
</tr>
<tr>
<td>Taunggyi</td>
<td>140,000</td>
</tr>
<tr>
<td>Monywa</td>
<td>128,000</td>
</tr>
<tr>
<td>Sittwe</td>
<td>122,000</td>
</tr>
<tr>
<td>Meiktila</td>
<td>117,000</td>
</tr>
<tr>
<td>Mergui</td>
<td>107,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,204,000</td>
</tr>
</tbody>
</table>

It is recommended that a preparatory assistance arrangement be adopted to assess and prioritize needs and determine the project scope. The approach, however, in general terms, should follow that recommended for the Yangon and Mandalay projects. In selecting criteria, account should be taken of building on current water-supply projects. The need for support identified by the Mission in interviews with GAD and HD is sufficiently urgent for the selection exercise to be undertaken without awaiting the outcome of any national-level planning exercises.

Particular attention will need to be given to the municipal capital-funding mechanisms for the secondary towns, possibly involving the setting-up of a financial intermediary institution. Given the potential for a programmed approach for a capital-assistance project, project formulation should be carried out in close consultation with prospective lending agencies.

F.6 Secondary towns integrated development project

There is insufficient material available to determine the scope of this project in terms of the number of towns to be included and the criteria for selection. According to GAD and HD, there is, however, a clear need to provide support. GAD suggests that urban centres with populations above 100,000 should be given priority. If this approach is adopted, the following eight towns would be considered in a shortlisting:

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mawlamyine</td>
<td>260,000</td>
</tr>
<tr>
<td>Bago</td>
<td>172,000</td>
</tr>
<tr>
<td>Pathein</td>
<td>158,000</td>
</tr>
<tr>
<td>Taunggyi</td>
<td>140,000</td>
</tr>
<tr>
<td>Monywa</td>
<td>128,000</td>
</tr>
<tr>
<td>Sittwe</td>
<td>122,000</td>
</tr>
<tr>
<td>Meiktila</td>
<td>117,000</td>
</tr>
<tr>
<td>Mergui</td>
<td>107,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,204,000</td>
</tr>
</tbody>
</table>

It is recommended that a preparatory assistance arrangement be adopted to assess and prioritize needs and determine the project scope. The approach, however, in general terms, should follow that recommended for the Yangon and Mandalay projects. In selecting criteria, account should be taken of building on current water-supply projects. The need for support identified by the Mission in interviews with GAD and HD is sufficiently urgent for the selection exercise to be undertaken without awaiting the outcome of any national-level planning exercises.

Particular attention will need to be given to the municipal capital-funding mechanisms for the secondary towns, possibly involving the setting-up of a financial intermediary institution. Given the potential for a programmed approach for a capital-assistance project, project formulation should be carried out in close consultation with prospective lending agencies.
The project would support the construction industry at the national level in the adjustment to privatization, taking into account the removal of the monopoly previously enjoyed by the Construction Corporation for undertaking Government contracts, the promotion of private companies and the invitations for joint ventures with foreign commercial interests.

The scope requires further intensive study, but the range of activities would be likely to cover:

(a) The setting-up of a national representative body for furthering the interests of the industry, advising on legal aspects and insurance, registering firms, material testing and controlling standards;

(b) Training programmes for company management, including company law, financing, bidding and accounting methods, subcontracting, estimating, site management, personnel administration, and building-trade skills;

(c) Loans for working capital and credit lines for small-scale contracting businesses;

(d) Research and development for new and improved building materials, components, and construction techniques, including market research and distribution studies.

It is recommended that this project exploit the joint expertise of agencies such as UNCHS (Habitat), UNIDO and UNCDF. The clay-tile and timber-technology components currently with project BUR/85/016, and for which valuable preparatory research has already been carried out under project BUR/80/005, more appropriately belong with a project such as this which addresses the national needs of the industry as a whole. UNIDO expertise would allow the examination of opportunities for joint ventures with foreign companies for research and development, together with associated pilot workshops and production test runs. Risk capital for such activities could be sought from the foreign joint-venture sources linked to licences for manufacture and distribution.

In the absence of appropriate financial institutions, the need has been identified in conjunction with HD for a project which would assess alternative approaches and support the installation of one or more organizations to respond to the growing demand for both conventional mortgage finance, and for individual and collective community-based credit systems. The demand would be generated by the liberalization of the economy and by the sudden massive house-building programme resulting from the post-1988 resettlement operation throughout most of the urban centres.

There would be need for a national body to guide and co-ordinate the programme, and to mobilize and distribute seed capital. There will be a need for intensive training and staff exchanges in overseas institutions and in successful organizations in neighbouring countries, such as, at one end of the credit spectrum, the Thai Government Housing Bank and, at the other, the Bangladesh Grameen Bank.

At the national level in response to the need for support in integrating the spatial dimension in socio-economic plans and improving household data, a small-scale project for the provision of several advisers is recommended. This would be supplemented by overseas fellowships. The advisory services would also provide assistance in examining opportunities for improving the financing systems for local authorities, including performance monitoring.
mechanisms and methods for determining levels of central-government transfers. There would be a strong linkage with the secondary towns project with respect to exploring the need for municipal funding through a financial intermediary institution.

F.10 Support for rural resettlements planning and development and regional planning

This project would also involve relatively small-scale inputs and would be supported by overseas fellowships. The removal of Yangon City operations from HD, and the reorganization as the Department for Human Settlements and Housing provides an opportunity for this Department to expand into regional planning and rural housing in accordance with its continuing mandate.

It is envisaged that the Department, with support from several foreign experts, would develop a capability to advise agriculture and forestry projects (particularly those attempting an integrated area-based approach) on the role of population distribution, social aspects, settlement location and layout, and housing design and technology.

The project would also support specific studies on rural housing, taking account of regional characteristics, and trends in construction-material supply and costs. Particular attention would be given to developing environmental impact study methodology and ensuring appropriate resettlement provisions are made for those affected by major hydel, mining or agricultural expansion projects. In this sense the Department would provide a specialized technical service to those sectoral departments having the primary project responsibilities.

In response to the likely future requirement for a level of planning serving the introduction of a more autonomous status for divisions and states, the project would assist in strengthening the Department's regional planning and development capability. The institutional attachment for this activity will need special attention during project formulation, given the as yet undetermined policy for planning at regional level, whether in relation to ecological zones or administrative units.
Annex I

Squatter locations and resettlement programmes in Yangon

(a) Background

Between 1958 and 1961, massive squatter relocations involving 60,000 households established the procedure of providing site-and-services plots to squatters who have to be resettled. Similarly, outbreak of fires, mainly in the squatter areas, have provided for reploting of the old sites wherever possible.

The policy gradually changed due to population increase, scarcity of developed land nearby and security considerations. Starting from the big fires which occurred in late 1986, fire victims, mostly squatter families, were relocated to places other than their own areas, e.g., the Seinpanmaying, Kamayut, Hlaing and Patheinnyunt fire victims were relocated at Hlaing Tha Ya new settlement (1st Phase - 3500 plots). It also included a large number of squatter families. However, this relocation took a long time, 1986 to 1988/89.

When the SLORC Government took over, this policy of relocating in new settlements was continued. The pace was greatly intensified with the adoption of the Squatter Clearance Scheme to implement the task of evicting squatters from:

(a) Vacant public land;
(b) Government premises such as factory compounds, railway yards, railway tracks etc.;
(c) Private lands, needed for public uses, i.e., schools, markets, roads;
(d) Areas and compounds designated for religious purposes.

The vacated squatter areas were used for the following purposes:

(a) Widening roads;
(b) Extension of factories and other facilities;
(c) Extension or consolidation of existing government offices and other administrative uses;
(d) Security reasons;
(e) Beautifying the city, i.e., parks and gardens;
(f) Land was cleared of conflicting uses, such as squatters in religious compounds, squatters in undesirable places like cemeteries, hazardous places close to factories and railway tracks.

Number of squatters affected

Since no accurate data were readily available (the different ministries and departments, and RCDC handle their own lists of squatters in their jurisdiction) and no overall data are accessible, the number of squatter households affected could only be roughly checked and confirmed from the receiving end, i.e., the new township plot allocations and dates of occupations, are available and published in newspaper articles, as follows:
Figure 1.1 Existing squatter areas and clearance locations
(read in conjunction with section(e), annex 1)
(a) Squatter relocation after 1988

<table>
<thead>
<tr>
<th>Location</th>
<th>Plots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shwe Pyi Tha</td>
<td>7500</td>
</tr>
<tr>
<td>Hlaing Tha Ya (Phase II):</td>
<td>26 500</td>
</tr>
<tr>
<td>Waibagyi</td>
<td>1 800</td>
</tr>
<tr>
<td>Dagon Myo Thit</td>
<td>12 000</td>
</tr>
</tbody>
</table>

Total: 47 800

(b) Squatter relocation between 1986 and 1988

<table>
<thead>
<tr>
<th>Location</th>
<th>Plots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hlaing Tha Ya (Phase I):</td>
<td>3 500</td>
</tr>
<tr>
<td>Htauk Kyaunt</td>
<td>1 640</td>
</tr>
<tr>
<td>Padamya</td>
<td>13 40</td>
</tr>
<tr>
<td>Myayadana</td>
<td>600</td>
</tr>
<tr>
<td>Gyi Pwa Ye</td>
<td>1200</td>
</tr>
<tr>
<td>Thimanda</td>
<td>160</td>
</tr>
</tbody>
</table>

Total: 8 440

(c) Squatters currently in the city

Estimated at 32,000 squatter households including the squatter land reassembly projects in Dawbon and Dala.

