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UTILIZATION OF RESOURCES

FORMULATION AND IMPLEMENTATION OF HOUSING
AND INFRASTRUCTURE POLICIES AND PROGRAMMES

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INTRODUCTION

1. The purpose of this paper is to present the general course of action to be followed in the preparation of housing and infrastructure policies and programmes or, to use a more modern term, environmental development/human settlements policies and programmes, with emphasis on the effective utilization of national resources. The specific course of action, however, should be based on existing and anticipated national resources and, wherever available, national economic development forecasts, existing and anticipated needs for housing and related infrastructure and the goals, targets and priorities established by the national Government for the formulation and implementation of a comprehensive national housing and infrastructure - environmental development/human settlements - policy and programme.
 2. As guidelines can not be universally applicable, the field has deliberately been confined to those issues most frequently discussed. Some countries may need to resolve several or all of the issues discussed in this paper. On the other hand the guidelines may not take into consideration issues which are important for some countries, but their omission does not mean that they are of no importance.
 3. This paper will not attempt to prescribe specific policies but to present policy alternatives and their possible consequences, insofar as they can be foreseen. Furthermore, the policies chosen should be flexible to allow for the requisite modifications as conditions change or the objectives set are found to be inadequate or wrong.
 4. It should also be mentioned that the principle underlying this paper has been that all countries, no matter how limited their resources, are desirous and capable of making improvements in their housing and infrastructure conditions and are thus seeking guidelines for policies and programmes which will enable them to achieve their objectives.
 5. It may also be pointed out that the original scope of this paper was altered too late for a complete revision to be made. However, the various sections are to a large degree separate entities so that the reader can limit himself to these sections which he finds of particular interest. In addition, considering the volume of documentation prepared for the Regional Conference, it was found expedient to issue this abridged version of the original paper (E/CN.14/HUS.4).
 6. It has also been found necessary to limit the number and content of the annexed tables as basic up-to-date data are lacking.
 7. Attention is further drawn to the following papers which have been prepared at the same time:
 - (i) Theoretical study of feasible standards, goals and targets for housing and related infrastructure - environmental development - at varying rates of growth and capital formation;
 - (ii) General organizational chart of an environmental development department;
-

- (iii) General organizational chart of an environmental development bank;
- (iv) National building cost analyses;
- (v) List of current market prices for various building materials;
- (vi) List of current salaries and wages in the construction trade.

PLANNING

DEVELOPMENT PLANNING

General

8. Development planning will vary according to the economic, social and political conditions prevailing in each country. Nevertheless, the objectives of development planning in any country should include the following:

- (i) The elimination of poverty through the development of human and national resources;
- (ii) The preservation of health through the prevention of disease; and
- (iii) The spread and improvement of education through determined campaigns against illiteracy and through far-sighted encouragement of higher education.

9. The objectives of development planning as stated above suggest abstract and universal norms rather than concrete and localized goals of a qualitative nature. In concrete terms, the objectives or targets of development planning are expressed in specific indicators of levels of living such as per capita national income, per capita food consumption, literacy ratio, etc. All these indicators, together with similar factors, show the rate of growth as a target in national development planning. The objectives of national development planning can then be summarized as follows:

- (i) Improvement of per capita income, to be achieved through increased aggregate production of agricultural and industrial goods and services;
 - (ii) Reduction of inequality in income structure and the achievement of a more equitable distribution of national wealth among rural and urban populations to be achieved through increased employment, taxation of high incomes and possibly also through nationalization of certain productive resources; and
 - (iii) Improvement of standards of living, to be achieved through appropriate formulation and implementation of housing policies and programmes for low-income groups, social welfare planning within overall development needs, the improvement and extension of medical and health services and orientation of the national education structure to meet development needs.
-

10. National development planning should take into account the optimum utilization of all available material and human resources so that national wealth increases over the plan period, thereby resulting in a higher standard of living. All aspects of economic, social and physical development are closely interrelated and have an impact on the attainment of balanced development offering a good life for the individual, the family and society as a whole.

11. The procedural steps to be followed in national development planning are, by and large, the following:

- (i) Assessment of needs;
- (ii) Determination of objectives and targets;
- (iii) Establishment of priorities among objectives;
- (iv) Mobilization of resources and determination of means of action;
- (v) Implementation; and
- (vi) Evaluation.

Assessment of needs

12. A thorough knowledge and critical analysis of the existing situation should precede any planning effort. Planning has to be based on facts which reveal the needs and problems as well as on resources and potentials and a reasonable forecast of demographic growth as well as economic, social, physical and political developments. Efficient and effective planning will, therefore, require adequate and accurate statistical data on the economic, social and technical fields.

Determination of objectives and targets

13. Once the entire socio-economic situation of the country has been ascertained, and the needs and problems have been identified, it is necessary to decide which of the needs should be met in order to achieve certain national development objectives. After the overall development objectives have been established, the specific targets in the sectoral fields should be determined.

Establishment of priorities among objectives

14. In any country and particularly in a developing country, development problems and needs are greater in number and in extent than the resources available to meet them. Consequently, some priority has to be established among the objectives and targets identified for development planning. The criteria for establishing priorities include:

- (i) Financial and manpower resources;
- (ii) Comparative impact of delayed or immediate action;
- (iii) Readiness of public to participate in and benefit from a given sector, and

- (iv) Impact of the development targets on interregional and international relations.

15. It must be made clear, however, that the feasibility of any project and its consistency with the overall objectives of national development planning should be taken as a principal factor in determining priorities.

Mobilization of resources and determination of ways of action

16. Resources and especially those available to the Government, should be identified and assessed by the time priorities are established. A thorough economic study should be undertaken in order to determine factors such as national products, national income, foreign aid and manpower resources before objectives are determined and priorities established. Nevertheless, there may be other resources that should be explored and mobilized even at a later stage, particularly where non-governmental resources play an important role.

17. Closely related to the mobilization of resources is the determination of means of action, including the search for the best course, the consideration of the various steps to be taken, the establishment of a time-table and the consideration of all the conditions required for the means and resources to be put into operation.

Implementation

18. Implementation means the execution of the development plan and the co-ordination of the different tasks embodied therein. It includes legal provisions and financial measures as well as direct action in the field. It requires the participation of Government authorities, voluntary organizations and individuals. To be effectively implemented, a plan should have the full co-operation of all concerned, in both the public and private sector. The development of public will and confidence is as important as the availability of finance and technical know-how for effective plan implementation.

Evaluation

19. Evaluation of results is the final stage in the planning process. The benefit to be derived from evaluation lies in that it provides empirical guidance for future planning. It should be noted, however, that evaluation as such is not limited to the end results. Some evaluation is carried out at every stage of the planning process. In the collection and assessment of needs, in the mobilization and allocation of resources, an appreciable amount of checking and testing, weighing and standard setting is effected. In fact, flexibility is a necessity in all planning and reasonable flexibility can be exercised only on the basis of evaluation at given stages in the planning process.

HOUSING AND INFRASTRUCTURE - ENVIRONMENTAL DEVELOPMENT - PLANNING

General

20. The formulation of policies and programmes for housing and infrastructure - environmental development - has often encountered difficulties arising from a

lack of information regarding the methods and techniques required. Furthermore, the preparation of national development plans has been primarily oriented towards economic development, where schemes such as housing and related infrastructure, considered solely as a social investment, have been given low priority. This negative attitude towards housing and related infrastructure is fortunately declining and their significance as a factor in general and comprehensive development is nowadays generally recognized. As a consequence the process of formulating policies and programmes for physical planning with special reference to the housing and infrastructure sector is beginning to receive special attention as a basis for the implementation of national development plans.

21. The apparent lack of appropriate national housing and infrastructure policies and programmes has resulted in an acute shortage of dwellings and in an increased number of uncontrolled settlements, the problems of which have been further aggravated by the present trend in population growth in general and the increased migration to urban areas in particular. It is, therefore, imperative that realistic national housing and infrastructure policies and programmes should be implemented.

22. Furthermore, emphasis on the housing and infrastructure sector will create incentives for various industries and lead to better health standards, both of which will increase employment and income generation. The most important contribution of the housing and infrastructure sector to economic development is that of capital formation, which in turn benefits investments in industry, agriculture, etc.

Needs

23. Needs differ from requirements as measured in terms of economic demand. Analyses of the market for housing in developing countries usually indicate the proportion of the population able to afford housing at a predetermined price or rent, with those below the income level that exert such effective demand presumed to be out of the market. If, however, a country's values are such that it feels concern for those who are not yet able to exert economic demand, it would include in its compilation of needs the quantities or qualities of housing required to bridge the gap between existing conditions and what it considers an acceptable minimum for all.

24. In housing and infrastructure development, the needs in most developing countries take many forms and, in addition to actual housing as such, related facilities and services such as water supply, waste disposal, educational and recreational facilities are wanting.

Standards

25. In housing development, standards vary widely from country to country, by region, in rural and urban areas, by stages of development and urbanization and with climate, culture and time. Apart from the generally accepted vague terminology of minimum, maximum or average standards, standards will be considered here as dependent on the conditions actually existing in a country, such as the proportion of families homeless or living in conditions of overcrowding or dilapidation, resources available in the form of land, building materials, labour and investment, competing claims of other needs such as nutrition, health, education and industry, rate of population growth, productivity and savings, stage of technology, particularly

in the construction industry and levels of wages and incomes in relation to building and land costs. If in any country the standard is set too high, the goal will be unattainable. If the standard is set too low, the effect on the development process will be limited. A standard acceptable today in the light of the interplay of the factors mentioned above may have to be increased or reduced as conditions change.

Goals

26. The term 'goal' is used to denote specific objectives of housing and infrastructure policies and programmes with due regard to the resources available or expected to become available within a specified period of time, to indicate the type of development desired and the results to be achieved. Goals may be long-range, intermediate-range or short-range and expressed in economic, social or physical terms, qualitatively or quantitatively. Like standards, goals are subject to change as time passes and as conditions, needs and even values change. It is vital, however, that until they are changed, the goals should represent the frame of reference for the formulation of policies and programmes, the determination of priorities and development planning in general.

HOUSING AND INFRASTRUCTURE POLICIES AND PROGRAMMES

General

27. Housing and infrastructure or environmental development policies entail formulation by the Government of goals and targets for housing the population of the country and the development of adequate machinery for achieving these goals and targets with particular reference to the resources available in the form of land, building material, labour and investments.

28. Housing and infrastructure or environmental development programmes involve step-by-step listing of specific things that need to be done in accordance with the relevant policy, to carry out a plan, identified as to time, place and means and the development of adequate institutions for the administration and implementation of the programme.

29. When formulating and implementing housing and infrastructure or environmental development policies and programmes, the following aspects should be given particular attention:

- (i) Planning for population growth;
- (ii) Making use of the unemployed and underemployed;
- (iii) Increasing national productivity and real incomes; and
- (iv) Increasing capital formation in housing and related infrastructure.

Planning for population growth

30. In formulating and implementing housing and infrastructure or environmental development policies and programmes which meet both present and future needs, it is

necessary to take future population growth in account and to develop programmes geared to the growth of total population and of urban population in particular. In many developing countries, urbanization seems to occur well ahead of industrialization, either because of lack of food or land in the countryside, or because of the hope of a better life in the city. A developing country faced with this situation might decide on at least the following objectives and undertake programmes designed to achieve them:

- (i) To make the rural areas and smaller urban centres more economically viable and more livable;
- (ii) To divert as large a proportion of the population increase as feasible to the smaller urban centres and to relatively undeveloped portions of the country where resources can be developed; and
- (iii) To plan the location of new industries, where feasible and economic, so as to draw labour out of the swollen urban countries.

Utilizing the unemployed and underemployed

31. A factor closely related to housing and infrastructure is the existence in many developing countries of a large number of unemployed and underemployed consisting primarily of unskilled rural migrants, eking out a living, using their time and energies relatively unproductively. The resulting poverty makes it impossible for them to afford decent housing and related public facilities and utilities, while at the same time, the construction of such dwellings and facilities and utilities could be one of the most effective ways of using this wasted manpower. Accordingly the following objectives might be taken into account:

- (i) Absorbing the unemployed and underemployed into the main stream of economic life in rural as well as urban areas so that they have a high enough income to afford decent housing and public facilities and utilities;
- (ii) Speeding up the developing process itself by utilizing wasted human resources and as a first step mobilizing people in the construction of dwellings and related infrastructure; and
- (iii) Helping migrants to make the transition from rural to urban living through programmes of training and urban community development.

Increasing national productivity and real incomes

32. One central goal of the development process in all countries is to increase national output and productivity and the real income of the population. As a basic goal of development, an annual rate of increase of five per cent has been suggested in the average developing country's gross domestic product. Real incomes, however, as expressed in per capita income terms at constant prices, usually rise at a slower rate than the gross domestic product, or they may even fall while the latter is rising. Levels of housing and infrastructure, because of their large capital-output ratio and the fact that the income from them can be consumed only over a long period of years, can not usually be raised as fast as the gross domestic product or the other elements in people's income. The following objectives should therefore be given consideration:

- (i) Increasing wage levels and national incomes in relation to the gross domestic product and thus the ability of the people to pay for housing;
- (ii) Increasing savings and investment in relation to the gross domestic product;
- (iii) Finding the optimum relationship between consumption and investment and planning for balanced social and economic development; and
- (iv) Utilizing housing and related infrastructure for the purpose of raising the level of real income, savings and investment.

Increasing capital formation in housing and infrastructure

33. Allocating a large percentage of the gross domestic product to housing and infrastructure does not of itself create the financial or other resources needed. Nor is it practicable to assume that such an increase can or should be made at the expense of other urgently needed investment in other sectors of development, unless, of course, there have been in the past unwise or unbalanced development policies which the increase may correct. In a developing country, however, increased investment in this sector can be taken out of the overall increase in output and savings which the development process creates.

ALTERNATIVE FORMS

34. Governments in countries throughout the world have selected different methods and measures for the implementation of housing and infrastructure or environmental development programmes. Some of these approaches used are: financial facilities, cost-reductions and incentives.

35. It would be wrong to assume that the participation of Government, directly or indirectly, as detailed below is always required. On the contrary, experience has proved that undue intervention by the Government can lead to unexpected problems. Therefore, Government intervention in most countries should be subject to continuous readjustment.

36. Methods of intervention suitable for one country might be found ineffective in another. In African countries, a careful approach is required when attempts are made to use the experience of industrialized countries in the formulation of policies and the implementation of programmes. The best results may be expected when a Government implements its housing and infrastructure or environmental development programme in such a way that it is in the interest of the individual to accept a housing development plan integrated in the Government's overall plan for economic and social development. A framework has to be provided so that the pursuit of personal interests coincides as closely as possible with the economic and social goals of the Government.