(b) Findings of its Survey

Based on a rapid site survey of squatter areas, the following facts can be summarized:

(a) The overall figure of squatter dwellings/households involved in the massive squatter clearance scheme carried out from late-1988 until the present time can be estimated at about 43,000;

(b) Another 8500 households can be added for the schemes carried out between 1986 and 1988. (Hlaing Tha Ya resettlement: 3500, and the northern resettlement areas of Padamya, Myayadana, Htauk Kyaunt, Gyi Pwa Ye, Thimanda: 5000);

(c) Squatters still remaining in the city have been briefly identified, and an estimate of 32,000 dwellings/households has been made. This figure includes the squatter land reassembly being currently carried out;

(d) The same 43,000 squatters have been resettled since late-1988. This compares well with the official figures given for new plots in the satellite towns of Hlaing Tha Yar (26,500), Dagon Myo Thit (12,000), Shwe Pyi Tha (7500), and Waibagyi (1800), totalling 47,800;

(e) Another dimension is the allocation of plots to public-service personnel in Dagon Myo Thit. Altogether, about 28,000 to 30,000 plots have been allotted by the respective departments and ministries, and building activities are being feverishly carried out. Although it will ease the doubling-up and over-crowding of extended families and rental dwellings, a lot of the houses will be second homes;

(f) Most of the squatter areas are widely distributed throughout the city in obvious squatter locations, i.e., vacant land beside river banks and railway tracks, and between buildings, on both government and private lands. However, after the current Squatter Clearance Scheme, the most "visible" squatter areas have been removed;

(g) According to the newly created Yangon City Development Committee, a powerful Mayor, reporting dii octly to the Chairman of SLORC, will handle, among other things, the "desirable" or "appropriate" population number that will be allowed to reside in the capital city. The Squatter Clearance Scheme, resettlement, and creation of new towns will be the ongoing tasks of this new Committee, which will also have the powers of land administration in the city;
(h) The notable points in the current Squatter Clearance Scheme are the following:

(i) The problems of squatters living in the religious compounds, pagodas and monasteries have been tackled, whereas they were ignored previously;

(ii) Massive road-widening schemes have involved squatters as well as leasehold and freehold families. The latter have been given plots and compensation if dismantling of buildings is involved;

(iii) When outbreaks of fire occur, mostly in squatter areas, the fire victims are resettled in new settlements, whereas before they were resettled in their own area;

(iv) Squatter land reassembly has been carried out now in Dawbon and Dala based on experience gained previously. However, squatter upgrading as a concept has still not been accepted generally;

(v) Finally, although squatter families being able to own legally a plot and a house are good, the important fact is that low-income families' first priority is to obtain employment and livelihood. Location and a space to carry out a livelihood is of utmost importance, not the legal concept of a plot and a house to live in.

(c) Methodology

The methodology used was a direct site inspection or eyeball contact with the actual squatter areas affected by the clearance scheme.

The target areas were first identified and checked first-hand, or through second-hand reports. Most squatter areas are not visible from the main roads and advance knowledge is needed to search for the exact spots.

From the list, the sites were visited briefly to confirm the location, size of area, number of families and place of relocation. The facts were recorded on working sheets. Whenever possible, a visit was made to a nearby house, to confirm the estimate, the place of relocation and the price of the plot the families have to pay. Usually, this was between K3000 and 4000.

From the working sheets, the data were transferred on the tracing overlay on the 3 inches = 1 mile Yangon Survey Map, with the appropriate annotations and serial numbers.

(d) Annotations

Data on squatters were annotated as follows:

(a) Squatter areas that had already existed before the clearance scheme;

(b) Squatter households which had been moved due to the clearance scheme after 1988 until the present;

(c) Squatter households which were relocated due to outbreaks of fire in their areas.

Each location together with the Serial Numbers is shown on figure 1.1. This is a reduction and simplification of the map prepared as part of the survey. The figure should be read in conjunction with the table presented in
The term "Old Squatter Area" refers to squatters established before 1988 which have not been moved as part of the resettlement programme.

### Location data/map index

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Type of squatter area</th>
<th>Location and township</th>
<th>Number of households</th>
<th>New location</th>
<th>Year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old squatter area</td>
<td>Singu, Insein Township</td>
<td>1000</td>
<td>HT</td>
<td>Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squatter clearance</td>
<td>Pangan, Insein Township</td>
<td>600</td>
<td>HT</td>
<td>1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squatter clearance</td>
<td>Pangan, Insein Township</td>
<td>600</td>
<td>HT</td>
<td>1989 Concrete products factory extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squatter clearance</td>
<td>Japan Road Insein Township</td>
<td>600</td>
<td>HT</td>
<td>1989 Road building project to new settlement area, Thiri Marlar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Clearance of owners plots</td>
<td>Htanbingon, Mingaladon Town</td>
<td>500</td>
<td>ST</td>
<td>1987/88 Earth levelling for airport extension; contained in structure plan for new town</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Squatter clearance</td>
<td>Near Steel Mill Insein Township</td>
<td>1500</td>
<td>HT/ST</td>
<td>1990 For steel mill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Squatter clearance</td>
<td>Along railway tracks</td>
<td>300</td>
<td>HT</td>
<td>1989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Squatter clearance</td>
<td>Sawbwagyigone Mingaladon town</td>
<td>900</td>
<td>HT</td>
<td>1989 Road extension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Squatter clearance</td>
<td>Junction of Sawbwagyigone</td>
<td>2000</td>
<td>D</td>
<td>1990 For use by National Defence College</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>Pureseikone</td>
<td>800</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>Pureseikone</td>
<td>800</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Squatter clearance</td>
<td>Pankatan</td>
<td>1000</td>
<td>HT</td>
<td>1988/89 Bayinaung New Road construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>Peinegon, Insein Township</td>
<td>800</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>Insein Township</td>
<td>400</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>Insein Township</td>
<td>400</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter area</td>
<td>West Thamaing</td>
<td>500</td>
<td>-</td>
<td>- Still intact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old squatter communities</td>
<td>Beside Insein Road, Gyogane</td>
<td>2000</td>
<td>-</td>
<td>- Fire outbreak 15 years ago: relocated on same area in planned plots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squatter clearance</td>
<td>Thamaing Link Road</td>
<td>600</td>
<td>D</td>
<td>1990 Road extension programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial No</td>
<td>Type of squatter area</td>
<td>Location and township</td>
<td>Number of households</td>
<td>New location</td>
<td>Year</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
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<td>--------------</td>
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<td>----------</td>
</tr>
<tr>
<td>19</td>
<td>Squatter clearance</td>
<td>Corner of Prome Road and Kabaye Ave, Pagoda Road Seinpanmyaing area</td>
<td>800</td>
<td></td>
<td></td>
<td>Fire outbreak: whole area made into park</td>
</tr>
<tr>
<td>20</td>
<td>Old squatter area</td>
<td>Beside Seinpanmyaing area</td>
<td>350</td>
<td></td>
<td></td>
<td>Still intact</td>
</tr>
<tr>
<td>21</td>
<td>Old squatter area</td>
<td>Corner of Kabaye and road to N Okkalapa</td>
<td>800</td>
<td></td>
<td></td>
<td>Still intact</td>
</tr>
<tr>
<td>22</td>
<td>Old squatter area</td>
<td>Corner of Kabaye and road to N Okkalapa</td>
<td>1000</td>
<td></td>
<td></td>
<td>Half area cleared for building theatre and cinema hall complex</td>
</tr>
<tr>
<td>23</td>
<td>Old squatter area</td>
<td>Corner of Kabaye and road to N Okkalapa</td>
<td>800</td>
<td></td>
<td></td>
<td>Half area cleared for building theatre and cinema hall complex</td>
</tr>
<tr>
<td>24</td>
<td>Old squatter area</td>
<td>Corner of Kabaye and road to N Okkalapa</td>
<td>1200</td>
<td></td>
<td></td>
<td>Still intact</td>
</tr>
<tr>
<td>25</td>
<td>Squatter clearance</td>
<td>West of Okyin, beside Bayinaung New West Road</td>
<td>1200</td>
<td></td>
<td></td>
<td>Fire outbreak in 1988: some bona fide squatters given back rooms in privately built apartments (about 380)</td>
</tr>
<tr>
<td>26</td>
<td>Squatter clearance</td>
<td>Behind oil cleaning depot, Thamaing Link Road</td>
<td>200 HD/D</td>
<td>1990</td>
<td></td>
<td>Site used for construction of apartments by private contractors for sale to public organized by township</td>
</tr>
<tr>
<td>27</td>
<td>Squatter clearance</td>
<td>Junction of Kabaye Pagoda Rd and Link Road</td>
<td>300</td>
<td></td>
<td></td>
<td>SLORC: shops to be sold back to previous owners</td>
</tr>
<tr>
<td>28</td>
<td>Squatter clearance</td>
<td>Junction of Kabaye Pagoda Rd and Link Road</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Squatter clearance</td>
<td>Corner of Link Rd, and Insein Rd behind factory</td>
<td>2800 HD/D</td>
<td>1990</td>
<td></td>
<td>Probably for extension of factories</td>
</tr>
<tr>
<td>30</td>
<td>Squatter clearance</td>
<td>Off Okkyin Rd Hlaing Township</td>
<td>820 HD</td>
<td>1990</td>
<td></td>
<td>Extension for factory use and for school extension</td>
</tr>
<tr>
<td>31</td>
<td>Old squatter area</td>
<td>Behind Thamaing Textile Mill</td>
<td>600</td>
<td></td>
<td></td>
<td>- Still intact</td>
</tr>
<tr>
<td>32</td>
<td>Squatter clearance</td>
<td>Kabaye Pagoda Compound</td>
<td>800 HT/D</td>
<td>1990</td>
<td></td>
<td>Premises of shop houses and squatters</td>
</tr>
<tr>
<td>33</td>
<td>Old squatter area</td>
<td>Near Tregyangyi across Ngamoeyek River</td>
<td>1000</td>
<td></td>
<td></td>
<td>- Still intact</td>
</tr>
<tr>
<td>34</td>
<td>Old squatter area</td>
<td>Near Hlaing River, beside Hlaing River</td>
<td>800</td>
<td></td>
<td></td>
<td>Still intact</td>
</tr>
<tr>
<td>Serial No</td>
<td>Type of squatter area</td>
<td>Location and Township</td>
<td>Number of households</td>
<td>New location</td>
<td>Year</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
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<td>---------------------</td>
<td>--------------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>35</td>
<td>Old squatter area</td>
<td>Near Hlaing River Road beside Hlaing River</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>36</td>
<td>Old squatter area</td>
<td>Between railway track and Insein Road (Sathagon)</td>
<td>850</td>
<td>-</td>
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<td>Still intact</td>
</tr>
<tr>
<td>37</td>
<td>Squatter clearance</td>
<td>Beside Insein Road</td>
<td>800</td>
<td>D</td>
<td>1990</td>
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</tr>
<tr>
<td>38</td>
<td>Squatter clearance</td>
<td>Adjacent to Thamaing Textile Mill</td>
<td>1500</td>
<td>HT</td>
<td>1990</td>
<td>Old workers' barracks removed</td>
</tr>
<tr>
<td>39</td>
<td>Old squatter area</td>
<td>Adjacent to Thamaing Textile Mill</td>
<td>1200</td>
<td>-</td>
<td>-</td>
<td>Close to Hlaing University Campus</td>
</tr>
<tr>
<td>40</td>
<td>Squatter clearance</td>
<td>Adjacent to Thamaing Textile Mill</td>
<td>1600</td>
<td>HT</td>
<td>1990</td>
<td>Zabaikyan squatter community cleared</td>
</tr>
<tr>
<td>41</td>
<td>Old squatter area</td>
<td>Beside railway tracks Kanbe</td>
<td>700</td>
<td>-</td>
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<td>Still intact</td>
</tr>
<tr>
<td>42</td>
<td>Squatter clearance</td>
<td>Togyauangale entrance</td>
<td>600</td>
<td>D</td>
<td>1990</td>
<td>For railway development</td>
</tr>
<tr>
<td>43</td>
<td>Old squatter area</td>
<td>Beside railway tracks Kanbe</td>
<td>700</td>
<td>-</td>
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<td>Still intact</td>
</tr>
<tr>
<td>44</td>
<td>Squatter clearance</td>
<td>Beside Dockyard Corporation, near railway track</td>
<td>600</td>
<td>-</td>
<td>1988</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Squatter and freehold clearance</td>
<td>Corner of Insein and Hledan Rd</td>
<td>200</td>
<td>ST</td>
<td>1990</td>
<td>Building project of apartments and shops by private contractor, organized by RCDC and SLORC</td>
</tr>
<tr>
<td>46</td>
<td>Squatter and freehold clearance</td>
<td>Corner of Insein and Prone Rd</td>
<td>600</td>
<td>ST</td>
<td>1990</td>
<td>Police Barracks cleared for project described in number 45</td>
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<td>47</td>
<td>Squatter clearance</td>
<td>Inside Housing Department Estate</td>
<td>100</td>
<td>HT/D</td>
<td>1989</td>
<td>To clear public housing estate</td>
</tr>
<tr>
<td>48</td>
<td>Squatter clearance</td>
<td>Inside Housing Department Estate</td>
<td>100</td>
<td>HT/D</td>
<td>1989</td>
<td>To clear public housing estate</td>
</tr>
<tr>
<td>49</td>
<td>Old squatter area</td>
<td>Beside Kyak-kasan Pagoda</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>50</td>
<td>Old squatter area</td>
<td>Thingangyun beside railway tracks</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>51</td>
<td>Old squatter area</td>
<td>Thingangyun beside railway tracks</td>
<td>800</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>52</td>
<td>Old squatter area</td>
<td>Thingangyun beside railway tracks</td>
<td>1200</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>Serial No</td>
<td>Type of squatter area</td>
<td>Location and township</td>
<td>Number of households</td>
<td>New location</td>
<td>Year</td>
<td>Comments</td>
</tr>
<tr>
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<td>----------</td>
</tr>
<tr>
<td>53</td>
<td>Squatter and free-hold clearance</td>
<td>Junction of new Bayinaung Rd and Hledan Rd</td>
<td>80</td>
<td></td>
<td></td>
<td>For road building alignment</td>
</tr>
<tr>
<td>54</td>
<td>Old squatter area</td>
<td>Junction of Hanthawaddy and Hledan Rd</td>
<td>900</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>55</td>
<td>Squatter clearance</td>