Financial facilities for the housing sector

37. Apart from the organization and establishment of machinery for savings and credit facilities, both public and private, which are discussed in greater detail before the Government may facilitate the financing of housing and infrastructure or environmental development by:

- (i) Supplying part or all the capital in the form of a grant for technical infrastructural works such as roads, water supply, sewage system and electricity supply without any obligation to pay principal or interest (it is assumed that socio-cultural infrastructural works, as defined below, will be provided to the individuals without any obligation to pay principal or interest);
- (ii) Assisting individuals by providing dwelling layouts and available technical assistance, plots and related indispensable infrastructure such as basic roads, collective water supply and sewage systems - referred to as "site-service-schemes" - with the costs of plot and related infrastructure inclusive of future maintenance to be repaid over a long period and other services being provided free of charge or at a nominal cost; alternatively, the provision of building materials, or the structural framework, might also be contemplated with related costs being repaid over a long period;
- (iii) Assisting individuals by providing dwelling layouts, available technical supervision and equipment such as block-making machines and concrete mixers under "technical assistance schemes", with all services being free of charge or at a nominal cost;
- (iv) Assisting members of approved housing societies - referred to as "roof loans societies" - through limited loans supplied in the form of building materials - "roof loans" - for the completion of dwellings which have been begun or the improvement of existing dwellings, with the value of materials being repaid over a relatively short period of time;
- (v) Assisting groups of individuals by providing dwelling layouts, technical supervision and building materials under "aided self-help schemes" with the value of materials being repaid over a long period of time and other services being free of charge or at a nominal cost;
- (vi) Supplying part or all the capital for "tenant purchase" housing for certain groups of individuals at agreed rates of interest and with facilities for repayment over a long period;
- (vii) Promoting credit facilities for the building materials and contracting industries in so far as they are engaged in housing and related infrastructure production.

Cost reductions in the housing sector

38. The Government may promote reductions in cost for new dwellings and infrastructure through intervention as regards: land costs, standards, construction costs, administrative costs and financing costs.

Land costs

39. The Government may take actions to reduced land costs, directly or indirectly, by:

- (i) Supplying land free of charge under the "site-service-schemes" discussed above;
- (ii) Ensuring that taxes and levies on land used for housing and related infrastructure are as low as possible;
- (iii) Promoting the elaboration of more efficient layouts for "site-service-schemes".

Standards

40. The Government may take action affecting, directly or indirectly, the standard of housing and infrastructure and thus the total building cost by:

- (i) Ensuring the adoption of standards corresponding to the anticipated incomes of potential occupants;
- (ii) Ensuring the adoption of lower standards for the improvement of existing permanent or temporary dwellings;
- (iii) Promoting the elaboration of standardized layouts for dwellings and infrastructure and limiting the number of layouts;
- (iv) Restricting luxury dwellings and promoting the use of available resources for medium- and low-cost dwellings;

Construction costs^{1/}

41. The Government may take action to reduce construction costs, directly or indirectly, by:

- (i) Ensuring the elaboration of building codes and building regulations and bye-laws in accordance with the requirements of producing housing and related infrastructure economically, which implies the acceptance of minimum standards and thus the use of locally available building materials;
- (ii) Ensuring that taxes and levies on local building materials are as low as possible;
- (iii) Ensuring that tax reductions are granted to building materials and contracting firms in so far as they are engaged in housing and related infrastructure production;
- (iv) Promoting standardization and modular co-ordination of essential building elements and components;
- (v) Promoting the production and use of cheap local building materials, which implies in certain cases production of improved and/or new building materials;

^{1/} See also paper entitled "The effects of building costs and other financial considerations" (E/CN.14/HUS.11).

- (vi) Promoting the introduction of improved and/or new cost-saving methods and techniques;
- (vii) Promoting the introduction of "site-service-schemes" referred to above;
- (viii) Promoting the introduction of "aided self-help schemes" referred to above;
- (ix) Promoting large-scale production of standardized dwellings;
- (x) Ensuring long-term housing and infrastructure programmes;
- (xi) Ensuring that the entrepreneurial profit is reduced to a recognized level;
- (xii) Promoting competition in the building materials and contracting industries;
- (xiii) Promoting training facilities in the technological branches of the building materials and contracting industries to which reference is made below;

Administrative costs

42. The Government may take action to reduce administrative costs, directly or indirectly by:

- (i) Ensuring that administrative costs are reduced to a recognized level;
- (ii) Promoting competition between private enterprises as well as between public and private enterprises engaged in housing and related infrastructure production.

Financing costs^{2/}

43. The Government may take action to reduce financing costs by: ensuring that the interest on long-term loan is as low as possible.

Incentives for the housing sector

44. The Government may take action which, directly or indirectly, affects housing and infrastructure and thus the total building cost by:

- (i) Acting, directly or indirectly, as the initiator, owner and manager/operator of rental housing projects; even actual construction might be considered;
- (ii) Easing the annual burden of the owner-user, tenant-purchaser or tenant by granting certain subsidies, not dependent on the dwelling but on the family occupying the accommodation;
- (iii) Intervening in the use of the existing housing stock by, for instance, fixing all rents or introducing rent control at certain levels, as suggested below;

^{2/} Ibid.

- (iv) Alleviating the housing problem in already overcrowded urban centres by the development of new settlements and new economic opportunities outside those existing centres.

SHORT-, MEDIUM- AND LONG-TERM MEASURES

45. A short-term programme is defined as the decisions to be taken and the activities to be developed within, for example, the space of one year. The date of commencement depends on a number of considerations but should, nevertheless be as early as possible.
46. A medium-term programme is defined as the decisions to be taken, the activities to be developed and the targets to be reached within, for example, a period of five years.
47. A long-term programme, is defined as the decisions to be taken, the activities to be developed and the targets to be reached within, for example, a period of ten years. However, for certain aspects of planning a period of ten years will be inadequate and periods of 15 to 20 or even 30 years will be required.
48. It is thus clear that the preparation of the medium-term programme will have to be initiated within the short-term programme period. The same may be true for certain aspects of the long-term programme. The preparation of the long-term programme should, in any case, receive attention within the medium-term programme period. Short-, medium- and long-term programmes should be regarded as different aspects of one all-embracing endeavour. The long-term programme is mainly determined by the final goals, whereas short- and medium-term programmes will be determined more by the economic and other means of reaching those goals in successive steps. The short-term programme should consist not of a number of ad hoc arrangements, but of decisions and measures for things to be done as part of an integral long-term scheme.

Short-term programmes

49. The short-term programme should comply with two main requirements. Care should be taken not to administer short-term measures that might hamper the attainment of the long-term goals and the introduction of the reformulated housing policy and programme should not cause serious disturbances in the building materials and contracting industries which might result in a lowering of the actual production. It would be of no use, for instance, to limit the construction of more expensive housing as long as there are not sufficient possibilities of increasing the production of low-cost housing correspondingly. It would also be detrimental to the development of the housing sector, for instance, to introduce taxes on certain imported building materials as long as there is no way of substituting the imported materials by materials produced locally. Proper timing of the different measures is imperative.
50. The organization and establishment of machinery for the formulation and implementation of all the various tasks to be undertaken in relation to the short-term policy and programme as well as subsequent medium- and long-term policies and programmes are discussed in greater detail under the chapter relating to the organization of Government machinery for housing and infrastructure.

51. The main tasks to be initiated within the period of the short-term policy and programme are:

- (i) Preparation of guidelines for a housing and infrastructure policy and programme, defining realistic standards, targets and goals for determined periods. This paper may serve as the basis for the elaboration, in accordance with directives from the Government of a comprehensive national housing and infrastructure policy and programme;
- (ii) Compilation of data needed for setting the standards, targets and goals referred to below;
- (iii) Ensuring that sufficient capital is made available in subsequent years for the gradual expansion of low-cost housing schemes;
- (iv) Preparation of physical plans in general and regional plans in particular;
- (v) Revision or elaboration of building codes and building regulations and bye-laws;
- (vi) Preparation of standards for land use;
- (vii) Preparation of layouts for pilot housing schemes;
- (viii) Ensuring that a sufficient number of experts and trained personnel are made available in subsequent years to undertake the various tasks;
- (ix) Training programmes for administrative, economic and technical personnel and for skilled labour in the building materials industry, for contractors, supervisory staff and skilled and semi-skilled labour in the contracting industries;
- (x) Research to develop existing building materials industries;
- (xi) Systematic geological survey of available raw material deposits;
- (xii) Dissemination of information to the public in general and to the building trade in particular as to the Government's general policy in the housing sector.

Medium-term programmes

52. The main tasks to be initiated or continued within the medium-term programme period are:

- (i) Completion and/or follow up of the activities described above in connection with short-term programmes;
- (ii) Acquisition of land;

- (iii) Preparation of master plans and detailed town planning schemes;
- (iv) Preparation of layouts for standardized types of dwellings and on general public facilities including specifications, bills of quantities, general conditions, etc.;
- (v) Construction of pilot housing schemes, including site-service-schemes, technical assistance schemes, roof loan schemes or aided-self-help schemes and to use the experience gained from these pilot projects as a basis for the gradual development of low-cost housing schemes;
- (vi) Preparation of layouts for and the construction of large-scale standardized low-cost housing schemes;
- (vii) Improvement of existing housing;
- (viii) Research and development work into existing or new building materials;
- (ix) Research into the economic conditions for the development or creation of building materials industries;
- (x) Revision or elaboration of new regulations for loans, rents, leases, etc.

Long-term programmes

53. The preparatory work done during previous periods should by now be concluded, the effects known and the targets attained. In the event that targets and goals have not been attained, renewed and concentrated efforts, which contribute positively to remedying the deficiencies encountered at the time of launching the short and medium-term programmes, should be undertaken. A periodic reappraisal of the housing situation and a revision of the targets may be necessary.

SPECIFIC CONSIDERATIONS

General

54. In the public sector, housing and infrastructure are competing with all other sectors for funds. The present deficiencies in the housing and infrastructure sector are a clear indication that this sector has not received sufficient attention in the past, not necessarily in terms of funds, but often in terms of planning incentives and above all of a realistic housing and infrastructure policy and programme.

55. Housing is unique in the development process in that it is a prerequisite for it as well as an objective. The health and efficiency of the individual are directly affected by his housing conditions and the construction industry, embracing the building materials industry and the contracting industry, itself has a very high accelerating effect on the rest of the economy. Furthermore, dwellings constitute an asset, which rarely depreciates in value but rather appreciates with the overall economy. The social and political benefits of proper housing and related infrastructure can hardly be overestimated.

Housing and infrastructure as economic regulators

56. In view of the accelerating effect of the construction industry attributable to the use of local building materials and labour, labour-intensive and diversified demand and a final product which is income-producing and comparatively durable, its activity is often used as an instrument for both stimulating and for slowing down economic activity, especially in those countries where the public sector is responsible for housing and related infrastructure. In less developed countries, where the main problem is to stimulate economic activity and employment, there seems no need to slow down the activity of the construction industry for years to come.

Housing and infrastructure as employment regulators

57. A comparison between advanced construction methods, relying on a high degree of prefabrication or mechanization, and conventional labour-intensive construction demonstrates that the former will offer less employment opportunities, and primarily of a skilled nature than the latter. Furthermore, it is evident that the former would require large amounts of capital to set up plants and even larger sums to finance production. Thus when technical inputs into housing and infrastructure are limited more employment is generated, especially for demi- and unskilled labour.

58. Comparing large-scale projects undertaken by public or private enterprises and small-scale projects undertaken by individuals it is often argued that the former will achieve some degree of economy of scale. However true this may be, in self-help projects savings are obtained by the input of self-help efforts, which are of practically no cost to the public sector.

Housing and infrastructure as social regulators

59. The importance of housing, in making a tangible contribution to the individual should be stressed and in this respect, home ownership can make a considerable difference to the lives of the population.

60. New dwelling areas should be provided with community facilities including utilities, general public facilities and commercial facilities. The location of these areas should be determined by plans for industrial, commercial and possibly also agricultural development.

Housing and infrastructure as rural/urban regulators

61. The present trend towards increasing migration from rural areas to urban areas aggravates the housing situation. Although the rural areas in general have great potential, nevertheless expectations of employment, education and other amenities obviously attract the rural population to urban areas.

62. Another unfortunate aspect of this phenomenon, apart from the growing unemployment problem, is that in many cases it is the dynamic element of the rural population that seeks better opportunities in the cities. As a consequence, the rural areas are weakened while the economic opportunities in the urban area are so limited that the talents of the migrants are unexploited or underexploited.

63. In order to slow down the present trend, let alone revert it, larger communities, often referred to as growth centres or growth poles should be planned in rural areas and provided with housing as well as community facilities.

Housing and infrastructure priorities

64. When selecting a type of housing with related infrastructure for a specified income group, an effort should be made to maximize its impact on the level of employment, minimize the need for capital input and reduce the import content of that input. A given sum earmarked for housing in a capital programme can yield vastly different amount of dwelling units according to the labour intensity factor, the reliance on costly and imported inputs and the relationship between the initial outlay and the annual maintenance costs. It would appear that the labour content could be increased when the quality of materials is reduced, which implies lower initial costs but higher recurrent maintenance costs, which, in turn, extend the labour content over the entire life of the dwelling.

65. Insistence on high quality, high initial cost housing schemes not only makes adequate housing out of the reach of lower-income groups but also impedes the growth of employment. High quality housing implies skills which are bound to remain in short supply for many years to come. A relaxation of quality standards, on the other hand, would expand employment opportunities. The import content of building materials would also decline with the adoption of more tolerant building regulations and bye-laws. Not only would there be greater utilization of domestic materials but import substitution measures are more likely to succeed when the materials produced locally are relatively simple and do not require complex and costly machinery.

66. Whilst both urban and rural housing are required, the problems in the urban areas generally are so much greater that if any priority were to be given, it should unquestionably be to the urban area, where the marginal benefit to the individual of capital input is the greatest.

Rent control

67. The philosophy behind a rent control policy, which has long been adopted in developed countries, is that, in the case of severe shortage of dwellings, landlords should not exploit tenants. A dwelling is considered a basic need, which should not be subject to the normal price mechanism of supply and demand. This idea is widely accepted and clear enough in its concept, but the problems involved in its implementation are well known.

68. In view of these problems and, of the costs involved, a standing tribunal, dealing with cases of breach of contract between landlords and tenants, might constitute a realistic approach to the question of rent control. This tribunal would deal with and enforce its decisions on such matters as untimely evictions, change of rent during the period of lease, lack of maintenance and other kinds of negligence on the part of both landlord and tenant, devious contracts and interpretation of unclear or unusual contract terms.

69. In addition, if rents are not pegged, the economically weaker urban dwellers will suffer, forcing poorer families to huddle into crowded dwellings. At the same time, if rent control measures are not judiciously applied, they will cause a reduction in the rate of construction, reduce investment in housing and lead to lack of maintenance by landlords.