<td>Junction of Hanthawaddy and Hledan Rd</td>
<td>1600</td>
<td>HT</td>
<td>1987</td>
<td>After outbreak of fire, this area used for transport centre for intercity passenger and goods, including housing for fCDC personnel</td>
</tr>
<tr>
<td>56</td>
<td>Squatter clearance</td>
<td>Nanataw Cemetery</td>
<td>4000</td>
<td>HT/ST</td>
<td>1987-89</td>
<td>After outbreak of fire, area fully cleared from cemetery areas in 1989; partly given to RCDC storage facilities</td>
</tr>
<tr>
<td>57</td>
<td>Squatter and freehold clearance</td>
<td>New Sayasan Rd from University Avenue junction</td>
<td>300</td>
<td>HT</td>
<td>1988-89</td>
<td>Freehold plots given: free plots for road building project</td>
</tr>
<tr>
<td>58</td>
<td>Squatter clearance</td>
<td>Corner of Goodliffe Road</td>
<td>400</td>
<td>HT</td>
<td>1988</td>
<td>New housing project and road extension</td>
</tr>
<tr>
<td>59</td>
<td>Squatter clearance</td>
<td>Corner of Goodliffe Road</td>
<td>300</td>
<td>HT</td>
<td>1988</td>
<td>New housing project and road extension</td>
</tr>
<tr>
<td>60</td>
<td>Squatter clearance</td>
<td>U Chit Mg Road</td>
<td>300</td>
<td>HT</td>
<td>1988-89</td>
<td>Road-widening project</td>
</tr>
<tr>
<td>61</td>
<td>Squatter clearance</td>
<td>Thingangyun Road</td>
<td>total 800</td>
<td>D</td>
<td>1990</td>
<td>Road-widening project</td>
</tr>
<tr>
<td>65</td>
<td>Squatter clearance</td>
<td>Thingangyun, Thingangyuyn</td>
<td>1200</td>
<td>D</td>
<td>1990</td>
<td>Old squatter area cleared for new housing project; Government workers' old barracks situated close to it and is being planned for new housing</td>
</tr>
<tr>
<td>66</td>
<td>Squatter clearance</td>
<td>River bank of Kemmendine</td>
<td>3000</td>
<td>HT/D</td>
<td>1990</td>
<td>River bank area to be taken by Port Authorities: future clearance possible along river banks</td>
</tr>
<tr>
<td>70</td>
<td>Squatter clearance</td>
<td>Beside railway tracks of Kemmendine</td>
<td>600</td>
<td>HT/D</td>
<td>1989-90</td>
<td>To clear railway areas by Port Authorities: future clearance possible along river banks</td>
</tr>
<tr>
<td>69</td>
<td>Old squatter area</td>
<td>Corner of Hanthawaddy Rd</td>
<td>600</td>
<td>D</td>
<td>1990</td>
<td>Still intact</td>
</tr>
<tr>
<td>71</td>
<td>Squatter clearance</td>
<td>Aziz Compound (Aung the ikdi Kone)</td>
<td>500</td>
<td>D</td>
<td>1990</td>
<td>Probably for new housing scheme, cleared from private owner</td>
</tr>
<tr>
<td>72</td>
<td>Squatter clearance</td>
<td>U Chit Mg Rd</td>
<td>200</td>
<td>1990</td>
<td>Road-widening scheme</td>
<td></td>
</tr>
<tr>
<td>Serial No</td>
<td>Type of squatter area</td>
<td>Location and township</td>
<td>Number of households</td>
<td>New location</td>
<td>Year</td>
<td>comments</td>
</tr>
<tr>
<td>-----------</td>
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<td>----------------------</td>
<td>--------------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>73</td>
<td>Squatter clearance</td>
<td>Adjacent to Department of Health Head Office (War War Win fire outbreak)</td>
<td>250</td>
<td>D</td>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Squatter clearance</td>
<td>Tamwe Ozu Zabu Thiri</td>
<td>300</td>
<td>NZT</td>
<td>1988</td>
<td>Early outbreak of fire</td>
</tr>
<tr>
<td>75</td>
<td>Squatter clearance</td>
<td>Entrance to Thuwunna</td>
<td>400</td>
<td>D</td>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Squatter clearance</td>
<td>Entrance to Thuwunna</td>
<td>600</td>
<td>D</td>
<td>1990</td>
<td>Area to be taken by Government Ministry</td>
</tr>
<tr>
<td>77</td>
<td>Old squatter area</td>
<td>Entrance to Thuwunna</td>
<td>800</td>
<td>-</td>
<td>-</td>
<td>Still intact (beside creek)</td>
</tr>
<tr>
<td>78</td>
<td>Squatter clearance</td>
<td>Kemmendine river front</td>
<td>200</td>
<td>D</td>
<td>1990</td>
<td>To beautify the river Front</td>
</tr>
<tr>
<td>79</td>
<td>Squatter clearance</td>
<td>Kodatgyi Pagoda compound</td>
<td>80</td>
<td>HT</td>
<td>1990</td>
<td>To clear the pagoda premises</td>
</tr>
<tr>
<td>80</td>
<td>Old squatter area</td>
<td>Corner of Shwegondaing and Yedashe Rd</td>
<td>600</td>
<td>-</td>
<td>** Declared squatter area since 1978/1980 RCDC: no action taken</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Squatter clearance of private plots</td>
<td>Along Campbell Road</td>
<td>600</td>
<td>-</td>
<td>Including squatters on private and</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Squatter clearance</td>
<td>On Kemmendine Road (Lutlatye)</td>
<td>600</td>
<td>-</td>
<td>1990</td>
<td>Government barracks; squatters to be given back plots; also housing scheme initiated by HD, built by private company</td>
</tr>
<tr>
<td>83</td>
<td>Squatter clearance</td>
<td>Corner of Kabaye Rd and Kyatawya Rd to Shewdagon Pagoda</td>
<td>1000</td>
<td>D</td>
<td>1990</td>
<td>Clearing households from compounds of monasteries and pagoda: some leasehold households also affected</td>
</tr>
<tr>
<td>84</td>
<td>Squatter clearance</td>
<td>Near Thakita Old Bridge</td>
<td>250</td>
<td>D</td>
<td>1990</td>
<td>Cleared area to be taken by Energy Ministry to store gas station</td>
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<tr>
<td>85</td>
<td>Squatter land reassembly</td>
<td>Dawbon Dawbon Township</td>
<td>800</td>
<td>D</td>
<td>1990</td>
<td>This reassembly method tried before but applied for the first time after SLORC Government came to power</td>
</tr>
<tr>
<td>86</td>
<td>Squatter land reassembly</td>
<td>Dawbon Dawbon Township</td>
<td>600</td>
<td>D</td>
<td>1990</td>
<td>This reassembly method tried before but applied for the first time after SLORC Government came to power</td>
</tr>
<tr>
<td>87</td>
<td>Old squatter area</td>
<td>Dawbon Dawbon Township</td>
<td>700</td>
<td>-</td>
<td>-</td>
<td>Old squatters in unplanned settlement</td>
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<tr>
<td>88</td>
<td>Squatter clearance</td>
<td>Maugon Rubbish Dump Compound</td>
<td>200</td>
<td>D</td>
<td>1990</td>
<td>To clear households squatting near rubbish dump</td>
</tr>
<tr>
<td>89</td>
<td>Squatter clearance</td>
<td>Timber Corporation Compound</td>
<td>200</td>
<td>D</td>
<td>1990</td>
<td>To clear Department's own compound</td>
</tr>
<tr>
<td>90</td>
<td>Squatter clearance</td>
<td>Near Childrens Hospital and compound</td>
<td>80</td>
<td>D</td>
<td>1990</td>
<td>To clear surroundings and compound</td>
</tr>
<tr>
<td>Serial No</td>
<td>Tyareape of squatter</td>
<td>Location and township</td>
<td>Number of households</td>
<td>New location</td>
<td>Year</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------</td>
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<td>----------------------</td>
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<tr>
<td>91</td>
<td>Removal of free-hold owners of land and buildings</td>
<td>Close to War Office</td>
<td>10-20</td>
<td>WPS</td>
<td>1989-90</td>
<td>Given good plots of land and build houses: to clear for security reasons</td>
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<tr>
<td>92</td>
<td>Removal of long-hold tenants in Government barracks</td>
<td>Close to Zoo and AFPFL Apartments</td>
<td>800</td>
<td>HT/W</td>
<td>1989-90</td>
<td>Cleared land used for apartments: earlier tenants nearby had chance to stay in completely new apartments finished before 1988</td>
</tr>
<tr>
<td>93</td>
<td>Old squatter area</td>
<td>Dawbon</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>94</td>
<td>Squatter area</td>
<td>Corner of Dockyard, Dawbon</td>
<td>150</td>
<td>D</td>
<td>1990</td>
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</tr>
<tr>
<td>95</td>
<td>Squatter land reassembly</td>
<td>Beside private rice mill</td>
<td>300</td>
<td>-</td>
<td>-</td>
<td>Squatter land reassembly as in No 85</td>
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<tr>
<td>96</td>
<td>Squatter land reassembly</td>
<td>Across the road from rice mill</td>
<td>400</td>
<td>-</td>
<td>-</td>
<td>Squatter land reassembly as in No 85</td>
</tr>
<tr>
<td>97</td>
<td>Old squatter area</td>
<td>Dawbon beside river</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>98</td>
<td>Squatter clearance</td>
<td>Forest Department Compound in Ahione</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>To clear compound</td>
</tr>
<tr>
<td>99</td>
<td>Squatter clearance</td>
<td>Pazundaung</td>
<td>400</td>
<td>D</td>
<td>1990</td>
<td>To clear railway quarters compound</td>
</tr>
<tr>
<td>100</td>
<td>Squatter clearance</td>
<td>Ahione Power Statbn</td>
<td>150</td>
<td>D</td>
<td>1990</td>
<td>To clear compound</td>
</tr>
<tr>
<td>101</td>
<td>Squatter clearance</td>
<td>Thayetaw Monastery Compound</td>
<td>100</td>
<td>D</td>
<td>1990</td>
<td>To clear monastery compound</td>
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<td>102</td>
<td>Squatter clearance</td>
<td>Pazundaung Kyetan area</td>
<td>600</td>
<td>T</td>
<td>1987-88</td>
<td>To make way for new housing estate</td>
</tr>
<tr>
<td>103</td>
<td>Omitted</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>Squatter clearance</td>
<td>Htinpunseik Housing Estate Compound</td>
<td>300</td>
<td>ST/D</td>
<td>1989-90</td>
<td>To clear the housing estate</td>
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<tr>
<td>105</td>
<td>Squatter clearance</td>
<td>Pazundaung, beside railway</td>
<td>200</td>
<td>-</td>
<td>-</td>
<td>To clear area between trade godowns and railway tracks</td>
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<tr>
<td>106</td>
<td>Squatter clearance</td>
<td>Strand Road and Keeley Road</td>
<td>200</td>
<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td>107</td>
<td>Squatter land reassembly</td>
<td>Dala</td>
<td>1800</td>
<td>-</td>
<td>-</td>
<td>Squatter land reassembly as in Number 85</td>
</tr>
<tr>
<td>108</td>
<td>Old squatter area</td>
<td>Dala</td>
<td>1400</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>109</td>
<td>Old squatter area</td>
<td>Dala</td>
<td>600</td>
<td>-</td>
<td>-</td>
<td>Still intact</td>
</tr>
<tr>
<td>110</td>
<td>Squatter clearance</td>
<td>Mingaladon North airport runway</td>
<td>600</td>
<td>P</td>
<td>1987</td>
<td>Cleared for airport runway extension</td>
</tr>
</tbody>
</table>