THEORETICAL STUDIES

70. In order to facilitate the preparation of a realistic national long-, medium- and short-term housing and related infrastructure programme, together with equally indispensable programmes for other subsectors of the building industry, it has been found desirable to carry out certain theoretical studies. These studies should, in general terms, indicate feasible goals and targets for some alternative types of housing, namely minimum standard dwellings, core or shell dwellings and site-service-schemes, together with related infrastructure (public facilities and utilities). The studies would be confined primarily to new dwellings, including the replacement of existing obsolete housing stock, but would also cover the improvement of existing housing stock at varying cost levels and on the basis of varying assumptions as to rates of growth of the population, composition of rural and urban population, rural-urban immigration and rates of capital formation.

71. The chosen capital formation values of 2 per cent of the gross national product for dwellings and land and 1 per cent of the gross national product for community facilities by no means correspond to desirable average figures but have been chosen to permit without undue time-consuming operations a recalculation of the results, using figures being considered appropriate in respective country. In general terms, it seems that the total capital formation value would be a minimum of five per cent of the gross national product and that the normal range of capital expenditures for community facilities would range from 50 per cent to 100 per cent of housing expenditure. In the early stages of urban development, however, it might be necessary to allocate more for community facilities than for housing.

72. Although the studies are rather comprehensive, comprising a large number of tables and graphs, when possible, future programmes should be based upon even more detailed analyses, taking into account also the percentage distribution of the population in different groups, such as families, single persons, elderly persons, disabled persons and students and pertinent norms as to the size, structure and equipment of the dwellings for respective groups, the ratio between high-rise and low-rise dwellings, the ratio between private and publicly owned dwellings, etc. The cost figures used must be as correct as possible, i.e. compiled on the basis of cost analyses which are as accurate as possible and not on arbitrary rules of thumb. Before the adoption of the results so attained, it is imperative, however, that all possible restrictions limiting their range should be carefully evaluated, so as to ensure, for instance, that the housing expenditure, does not exceed a determined percentage of the available income in different population groups. It is, therefore, imperative that the effect of alternative interest levels, alternative rates in the construction of new dwellings and growth rates in housing expenditure for existing dwellings should be evaluated in detail at various stages of the planned programme period, basing the projections on national data available in the initial year.

73. As the housing and infrastructure programme will constitute only a part of the national building programme it is necessary to apply as many assumptions as possible relating to future development. It is therefore desirable that the analyses are prepared in such a way that changes in basic assumptions can be easily introduced, preferably in the form of computer programmes which allow computation of many alternatives, including a breakdown of results by regions of

the country. Although such programmes should be comparatively easy to devise, nevertheless it should be stressed that the programmes can be rationally applied and lead to meaningful results only if they are soundly based.

74. Furthermore, in order to ensure the implementation of long-term programme for housing and infrastructure as well as for other subsectors of the building industry, it is imperative that the requisite economic resources and administrative and technical governmental agencies are or will be made available, and also that other requisities, such as the capacity of the construction industry, comprising the building materials industry as well as the contracting industry, the supply of labour at the skilled, unskilled and intermediate levels and the supply of land, etc., are or will be met.

DATA FOR STANDARDS, GOALS AND TARGETS FOR HOUSING AND INFRASTRUCTURE

75. In order to work out realistic standards, goals and targets certain basic data are necessary. In the case of countries at a relatively early stage of development where data may not be available in complete, detailed or accurate form, the first steps in the formulation of decisions about the volumes and kinds of housing and infrastructure needed should be taken on the basis of the data at hand or estimated from simple surveys and case studies. With time, increasing information should make it possible to determine existing conditions, needs and resources more exactly. The data should be expressed separately for urban and rural areas.

76. In countries where population censuses are to be undertaken, it is strongly recommended that the census programmes, wherever possible, should take due account of the need for the aforementioned data.

77. It is obvious that, in the formulation of a realistic programme, resources, standards and goals, have to be adjusted in relation to each other and to the other variables involved.

GROSS NATIONAL PRODUCTS (GROSS DOMESTIC PRODUCTS) AND FISCAL DATA

Gross national products (gross domestic products) data

78. The following data, both current and past, based upon national accounts, statistics or other sources, where available, constitute a useful framework for measuring the overall economic situation and for future projections:

- (i) The aggregate gross national product (gross domestic product) and the per capita gross national product (gross domestic product);
- (ii) The amount and proportion of the gross national product (gross domestic product) represented by fixed capital formation; and
- (iii) The proportion of gross national product (gross domestic product) and of total fixed capital formation represented by housing and related infrastructure.

Fiscal data

79. The following data, both current and past, where available, constitute a useful framework for measuring the general economic situation with specific reference to the housing sector, and for future projections:

- (i) Type and amount of taxes collected;
- (ii) Amount of public money going into housing investment or into supporting facilities and utilities in the form of loans or grants;
- (iii) The effect of the land taxation system on land prices and land speculation;
- (iv) The effect of tax incentives on the activity of the housing and related infrastructure sector.

Population data

80. The following data, both current and past, based upon local registration, land tenure information, head counts, censuses or other sources, where available, constitute a useful framework for measuring population trends and for future projections:

- (i) Population counts;
- (ii) Household and family composition and distribution by number of persons, sex and age;
- (iii) Birth and death rates;
- (iv) Urban and rural population;
- (v) Migration from rural to urban areas or external migration and immigration.

Economic data

81. The following data, both current and past, where available, constitute a useful framework for measuring the relative level of industrial and economic development and for future projections:

- (i) Proportion of labour force employed in agriculture, industry, commerce and services;
- (ii) Amount and proportion of unemployment and underemployment in the labour force;
- (iii) Typical earnings or wage levels of major economic groups;
- (iv) Distribution of families or households by monthly or annual incomes or expenditures;
- (v) Goals or targets already set for future industrial development.

Housing data

82. The following data based upon, for instance, statistical sampling pending a complete housing census, where available, constitute a useful framework for judging the current housing situation:

- (i) Type of construction;
- (ii) Structural type;
- (iii) Age of structure;
- (iv) Number of rooms, floor space;
- (v) Number of adults and children by age, sex and marital status;
- (vi) Water, toilet, bathing, cooking and heating facilities;
- (vii) Owner, renter, squatter tenure or vacant;
- (viii) Income of head of household and total household income;
- (ix) Cost of dwelling;
- (x) Percentage of ground covered by buildings and areas of open space;
- (xi) Physical condition of dwelling.

83. For a definition of dwellings, see section below relating to the classification of housing and infrastructure.

Infrastructure data

84. The following data, where available, constitute a useful framework for measuring the current relative level of general public facilities and utilities:

- (i) Proportion of households with running water available within the dwelling or within a given distance;
- (ii) Proportion of households served by modern sewerage system or properly constructed septic tanks and with a storm water drainage system;
- (iii) Proportion of households served with garbage and rubbish disposal;
- (iv) Proportion of households served with electricity, gas or other public utility;
- (v) Proportion of the population served with public transport facilities to major employment and trading centres;
- (vi) Proportion of children provided with school facilities within a reasonable distance of their homes;

- (vii) Proportion of the population provided with hospital facilities, clinics, community health centres or minimum public health centres;
- (viii) Proportion of the population provided with police and fire protection;
- (ix) Availability of community recreational facilities.