Key: Relocation areas

D = Dadon Myo Thit
HT = Hlaing Tha Ya
NZT = Nga Zu Thaung
P = Padmya
ST = Shwe Pyl Tha
W = Waibagi
WPS = Windsor Road/Phu Sem Road
Annex II

Development co-operation: Human settlements project inventory

Projects which directly support the human settlements sector, although not necessarily grouped under this sector in the UNDP programme reports, together with those which would make indirect inputs, have been identified. They are sorted, first, by the main funding agency, and, secondly, by sub-sector groupings determined for the specific purposes of the Mission. The inventory covers all those projects which were ongoing or planned as of 1988, plus several which were in the process of being formulated and/or revised during 1989 and early-1990. The serial numbers (1 to 68) are those assigned by the Mission. Since 1988, certain projects have been completed and others suspended. Due to the unclear situation as of mid-1990, project status has not been provided in the following lists.

It should be noted that the Mission did not have the opportunity to examine the project documentation in each and every case. Having used mainly the project titles and descriptive notes provided in UNDP and other agency reports, there may therefore have been misinterpretations in determining the project scope and objectives. The inventory should, nevertheless, serve as a useful initial tool for scanning the human settlements-related share of the development co-operation programme, and for further more refined analysis.

<table>
<thead>
<tr>
<th>Project number</th>
<th>Abbreviated title</th>
<th>Executing agency</th>
<th>Funding agency contribution ($US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.  BUR/85/016</td>
<td>Yangon city development: Phase II</td>
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<td>12. MYA/88/006</td>
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<td>13. MYA/88/008</td>
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14. MYA/84/005 Subsistence farming seed development WB 2,000,000
15. BUR/80/015 Support for IDWSSD UNIDO 1,510,230
16. BUR/82/010 1983 census DTCD 877,370
17. BUR/81/037 Water supply, 7 towns WHO 574,000
18. BUR/83/004 Computer development DTCD 5,448,740
19. BUR/85/001 Biogas digestors - 499,000
20. BUR/88/026 Remote sensing FAO 1,110,000
21. BUR/86/011 Plastic products development UNIDO 500,000
22. BUR/87/003 Lesser-known wood species FAO 2,500,000
23. MYA/90/013 Public finance management - 500,000
24. BUR/85/002 Master plan, irrigation support WB 1,556,300

Total UNDP contribution 41,257,242

UNCDF (capital assistance)

25. MYA/88/C01 PVC pipes CDF 2,600,000
26. MYA/88/C03 Hand pumps CDF 3,000,000
27. MYA/88/C04 Feeder roads (border development) CDF 5,000,000
28. MYA/88/C05 Rural drinking water (border development) CDF 5,000,000
29. MYA/88/C06 Irrigation, reforestation (border development) CDF 4,000,000
30. MYA/88/C07 Micro-hydel (border development) CDF 2,000,000
31. MYA/88/C08 Sites-and-services tow-cost housing CDF 2,000,000

Total UNCDF contribution 23,600,000

UNICEF

32. W007 Latrine pans/materials UNICEF 2,005,900
33. W009 Socio-economic study rural water supply/sanitation UNICEF 194,100
34. W010 Health education UNICEF 233,900
35. W011 Handpump manufacture UNICEF 185,000
36. W012 Dry zone rural water supply UNICEF 1,558,300
37. W013 Gravity flow water-supply UNICEF 262,000
38. W031 Co-operative sector community water supply/sanitation UNICEF (joint with CIDA) 748,100
39. W032 Lower Myanmar rural water supply UNICEF (joint with EEC) 2,921,000

Total UNICEF/CIDA/EEC contribution 8,108,300
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<td>20,000,000</td>
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<td>AsDB (capital assistance)</td>
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<td>AsDB</td>
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<td>584 (BUR)</td>
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<td>56</td>
<td>635 45814</td>
<td>Computer development/Training</td>
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Total AIDAB contribution 40,272,720

China
57. Yangon/Syriam China railroad bridge

Finland (technical and capital assistance)
58. Wood industry Finland 7,415,000

Israel
59. Post-graduate course integrated rural/regional planning Israel 54,000

Japan
60. Urban transport seminar Japan
61. Construction engineering training Japan
62. Sewerage works training Japan
63. Yangon sewerage rehabilitation Japan
64. Fire-fighting training Japan
65. 9 Towns water supply Japan 15,731,000

Netherlands (technical and capital assistance)
66. Village piped water Netherlands 4,500,000
67. Rural water Netherlands 2,250,000

Total Netherlands contribution 6,750,000

Singapore
68. Public works, fire Singapore

The total value of the technical co-operation contributions, both directly and indirectly, to the human settlements sector, using the above figures and taking account of some double-counting between projects, is in the order of $US312 million. It should be noted that significant amounts, such as that for the Yangon-Syriam Bridge plus the costs for several other bilateral programmes, are not readily available and, therefore, are not included in this total.

The second sorting of projects provides an approximation of the distribution according to human settlements sub-sectors, which in most cases does not correspond to the UNDP or government sector categories. Several projects are broadly multi-sectoral, such as the UNDP "umbrella" projects, Nos. 2 and 4, and cannot be clearly classified. At the end of each grouping, cross references to other projects are included in order to identify the range of sectoral linkages.
<table>
<thead>
<tr>
<th>Funding agency</th>
<th>Project Number</th>
<th>Abbreviated title</th>
<th>Executing agency</th>
<th>Funding agency contribution ($US)</th>
</tr>
</thead>
<tbody>
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<td>UNDP</td>
<td>BUR/85/016</td>
<td>Yangon City development: Phase II</td>
<td>UNCHS (Habitat)</td>
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<td>UNDP</td>
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<td>UNDP</td>
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<td>Support for investment</td>
<td>OPS/CDF</td>
<td>(PA 204,000)</td>
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<td>OPS</td>
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<td>Seminar on urban development planning</td>
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<tr>
<td>Singapore</td>
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<td>Public works, fire protection training</td>
<td>Singapore</td>
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Total contributions: 54,781,602

See also:
under WATER SUPPLY/SANITATION - projects 17, 52, 53, 62, 63
under HEALTH - projects 41, 42

WATER SUPPLY/SANITATION

<table>
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<tr>
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<th>Project Number</th>
<th>Abbreviated title</th>
<th>Executing agency</th>
<th>Funding agency contribution ($US)</th>
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<td>UNDP</td>
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See also:

under URBAN PLANNING, DEVELOPMENT, AND MANAGEMENT - projects 1, 2, 3, 4, 51

INTEGRATED RURAL/REGIONAL PLANNING, DEVELOPMENT

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131
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Total contributions: 18,604,070

See also:
under URBAN PLANNING, DEVELOPMENT, AND MANAGEMENT - project 4

PUBLIC HEALTH

7. UNDP
   MYA/90/009
   Border primary health care
   WHO
   Total Contribution
   6,000,000

34. UNICEF
    W010
    Health education
    UNICEF
    233,900

40. WHO
    MYA/PHC/001
    Primary health care
    WHO
    600,000

41. WHO
    MYA/CWS/001
    Environmental health planning, management
    WHO
    400,000

42. WHO
    MYA/RVD/001
    Urban environmental health
    WHO
    400,000

54. USAID

PHC II 482 004

Biological pest

Total Contributions

ENVIRONMENT

FAO

3,100,000

13. UNDP
    MYA/88/008

See also:
under HEALTH - projects 41, 42
under WATER-SUPPLY/SANITATION - projects 33, 38, 53, 62, 63
under URBAN PLANNING, DEVELOPMENT, AND MANAGEMENT - projects 1, 2, 3, 4

CONSTRUCTION INDUSTRY/MATERIALS DEVELOPMENT

21. UNDP
    BUR/86/011
    Plastic products development
    UNIDO
    500,000

22. UNDP
    BUR/87/003
    Lesser-known wood species
    2,500,000

48. WB/IDA
    1114-BA
    Wood industry I
    WB
    32,000,000

49. WB/IDA
    1444-BA
    Wood industry II
    WB
    25,000,000

50. WB/IDA
    1253
    Construction industry road rehabilitation
    WB
    20,000,000

58. Finland
    Wood industry
    Finland
    7,415,000

61. Japan
    Construction engineering training
    Japan

Total contributions

87,415,000

Total Contributions:
**ENERGY**

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<td>Biogas digestors</td>
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<td>UNCDF</td>
<td>Micro-hydel</td>
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<td>2,899,000</td>
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**TRANSPORT**

- China
- Yangon/Syriam
- Rail/road bridge
- China

**STATISTICS/DATA MANAGEMENT**

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See also:
- under **URBAN PLANNING, DEVELOPMENT, AND MANAGEMENT** - projects 1, 2, 3
- under **INTEGRATED RURAL/REGIONAL PLANNING, development** - project 27

See also:
- under **URBAN PLANNING, DEVELOPMENT, AND MANAGEMENT** - projects 1, 2, 3
MISSION SCHEDULE, PERSONS CONSULTED

UNCHS (Habitat) Consultants - Terry Standley, David Etherton

Wednesday, 25 April
Arrive Yangon from Bangkok

Thursday, 26 April
UNDP
Mr. M. Gautier, Deputy Resident Representative
Mr. W. Dharmawimala, Assistant Resident Representative (Administration)
Ministry of Construction, Housing Department
Division Urban and Regional Planning
U San Tun Aung, Director
- Dr. Kyaw Lat, Deputy Director

Friday, 27 April
Ministry of Construction, Housing Department
U Aung Phone, Director General
UNDP
Mr. M. Gautier, Deputy Resident Representative
UNIC
U Thayne Toon, Senior Information Assistant

Saturday, 28 April
Site visits to Yangon resettlement areas:
- Hlaing Tha Ya
  Shwe Pyi Tha
  Padamya
- Myayadin
  Okkalapa North
  (accompanied by Dr. Kyaw Lat)

Sunday, 29 April
Site visits to Yangon development areas:
  Dagon New Township (resettlement)
  Gyi Pwa Ye (reassemble/upgrading)
  Thaketa (earlier resettlement)
  Syriam bridge construction site
Monday, 30 April
UNDP
   Daw Soe Yee Saing, Programme Officer
   Ministry of Construction, Housing Department
   Land Administration Division
   U Sein Myint, Director, Lands Records and Surveys
UNICEF
   - Mr. Kalidas Ray, Senior Project Officer
     Water Supply and Sanitation Section
   Mr. Rameshwar Prasad, Assistant Project Officer
     Water Supply and Sanitation Section
   Mr. C. Rycroft, Information Officer
   Mr. E. Laroche, Programme Officer
     Health and Nutrition Section

Tuesday, 1 May
Site visits:
   Road improvements, public parks/gardens
UNDP
   Reference and Documentation Unit
Site visits:
   Inspection of areas cleared and new developments as a result of
   the post-1988 Yangon resettlement programme (accompanied by U
   Thayne Toon, UNIC)

Wednesday, 2 May
Ministry of Home and Religious Affairs
   Yangon City Development Committee
   - U Than Sein, Head, Department of Budget and Accounts
     Ministry of Construction, Housing Department
     Finance Planning Division
   - U Than Naing, Director
Water and Sanitation Division
   U Nyo Maung, Director
   U Aung Myint, Ass. Director

Thursday, 3 May
UNICEF
   Mr. Rameshwar Prasad, Assistant Project Officer
     Water Supply and Sanitation Section
Ministry of Construction, Housing Department
   - Dr. Kyaw Lat (rural settlements issues)
UNDP
   Reference and Documentation Unit
Deskwork at hotel and UNDP

Friday, 4 May
Ministry of Home and Religious Affairs,
Yangon City Development Committee
- U Khin Maung, Deputy Head, Water and Sewage

UNDP
- Ms. R. Thapa, Assistant Resident Representative (Programme)

Ministry of Agriculture and Forests, Settlement and Land Records Department
- U Mya Thein, Director, Statistics Division

Deskwork at Hotel

Saturday, 5 May

World Bank
- Mr. L. Morrell, Financial Analyst, Asia Country II
- Mr. F. Sarno, Procurement Specialist

Deskwork at Hotel

Sunday, 6 May

Travel to Mandalay by air

Ministry of Construction, Housing Department
- U Myint Soe, Deputy Director, Estate Management

General orientation site visits throughout Mandalay

Monday, 7 May

Ministry of Home and Religious Affairs, General Affairs Department
- Deputy Head, Mandalay Division
- U Sein, Director
- U Yu Tin, Municipal Engineer
- U Tan Tun, Head, Finance/Revenue Division
- U Tin Swe, Head, Sanitation Division
- U Maung Maung, Head, Construction Services
- U Mya Thaung, Project Director, AsDB Water Project

Coffee and Partners Pty Ltd.

AsDB Consultants, Mandalay Water Supply Project
- Mr. J. Gildea, Director

Site visits to resettlement areas:
- Mahamyaing
- BoYa
- Peg Phy Yu Gone

Tuesday, 8 May

Site visits:
- Amarapura
- Sagaing
Due to national holiday, government personnel could not be interviewed in these towns.

Low-income areas in south-west sections of Mandalay
Interview with lands/property broker, Mandalay

Wednesday, 9 May

Site visits:
- Fire victims' temporary housing
  - Kywesekan area

Mr. Standley returns by air to Yangon
Mr. Etherton travels by air to Heho (Taunggyi)
Divisional LORC, Taunggyi Township Group
  - U Ittah Kywe, Secretary

Thursday, 10 May

UNDP
- Mr. K Kitatani, Resident Representative
- Daw Soe Yee Saing, Programme Officer

Briefing of national consultant assisting the Mission, Yangon.
Ministry of Construction, Housing Department and Public Works Department
Urban and Regional Planning Division (Yangon)
  - U Win Myint, Dept. Director
    Public Works Department (Taunggyi)
  - U Aung Chit, Executive Engineer
    Ministry of Agriculture and Forests (Taunggyi)
  - U Soe Tint, Executive Engineer, Agriculture Mechanisation Department
  - U Thein Myint, Executive Engineer, Irrigation Department
    Ministry of Home and Religious Affairs (Taunggyi)

General Affairs Department
- U Thay Kywe, Deputy Director, Shan State
  Taunggyi Town Development Committee
- U Ba Nyunt, Municipal Engineer.
  Site visit (Taunggyi)
- Old town
  Resettlement areas

Interview with private architect/builder, Yangon

Friday, 11 May

Site visits (Taunggyi)
- Public Works Projects

Mr. Etherton returns by air to Yangon
(The Mission was accompanied to Mandalay and Taunggyi by Dr. Kyaw Lat)

Site visits, Yangon:
Dawbon (reassembly project)
Thaketa (reassembly project)
Hlaing (housing for fire victims)
Embassy of the United States of America
Ms J. Szymanski, Second Secretary

Saturday, 12 May
Deskwork at hotel
Meeting on MYA/85/016
Daw Soe Yee Saing
Dr. Kyaw Lat

Sunday, 13 May
UNDP
Reference and Documentation Unit
Supervision of report typing
Deskwork at hotel
Progress meeting with national consultant assisting the Mission.

Monday, 14 May
Ministry of Home and Religious Affairs
General Affairs Department
U Aung Shwe, Deputy Director General
- Thura U Soe Aung, Deputy Director
U Thein Naing, Project Manager
U Tin Htut, Assistant Engineer
U Htay Aung, Deputy Assistant Director
Deskwork at UNDP and hotel

Tuesday, 15 May
Field trip, by road, to Bago town
Secretary, Bago TDC
U Tan Htun, Senior Executive Engineer, Public Works
(ex Construction Corporation)
(accompanied by Housing Department technical personnel)

UNDP
Ms R Thapa, Assistant Resident Representative (Programme) - end of Mission reporting

UNICEF
Mr. Kalidas Ray, Senior Project Officer
Water Supply and Sanitation Section

Wednesday, 16 May
Final meeting with Housing Department
Depart by air to Bangkok
Thursday, 17 May - Friday, 18 May
Consultants prepare report drafts in Bangkok

Friday, 18 May
Mr Standley departs UNCHS (Habitat), Nairobi
Mr Etherton completes Mission, returns home base (New York)

Monday, 21 May - Friday, 25 May
Debriefing and report preparation, UNCHS (Habitat), Nairobi

Saturday, 26 May
Mr Standley returns home base (Bangkok)
Annex IV

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Documents

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Burma Country Economic Memorandum
February 1989

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Asia Development Outlook
1989

The Union of Myanmar, Ministry of Planning and Finance
Review of the Financial, Economic and Social Conditions for 1988/90
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Inventory of Population Projects in Developing Countries 1986/87
1988

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November 1986

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July 1989

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Selected Sectoral Review - Myanmar
Dec 1988

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Proceedings of Mid-Term Review of UNDP fifth Country Programme
Nov 1989

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Country Programme Management Plan, Union of Myanmar, Jan - Dec
1990, Jan 1990

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Directory of United Nations Personnel in Myanmar
Jan 1990

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Unofficial Directory of Senior Officials of the Government of Myanmar as
of July 1989
Amended May 1990
14. **World Bank**  
   *Staff Appraisal Report, Myanmar, No.7272-BA*  
   Infrastructure Rehabilitation Project  
   August 1990

15. **World Bank**  
   *Aide memoire, Menckhoff et al Mission*  
   March 1990

16. **World Bank**  
   Infrastructure Sector Strategy, FY90

17. **World Bank**  
   Office memorandum, Menckhoff (A2IN) to Patel, Chief A2IN  
   April 1990

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   Project document MYA/86/012  
   Institutional Strengthening of Infrastructure Agencies  
   Original start date estimate: Nov 1988

19. **UNDP/World Bank**  
   Project document, MYA/86/012  
   Programme of Pre-Investment and Investment Assistance  
   (Myanmar Umbrella IV)  
   Original start date estimate: April 1990

20. **UNDP/World Bank**  
   Terms of Reference, MYA/86/012  
   Water and Sanitation Sector Review

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   Mission report, BUR/86/007  
   Relief Assistance for Resettlement of Rangoon Fire Victims  
   Guy Lemarchands - Consultant  
   Nov-Dec 1987