Cost data^{3/}

85. This determination of feasible standards for housing and related infrastructure requires estimates at least of the following current costs:

- (i) Cost per square metre, per cubic metre or per unit of shell of traditional houses of various materials and construction types with, if possible, a breakdown into labour, materials, overheads and profit;
- (ii) Cost per unit of piped water, toilet and bathing facilities, septic tanks, piped sewerage, electricity and similar utilities, expressed separately for utilities within or outside the building plot;
- (iii) Cost of unimproved land and as supplied with a minimum of roads and utilities for various locations;
- (iv) Cost of providing general public facilities and utilities such as schools, hospitals and health centres, public transport, community centres, parks and playgrounds and other public buildings and services per 1,000 population.

Building materials and contracting industries data

86. The determination of future capacities of the building materials and contracting industries to construct or improve housing and related infrastructure requires estimates, at least, of the following data:

- (i) Number of construction workers, with breakdown into skilled and experienced, apprentice level and common labourers;
- (ii) Possibilities for expanding supply of labour force and training;
- (iii) Availability of building materials;
- (iv) Possibilities for expanding supply of local building materials;
- (v) Number, size and type of dwelling units currently constructed per year, broken down into units built by public or semi-public agencies and contractors and under self-help schemes;

^{3/} See also paper entitled "The effects of building costs and other financial considerations", (F/CN.12/HUS.11).

- (vi) Availability of contractors by number, annual volume of construction and/or turnover, financial position, plants and administrative and technical staff.

Public administration data

87. The determination of future capacities of the public agencies concerned with housing and infrastructure in general, and, in particular with the organization and establishment of machinery to formulate and administer a comprehensive national housing and related infrastructure - environmental development - policy and programme requires at least estimates of the following data:

- (i) Availability of trained and experienced administrative, economic, financial, technical, supervisory and policy-making personnel in existing institutions and for proposed new institutions;
- (ii) Training facilities within the country, or opportunities for training abroad.

CLASSIFICATION OF HOUSING AND INFRASTRUCTURE

General

88. Housing and infrastructure can be divided in the following three main groups:

- (i) Dwellings;
- (ii) Socio-cultural infrastructure;
- (iii) Technical infrastructure.

DWELLINGS

89. Urban housing, linked with administrative centres, commercial centres, centres created by or specifically connected with industrial enterprises, and rural housing, linked primarily with agricultural enterprises but possibly also with industrial enterprises, are classified as follows:

- (i) Dwellings for high-income groups;
- (ii) Dwellings for middle-income groups; and
- (iii) Dwellings for low-income groups.

90. Furthermore, the dwellings are classified according to their conditions as follows:

- (i) Dwellings of permanent construction; and
- (ii) Dwellings of temporary construction.

91. There are also cases where people live doubled up with another family, either involuntarily or in conditions of overcrowding exceeding the country's agreed standard of occupancy, or are even actually homeless and sleep in streets or in other public areas.

Dwellings of permanent construction

92. Dwellings of permanent construction, defined as those built of materials which have proved to be weathertight, sound and durable for periods of twenty years or more, are further classified as:

- (i) Standard dwellings,
- (ii) Substandard dwellings.

Standard dwellings

93. Standard dwellings are defined as those which meet the minimum standards agreed upon in the country as appropriate for its current stage of development and resources.

Substandard dwellings

94. Substandard dwellings, defined as those excluded from the above definition of standard dwellings, are further classified as:

- (i) Improvable dwellings;
- (ii) Non-improvable dwellings.

95. Improvable dwellings are defined as those which with reasonable expenditure in relation to the cost of new minimum standard permanent dwellings can be brought up to a temporarily acceptable standard and used for a limited number of years pending the development of the country's resources to the point where they can be replaced.

96. Non-improvable dwellings are defined as all other permanent substandard dwellings.

Dwellings of temporary construction

97. Dwellings of temporary construction defined as shanties, shacks, and other makeshift constructions excluded from the definition of permanent dwellings, are further classified as follows:

- (i) Improvable dwellings;
- (ii) Non-improvable dwellings.

Improvable dwellings

98. Improvable dwellings are defined as those which with a small expenditure in relation to the cost of new minimum standard permanent dwellings can be brought

up to an accepted emergency standard and used for a limited number of years pending the development of the country's resources to the point where they can be replaced.

Non-improvable dwellings

99. Non-improvable dwellings are defined as all other temporary substandard dwellings.

SOCIO-CULTURAL INFRASTRUCTURE

100. The term social-cultural infrastructure includes:

- (i) General public facilities; and
- (ii) Commercial facilities.

101. Although this classification applies to both urban and rural areas, the standards of particular facilities may differ widely. The various building elements of the socio-cultural infrastructure are dealt with in detail below.

General public facilities

102. General public facilities include schools, hospitals, clinics and health centres, transport, social services, fire and police protection, parks, playgrounds, meeting halls, museums, libraries and other public buildings and services and related toilets, cooking and heating facilities, if any, and other public utilities within the buildings and/or plots.

103. The actual level at which these facilities should be provided is dependent on the country's total social development goals and standards and not merely on those related to the housing sector.

Commercial facilities

104. Commercial facilities will include the provision of markets, stores, repair shops and entertainment facilities and related toilets, cooking and heating facilities, if any, and other public utilities within the buildings and/or plots.

105. As commercial facilities are provided primarily by non-governmental sources in most countries they are not included in the scope of this paper.

TECHNICAL INFRASTRUCTURE

General

106. The term technical infrastructure as used in this paper includes:

- (i) Water supply;
- (ii) Drainage, sewage;

- (iii) Solid wastes;
- (iv) Transportation network;
- (v) Electricity supply;
- (vi) Gas supply;
- (vii) Environmental protection.

107. Although this classification applies to both urban and rural areas, the standards of particular utilities may differ widely. Furthermore, for low-cost housing schemes, where priorities among the various utilities generally have to be established, priority should unquestionably be given to water supply and sewage disposal.

108. Although the utilities are primarily supplied in connexion with the construction of new dwellings and improvement of existing dwellings, it may be necessary also to improve them in residential areas not undergoing construction or improvement.

109. The question of which contract form the most favourable from the technical and economic point of view for the execution of infrastructural works can not be stated as a general rule but only after thorough examination of the specific conditions prevailing in each particular case. The various contracting forms are dealt with in detail below:

110. The general conditions and specifications for the execution of infrastructural works should, from the technical and economic point of view, be elaborated on as universal a basis as possible and should comply with the requirements of economic planning and thus eliminate or at least reduce costly construction and outmoded ideas. It equally is suggested that, to the extent possible, a minimum of one complete set of tender documents for each of the infrastructural works should be prepared for the use as a valuable appraisal instrument. However, owing to the large expenditure involved in the preparation of such a set, the number of drawings as well as the extent of bills of quantities included should be limited to a minimum.

111. Apart from tender documents, cost data, comprising not only total construction costs for various types of infrastructural works based on costs per m³ of building volume and unit costs for major items, broken down into material and labour costs, but also costs for equipment and machinery with depreciation schedules, should be elaborated as another appraisal instrument. 4/

112. The data should preferably be prepared on a regional basis and the work involved undertaken or at least conducted by an appropriate organization within the United Nations family such as ECA so as to ensure continuity and the dissemination and continuous revision of the data.

^{4/} See also "The effects of building costs and other financial considerations" (E/CN.14/HUS.11).

STANDARDS OF HOUSING AND INFRASTRUCTURE

113. Minimum standards should be high enough to represent an improvement over existing standards for the bulk of population, but not so high as to be unattainable in the relatively near future. Although minimum standards should apply primarily to housing for low-income groups, it may be necessary, in countries with limited means and severe housing shortages, to set a maximum standard as well, so that scarce resources will not be used to benefit only privileged groups. Furthermore, a country's housing goals and targets and the possibility of achieving them are strongly affected by what proportion of its housing is executed at costs higher than those required by the minimum standards.

114. National building codes should be elaborated and standards should take into account not only differences between urban and rural housing, but also differences between high- and middle-income housing, using expensive building materials with a rather long life span, and low-income housing, using inexpensive building materials with a rather short life span. Furthermore, in setting standards care should be taken to make them relevant to the real conditions in the country, rather than importing them from foreign countries and thereby setting them at too high and costly a level.

115. The basic factors to be considered in setting minimum standards are: climate, custom, space, density, health and cost.

116. Standards concerning structural stability including earthquake resistance, fire resistance, thermal and accustic insulation, weather resistance, etc., are dealt with below.

Climate

117. Minimum standards should take into account the climate of the area, which may be warm, humid climate at the equatorial belt: tropical island climate; hot dry, arid climate; maritime desert climate; or composite climate and provide for adequate shelter from heat, cold, rain and wind storms, air movement to relive heat and humidity and protection from sun. The specific standards adopted for the construction of walls, floors and roofs, the height of ceiling and the provision of adequate windows, doors and terraces depends on the country's particular climatic conditions.

Customs

118. Minimum standards should be adapted to the country's local customs, using as far as possible the most suitable type(s) of traditional design, with improvements where necessary, in preference to artificially developed model dwellings based on designs and standards from highly developed countries.

Space

119. In urban areas, the idea of multipurpose space might help to reduce space requirements and building costs.

Health

120. Minimum standards which should include simple facilities for bathing and toilets, which are private and adequately illuminated and ventilated, and some means of sewage disposal that guarantees freedom from pollution. The specific standards adopted, however, should depend on the country's particular health problems, prevalent communicable diseases and similar considerations.

Density

121. For urban areas appropriate densities should be set by reference to general master plans which distribute the desired or expected urban population according to a rational land use plan and set general population levels for different parts of the urban areas. On the basis of these plans, desirable densities can be determined and appropriate standards set for plot size, coverage and open space between houses or between houses and public areas.

122. For rural areas appropriate densities should as far as possible be adapted to the country's local customs.

Cost

123. As the cost of a dwelling depends on its standard, it is evident, if the standard and cost, in terms either of what families of moderate income can afford or in terms of what the country's economy can allocate, are too high, the standard can be attained by only a portion of the population. Therefore, a minimum standard dwelling should be designed and its cost determined, making allowances for the various means of reducing costs. Then, assuming that credit facilities are available on favourable, long-range terms, it is possible to determine the minimum income necessary to afford such a dwelling.

Socio-cultural infrastructure (facilities)

124. The approach to setting basic minimum standards for socio-cultural infrastructure, i.e. general public facilities and commercial facilities, should be based on similar considerations. The provision of these facilities, however, falls under urban and rural development rather than the national housing programme.

125. The cost of these facilities is not normally considered as part of a family's housing expenditure but rather as a general social overhead. The minimum standard, therefore, should not be dependent so much on what the individual family can afford as on what the national or local Government can provide for the population out of the resources of the economy as a whole and on the relative weight given to this sector in national development planning.

126. In this connexion, it is important to adopt plans which make the facilities versatile so that other facilities can be eliminated and the level of investment lowered.

Technical infrastructure (utilities)

127. For the construction of new dwellings such factors as climate, custom, space, density, health and cost should be taken into account while for certain areas such as squatters' settlements it might be necessary to set temporarily acceptable standards below the basic minimum, or even emergency standards. Whatever the acceptable standard may be, however, it has to meet the basic requirements of health. Unless the cost of providing the tentative minimum standard is partly or fully subsidized by the national or local Government, it should be commensurate with typical household incomes and the cost of amortizing or renting the minimum standard dwelling itself.

128. The following specific measures should also be taken into account:

- (i) Once a minimum standard has been decided upon, it should not be lowered further, without substantial reason, for any project under progress;
- (ii) The quality of the installations, in terms of both materials and workmanship, should not be inferior to normally recognized standards;
- (iii) The capacity of the installations should be adapted not only to meet actual requirements but also those in the foreseeable future;
- (iv) The necessary preliminary arrangements should be made for future installations.

LAND USE AND CONTROL MEASURES

General

129. In the implementation of a viable programme for housing and infrastructure within urban areas, the provision of land generally constitutes a major problem, owing to the shortage of land at prices which make dwellings for low-income groups economically possible as a result of land speculation, tax structure, wasteful division of land and building practices and failure to enforce adequate building regulations.

130. Thus, with the increasing pressure of urban population growth, unless proper measures are taken, land rather than building materials and labour may become the most serious obstacle to the achievement of a country's housing goals.

131. In order to alleviate these difficulties the following measures are suggested:

- (i) Reduction of incentives for land speculation through a system of land taxes designed to discourage speculation in urban land and neutralize speculation profits when they do occur;
- (ii) Control over the use of urban land through suitable planning, zoning and subdivision regulations;
- (iii) Expansion of the supply of urban land through compulsory or other kinds of public purchase of land in advance of urban development or as required to meet the needs of the growing population;
- (iv) Decrease in the pressure on urban land in existing large urban centres through a feasible programme of planned decentralization including the location of industry in smaller centres and the development of new suburbs.

132. For rural areas the problem is not one of availability of land at reasonable cost as much as the lack of clearly defined and registered titles for the establishment of ownership as required, inter alia, for obtaining mortgage loans.

133. As stated elsewhere in this paper, all the various forms of intervention on the part of the Government described below are not necessarily always required and should be limited at least in the initial stages.

Land taxes

134. Land taxes as they are currently organized often present serious problems which have become apparent in many countries, where the base and even the amount of land taxes have remained unchanged for years and consequently fail to reflect changing price levels, land use and even revenue needs. Another major problem is the fact that the land tax structure encourages speculation to take advantage of urbanization. Vacant urban land, taxed at values usually far lower than the current market values, can thus be held indefinitely by the land owner, whose profit, when he finally sells, will by far outweigh the accumulated costs. Furthermore, this profit or the increment in land value is attributable primarily to growing concentrations of population rather than to contributions by the land owner.

135. In order to encourage the development of vacant land as well as to discourage land speculation a land taxation policy should be promulgated by which vacant land required for urban development will be available to both public and private developers at prices appropriate to its use in the development plan, i.e. eliminating or at least reducing the profitability of land speculation thus recovering for the public the unearned increment.

136. The land taxation policy should be formulated in terms of encouraging efficient and economic development and rational land use pattern. Adequate land value assessments can not be made unless a zoning plan, designating the land use proper as well as the permissible density is adopted. Once the assessment of land has been undertaken and an appropriate tax rate levied, special levies can be made to encourage the early development of vacant land in areas where public improvements have been carried out and where development priority has been accorded. Prolonged vacancy in such areas can be penalized by continuously increasing tax rates. When the tax on vacant land is levied at a higher rate than the ordinary tax it is necessary to ensure that this does not lead to premature, scattered construction of low density, poor quality buildings to keep the land from being defined as vacant.

137. The question of taxes on land profits presents difficult problems. When the tax is levied only upon sale and in addition to being high is applied at progressively increasing rates there is an evident risk that sales of land will not occur or will be concealed behind manoeuvres not involving outright transfer of title. When the tax is levied on the increment every few years, whether the land is sold or not, it will not be very high before being confiscatory. It is therefore suggested that a substantial annual land tax on the value of undeveloped land, primarily privately owned in urban areas, should be imposed and in addition, that increments in land value in urban areas should be taxed more heavily than profits in industry or other forms of productive economic activity.