22. **UNCDF**  
   Back-to-office Report and enclosure letter to UNDP, Myanmar, for Mission  
   on UNCDF programme  
   Bernard Ferry  
   1989

23. **UNDP/OPS**  
   Project document, MYA/88/047  
   Umbrella support Services for UNCDF Investment Programme  
   Original start date estimate : May 1990

24. **UNICEF**  
   Situation Analysis Report, Water Supply and Sanitation,  
   Myanmar  
   1990

25. **UNICEF**  
   1990
26. **UNICEF**  
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March 1990

27. **AsDB**  
Water Supply and Sanitation Sector Profile, Burma  
Feb 1988

28. **ASDB**  
Mandalay Water Supply Project  
Coffey and Partners Pty Lts (Australia)

29. **UNDP/UNCHS (Habitat)**  
UNCHS (Habitat) Agency Terminal Report, BUR/80/005  
Rangoon City and Regional Development  
Dec 1989

30. **UNDP/UNCHS (Habitat)**  
Project document, BUR/85/016  
Rangoon City and Regional Development - Phase II  
Original start date estimate : July 1988

31. **UNDP/UNCHS (Habitat)**  
BUR/80/005 output  
Rangoon City Structure Plan, Volume 1  
June 1986

32. **UNDP/UNCHS (Habitat)**  
BUR/80/005 output  
Rangoon City Structure Plan, Volume 2  
June 1986

   This volume is made up of 14 technical reports, prepared from 1984 to 1986, as follows:

32/1 The Regional Context of Rangoon's Urban Development, June 1986

32/2 Towards a Housing Policy and Programme for Greater Rangoon, April

32/3 Central Area Housing Stock Rehabilitation, Pilot Project Proposals, July 1985

32/4 Transportation Consultant: Final Report, Dec 1983

32/5 Public Transport in Rangoon City's Peripheral Communities, May 1986

32/6 Urban Water Supply and Sanitation, Drainage and Solid Waste Disposal Systems in Rangoon City, Oct 1985

32/7 Urban Sanitation - Improvement Proposals (1), June 1985

32/8 Industrial Zones, Jun* 1986

32/9 Rangoon's Informal Sector - with special reference to Building Sector, May 1986

32/10 Urban and Regional Markets, May 1986
32/11 Urban Recreation, June 1986
32/12 Clay Tiles as Roofing Materials, April 1985
32/13 Investigations and Recommendations for the Use of Lesser-known Timber Species in Housing, May 1986
32/14 Revised Urban Statistics, May 1986

33. UNDP/UNCHS (Habitat)
    BUR/80/005 Outputs

    Complementary reports

33/1 Preliminary Report on Socio-Economic Conditions of Rangoon City and Environs
33/2 Trends, Scenarios for Rangoon City and Division
33/3 Regional and Urban Options on Population and Employment Distribution
33/4 Regional Potential Study
33/5 Urban Land-Use Study
33/6 Yangon Urban Development: Trends, Constraints, Opportunities
33/7 Employment Study
33/8 Employment Projection for Location Options
33/9 Community Studies - Thaketa
33/10 Public Transport Study of Peripheral Communities - Thaketa
33/11 The Housing Department - a Preliminary Evaluation
33/12 North Okkalapa House Improvement Loan Scheme (Densification)
33/13 North Okkalapa Model Site and Service Scheme
33/14 Sai Thein Rehabilitation Scheme
33/15 Taikkyi Site and Service Project
33/16 Conservation of Water Bodies - Preliminary Report

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34/1 Rangoon City, January 1986
34/2 1983 Population Census (national summary), June 1986
34/3 Mandalay Division, December 1986
34/4 Shan State, September 1987

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38. **Maung Tint Swe, Maung Maung Win Aung**
   Excreta Disposal in the Rural Areas of Burma
   B.E. Thesis, Department of Civil Engineering
   Yangon Institute of Technology October 1978

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   Extract from project document MYA/88/P05
   Improvement of Vital Registration and Statistics Systems
   Original start date estimate : February 1990

**Maps, drawings**

(a) Country Map, 1 :1,500,000
   (with Yangon and Mandalay city insets)
   APA Press

(b) Yangon City Base Map, 1" = 3888' (1 : 46,656)
   (prepared by Housing Department)

(c) Yangon City Map, 3" = 1 Mile (1 : 21,120)
   Showing 1985 -1990 housing project locations with numbers of
   plots, and new and improved road alignments
   (prepared by Housing Department)

(d) Dagon New Township Layout (index map)

(e) Dagon New Township detailed subdivision plan, 1" = 300'

(f) Hlaing Tha Ya New Township Layout (index map)

(g) Hlaing Tha Ya New Township detailed subdivision plan, 1" =
    300'

(h) Shwe Pyi Tha New area plan (index map)

(i) Shwe Pyi Tha New area detailed subdivision plan, 1" = 300'

(j) Hlaing fire victims rehabilitation project, 1:1,200

(k) Rangoon city Key Map, together with Section of Dagon, Hlaing
   Tha Ya and Shwe Pyi Tha, showing tubewell locations
   (Items (d) - (k) were prepared by the Housing Department.)

(l) Mandalay City Base Map, 1: 25,000
   (prepared by Coffey and Partners)

(m) Mandalay City Base Map
   (prepared by Mandalay City Development Committee)
(n) Plan for 20 persons' low-cost concrete septic tank
   (prepared by Yangon City Development Committee)
(o) Plan of slab surround to handpump tubewell
   (prepared by Housing Department)
Annex V

PHOTOGRAPHS

The following photographs were taken during April and May 1990 in Yangon, Mandalay and Bago. It should be noted that in each case the conditions were those prior to the commencement of the rains.


2. Dagon New Town - Yangon: housing for public servants, complete finished units to be provided, in final stages of construction in April 1990; timber frame and walling.
3. Dagon New Town - Yangon: housing for public servants as above, but timber frame construction with plastered brick infill.


5. Dagon New Town - Yangon: squatter resettlement as above; drums used for water storage.
6. Dagon New Town - Yangon: squatter resettlement as above; all dwellings constructed with combustible materials; some of the standard 40' x 60' plots subdivided.


8. Hlaing Tha Ya New Town - Yangon: squatter resettlement area; market constructed with community contributions.
9. Hlaing Tha Ya New Town - Yangon: prototype solar-power tubewell with five taps, standard water supply through shallow tubewells with handpumps.

10. Dawbon - Yangon: squatter reassembly project, regrouping within same location with serviced plots; no resettlement involved; UNICEF latrine slab and pipe raised above seasonal flood level.

11. Gyi Pwa Ye - Yangon: squatter reassembly project as above; roadside drains provided as in all projects but poor maintenance and lack of adequate outflows result in standing water.
12

Squatter resettlement
- Bago: typical shallow tubewell with handpump.

13

Squatter resettlement
- Mandalay: sites-and-services with occupation prior to road grading and construction. (Note raised paddy boundaries cutting across road reserve).

14.

Hlaing Fire Victims
Rehabilitation - Yangon: project, land supplied by the Government; private financier/developer constructs at own-cost and retains shophouse for sale on open market, but transfers upper-floor dwelling unit to the Government at no charge.
Rural resettlement: nine miles south of Bago on main road; Standard 40' x 60' plots as other sites-and-services areas; water supply by tanker each day; about 250 plots; no social services.
The State Law and Order Restoration Council hereby enacts the Following Law.

Chapter I

Title and Application of the Law

1. This Law shall be called the 40th of Yangon development Law.
2. The following people mentioned in this law shall have the powers given hereby:
   a) The President of the State Law and Order Restoration Council shall have the power to make any law.
   b) The President of the State Law and Order Restoration Council shall have the power to make any law.
   c) The President of the State Law and Order Restoration Council shall have the power to make any law.
   d) The President of the State Law and Order Restoration Council shall have the power to make any law.
   e) The President of the State Law and Order Restoration Council shall have the power to make any law.

Chapter II

Powers

3. In order to carry out the development works in the City of Yangon effectively, the President of the State Law and Order Restoration Council shall have the power to make any law.
4. The President of the State Law and Order Restoration Council shall have the power to make any law.
5. The President of the State Law and Order Restoration Council shall have the power to make any law.
6. The President of the State Law and Order Restoration Council shall have the power to make any law.
7. The President of the State Law and Order Restoration Council shall have the power to make any law.
8. The President of the State Law and Order Restoration Council shall have the power to make any law.
9. The President of the State Law and Order Restoration Council shall have the power to make any law.

Chapter III

Organization of the Council

10. The Council shall consist of the following members:
   a) The President of the State Law and Order Restoration Council shall be the chairman of the Council.
   b) The President of the State Law and Order Restoration Council shall be the vice-chairman of the Council.
   c) The President of the State Law and Order Restoration Council shall be the secretary of the Council.
   d) The President of the State Law and Order Restoration Council shall be the treasurer of the Council.
   e) The President of the State Law and Order Restoration Council shall be the auditor of the Council.

Chapter IV

Powers of the President

11. The powers of the President are as follows:
   a) The President shall have the power to make any law.
   b) The President shall have the power to make any law.
   c) The President shall have the power to make any law.
   d) The President shall have the power to make any law.
   e) The President shall have the power to make any law.

Chapter V

Maintenance of Peace and Order

12. In order to maintain peace and order in the State, the President shall have the power to make any law.
13. The President shall have the power to make any law.
14. The President shall have the power to make any law.

Chapter VI

Organization of the Council

15. The Council shall consist of the following members:
   a) The President of the State Law and Order Restoration Council shall be the chairman of the Council.
   b) The President of the State Law and Order Restoration Council shall be the vice-chairman of the Council.
   c) The President of the State Law and Order Restoration Council shall be the secretary of the Council.
   d) The President of the State Law and Order Restoration Council shall be the treasurer of the Council.
   e) The President of the State Law and Order Restoration Council shall be the auditor of the Council.

Chapter VII

Maintenance of Peace and Order

16. In order to maintain peace and order in the State, the President shall have the power to make any law.
17. The President shall have the power to make any law.
18. The President shall have the power to make any law.

Chapter VIII

Organization of the Council

19. The Council shall consist of the following members:
   a) The President of the State Law and Order Restoration Council shall be the chairman of the Council.
   b) The President of the State Law and Order Restoration Council shall be the vice-chairman of the Council.
   c) The President of the State Law and Order Restoration Council shall be the secretary of the Council.
   d) The President of the State Law and Order Restoration Council shall be the treasurer of the Council.
   e) The President of the State Law and Order Restoration Council shall be the auditor of the Council.

Chapter IX

Maintenance of Peace and Order

20. In order to maintain peace and order in the State, the President shall have the power to make any law.
21. The President shall have the power to make any law.
22. The President shall have the power to make any law.
The State Law and Order Restoration Council  
The City of Yangon Development Law  
(The State Law and Order Restoration Council Law No. 11/90)  
The 6th Waning Day of Kason, 1352 M.E.  
(14th May, 1990)*  

The State Law and Order Restoration Council hereby enacts the following

Chapter 1
Title and Definition

1. This Law shall be called the City of Yangon Development Law.

2. The following expressions contained in this Law shall have the meanings given hereunder:-
   (a) Committee means the City of Yangon Development Committee formed under this Law;
   (b) Head of Office means the Head of the Service Personnel of City of Yangon Development Committee Office.

Chapter I
Formation

3. In order to carry out the development works of the City of Yangon effectively, the Chairman of the State Law and Order Restoration Council shall form the City of Yangon Development Committee comprising a minimum of 7 members and a maximum of 15 members. If necessary, the number of members may be increased. Such formation shall be made with suitable citizens.

4. In forming the Committee under Section 3, the Chairman of the State Law Order Restoration Council shall, at the same time determine the Chairman Secretary of the Committee.

5. The Chairman of the Committee is the Mayor of Yangon.

6. The Head of Office is the Joint Secretary of the Committee.

Chapter III
Duties and Responsibilities of the Committee

7. The Committee shall, in respect of the following duties and responsibilities, lay down the policy, give guidance, supervise or implement:-
   (a) preparation of civil projects and establishment of new towns within the limits of the City of Yangon Municipality;
   (b) administration of lands within the limits of the City of Yangon Municipality;
   (c) determining only the population which should be allowed to settle properly in the City of Yangon;
   (d) construction, repairing and demolition of buildings;
(e) demolition and re-settlement of squatter huts, squatter buildings and squatter wards;
(f) construction of roads, bridges and maintenance thereof;
(g) stipulation of conditions for traffic and parking of vehicles and slow-moving vehicles;
(h) construction of gardens, parks, playgrounds and recreation centres and maintenance thereof;
(i) carrying out works for lighting of roads;
(j) carrying out works for water supply;
(k) construction of reservoirs and pipelines and maintenance thereof;
(l) carrying out works for sanitation;
(m) carrying out works for public health;
(n) construction, maintenance and administration of markets;
(o) stipulation of conditions in respect of roadside stalls;
(p) carrying out precautionary measures against fire.

8. The committee shall, in addition to the duties and responsibilities contained in Section 7 also
carry out other duties and responsibilities prescribed by the City of Yangon Municipal Act,
rules and bye-laws.

Chapter IV
Powers of the Committee

9. The powers of the Committee are as follows:-
(a) demarcation and re-demarcation of the territorial limit of the City of Yangon Municipality;
(h) having the right to operate works independently with funds owned by the Committee;
(c) prescribing, revising, assessing and collecting duties and taxes and their rates relating to
development works, in accordance with the existing laws;
(d) having the right to apply the foreign currency derived from the lease of buildings, lease of
lands or by other means, for development works;
(e) having the right to carry out works contributing to city development by making contacts
with local and foreign organizations and with local and foreign individuals;
(f) having the right to take loans and grants from the Government or from foreign organizations
on its own responsibility;
(g) having the right to carry out works by forming sub-committee work-wise;
(h) arranging modern methods and systems in order to carry out development works more
effectively;
(i) exercising the powers conferred under the City of Yangon Municipal Act, rules and bye-
laws;
(j) exercising the powers conferred from time’ to time by the Chairman of the State Law and
Order Restoration Council.

10. Notwithstanding anything contained in the existing City of Yangon Municipal Act, State
Housing and Town and Country Development Board Act and other existing laws, powers in
respect of formulation and implementation of civil projects, establishment of new towns and
administration of town lands within the limits of the City of Yangon Municipality, shall vest in
the Committee.

11. The Committee may, in carrying out its duties and responsibilities act in consultation with
the departments concerned if necessary.
Chapter V
Finance

12. The Committee shall subsist on its own funds. In addition, it shall take responsibility for all its financial matters.

13. The Committee shall open a separate bank account for its funds and shall have the power to apply such funds for development works. Funds not immediately required for use may be invested in a suitable manner.

14. The Committee shall open a separate bank account for foreign currency accrued to it and shall have the power to apply such foreign currency for development works.

15. The Committee shall submit and report to the Chairman of the State Law and Order Restoration Council annual budget estimates prepared and submitted by the Head of Office and the progress of the annual finance and auditing work within 90 days of the end of the financial year.

Chapter VI
Organizational Set-up

16. The Committee shall draw and confirm the necessary organizational set-up based on the duties and responsibilities.

17. The Committee may, in preparing the organizational set-up under Section 16 include the following personnel contributing to the development works, after consultation with the departments concerned:-
(a) service personnel carrying out the duty of precautionary measures against disease;
(b) service personnel carrying out the duty of precautionary measures against fire;
(c) members of Municipal Police Force and other service personnel carrying out the duty of security and maintenance of discipline.

18. The Committee, in appointing service personnel:-
(a) has the power to appoint within the organizational set-up, in accordance with the existing regulations and bye-laws;
(h) may appoint by transfer service personnel who would be able to carry out effectively the development works, in consultation with the departments concerned.

19. In appointing service personnel, the Committee shall not apply in excess of 30 per cent of the annual income accrued.

20. In order that the Head of Office may manage the service personnel, the Committee shall confer as may be necessary powers relating to service affairs to the Head of Office.
Chapter VII
Maintenance of Fund and Auditing of Accounts

21. In order that the Head of Office may maintain the accounts systematically and to enable auditing thereof, the Committee shall prescribe accounts procedures in consultation with the Auditor-General. Accounts shall be maintained in accordance with the accounts procedures so prescribed.

22. The Committee shall cause the accounts maintained by the Head of Office to be audited by the person assigned responsibility by the Auditor-General.

Chapter VIII
Miscellaneous

23. The Committee has the right to carry out the development works at its discretion. However, works involving policy shall be carried out only after obtaining the approval of the Chairman of the State Law and Order Restoration Council.

24. The Committee shall operate under its own name and common seal, and shall have perpetual succession and power to sue and be sued in its corporate name.

25. In order to have speedy trial and disposal of municipal cases involving commission of offences for which proceedings have been instituted in respect of the City of Yangon Municipal Act, rules, bye-laws, orders and directives, the Committee shall carry out in consultation with the Supreme Court for opening of Courts at appropriate places within the limits of the City of Yangon Municipality.

26. Funds owned by the previous Yangon City Development Committee or Board, moveable and immoveable property, works in the process of execution, works which have been completed, assets and liabilities shall devolve respectively on the Committee.

27. The Committee shall apply the following existing laws, rules, bye-laws and orders in so far as they are not contrary to the spirit and concepts of this Law:
   (a) The City Development Law and orders issued hereunder;
   (b) The City of Yangon Municipal Act, rules, bye-laws and orders.

28. For the purpose of carrying out the provisions of this Law, the Committee:
   (a) may, with the approval of the Chairman of the State Law and Order Restoration Council, issue necessary rules;
   (b) may issue necessary orders, directives and procedures.

Sd./ Saw Maung
Senior General
Chairman
The State Law and Order Restoration Council

* Since the version of the law in the UN Habitat report is difficult to read, here is a more legible text (Online Burma/Myanmar Library).