138. The sale price or compensation to be paid upon public purchase should be closely related to the assessed value for tax purposes adjusted as necessary to allow for legitimate improvements made since assessment, taking into account inflation and currency depreciation where appropriate.

139. For the purpose of identifying and assessing land it is suggested that existing land registers, should be reviewed or new ones elaborated, and completed with appurtenant property maps. In the elaboration of property maps it is suggested that aerial photography, should be used in view of its speed and relatively moderate cost. The services of competent and qualified land evaluators should be used to assess land.

140. Land taxes or property taxes on real estate, based upon accurate land evaluation, seem particularly conducive to neutralizing some of the defects mentioned above, that have become evident in income and profit taxes in developing countries, and also to contributing to an increase in revenue.

Planning measures

141. When the use of urban land is not controlled, the usual result when urban centres grow by accretion is a disorderly pattern of mixed land use, congestion and uneconomic use of public facilities and utilities. Control of urban land use, including planning and the promulgation of effective regulations, is therefore imperative.

142. One essential tool for planning facilities and formulation and implementation of land-use and zoning regulations, is comprehensive regional planning together with realistic regional and/or master plans, showing areas for the distribution of expected population growth in suburbs or satellite towns with population density data for the suburbs, areas for expected industrial growth, areas for recreation in and around suburbs, transport routes and all the other elements of a functioning urban area. In the absence of such a tool, resources may be wasted by building the wrong facilities in the wrong places and by the unnecessarily high costs of utilities and other supporting facilities.

143. Once these regional and/or master plans have been approved new urban infrastructure should be limited to growth centres or expansion areas and included in the plan. Effective deterrents should be used to prevent urbanization encroaching upon areas designed to remain in agricultural use or for recreation, watersheds, and scenic areas. After the approval of land-use and zoning plans for the designated areas specifying the location of different districts with various maximum densities, maximum building plot ratios, maximum land coverage percentages, minimum open space ratios, and where appropriate, off-street parking or loading space requirements for vehicles, a timing sequence should be established and urban facilities and utilities provided for one area at a time with some areas designated as reserve or second stage development areas. In other words, urbanization should be encouraged in areas designated for priority development while discouraged or prevented entirely in reserve areas until the former areas are substantially completed.

144. All developers, public and private, should be required to conform with these regulations. It is of equal importance that adequate machinery for administration and enforcement of the controls should be set up.

145. Apart from determining the order and manner in which growth centres or expansion areas are to be developed, the extent to which the public sector will be involved in the construction process, particularly the preparation of sites for construction, has to be clarified. While the public sector generally will assume responsibility for the development of publicly owned sites designated for the construction of low-cost housing, its involvement in the preparation of sites for other income groups will depend upon its capacity and willingness to undertake this task.

146. The acquisition of land needed to house and service the increased urban population as well as those now homeless or living in inadequate quarters will require the purchase, primarily by public but also by private developers, of tracts of vacant land. The price paid should be based on the assessed value of the land as described above, or in the case such as an evaluation is lacking on the basis on the existing or future use of the land as set forth in the regional plan or the master plan. Alternatively, legislation might be considered to enforce the transfer of private land to the public authorities, when land has not been developed in accordance with the directives within a determined period after their issuance.

147. This acquisition may be accomplished by nationalization of all land or of all urban land or by selective public purchase of sufficiently large, vacant tracts or by effective and rigorous measures of land use control, zoning and taxation.

148. As increments in the value of land are brought about by population growth and urbanization and not by any effort of land owners, the acquisition policy should be directed not only towards the acquisition of the required land at appropriate prices but also towards an equitable distribution of land value increments, either by public purchase in advance of speculative price rises or, if profits are reaped by the owners by requiring that the profits be shared with the remainder of the population through general land taxation programmes, capital gains taxes and similar measures.

149. Public acquisition should be effected well in advance of the land being needed and should, whenever possible, cover as large vacant tracts as possible to be held until needed and then made available for development according to comprehensive regional plans and detailed master plans or town planning schemes. Portions of the land can later be sold or leased at a higher price than the purchase price so as to finance infrastructure development on the remaining land. Alternatively all the land purchased can be leased out until needed, or it can be reserved for the use of migrants to erect temporary transition shelters.

150. If the land is not available at a reasonable price it may be necessary to resort to compulsory purchase. Traditionally such purchase has been at market prices which already reflect speculative increases resulting from advance knowledge of public purchase programmes. An official acquisition act may define the market price as that excluding any increments occurring in the preceding seven years as a result of public action or public planning. Another approach involves disregarding of the market price in favour of the land's agricultural value or other non-urban value, or freezing all values as of a certain date in the past.

151. In order to reduce a country's immediate expenditure, it is suggested that only a fraction of the compensation be paid in cash in conjunction with the purchase and the remaining portion be invested in Government bonds or stocks, whose value should be geared to stated rises in cost-of-living or general land-price indices.

152. The land, once assembled and under public ownership, could be either leased or sold -free-hold- to public agencies, non-profit-making organizations, contractors or individuals at rents or prices reflecting the level of income of the families to be served or at prices appropriate to the use to be made of the land.

Decentralization measures

153. Since the objective of the land policy should be to expand the supply of moderately priced land limited economic resources should be used to purchase large plots of cheap land in advance of urbanization rather than on high-priced central property. When, however, the necessity of acquiring central land for a specific activity arise efforts should be made to work out exchanges of land or other solutions not requiring the payment of large amounts of cash. If funds are very limited, purchase may have to be limited to special zones designated for early construction, or the public right of pre-emption of sites slated for early development may have to be exercised.

154. In order therefore, to counteract the high land cost in central urban areas, the pressure of expected urban population growth should be decreased by a planned programme of decentralization designed to divert land demand away from congested urban centres. Regional and/or master plans for industrial growth can provide suitable sites for new industrial development in relation to existing suburban development centres or to future suburbs and satellite towns and development policy can encourage investment in such peripheral parts of the area rather than in its core.

FINANCIAL RESOURCES - PUBLIC DOMESTIC RESOURCES

155. This group includes the resources of the Government at all levels and of institutions substantially owned and operated by the Government or Government agencies operated in the public interest.

Direct Government programmes

156. In most developing countries, the Government constitutes the largest single source of finance for housing and related programmes for low- and middle-income groups. Resources are normally directed to the ultimate users through public agencies, either central, provincial or municipal with specific responsibility for housing and related programmes to be used either for direct construction of housing and related infrastructure or loaned to suitable individuals for those purposes.

157. Apart from the provision of housing and related infrastructure for the low-income group, generally considered a direct or indirect responsibility of the Government, the provision of relatively expensive housing and related infrastructure for civil servants is considered a governmental responsibility in some developing countries. The fact that this practice may distort values as well as seriously drain available funds away has caused problems in many developing countries.

158. The virtue of direct construction is that the type, quantity and location of dwellings can be controlled and that the ultimate cost to the consumer can be regulated to conform with Government policies and programmes. Direct Government action is often the only way housing can be provided for low-income groups. Direct Government construction and ownership, however, generally have some drawbacks such as heavy administrative costs and resource requirements and a tendency to set standards that do not always reflect economic conditions, etc.

159. Government action in housing and infrastructure programmes, to an ever increasing extent, has taken the form of lending to private groups and/or individuals who desire to construct their own dwellings often on concessionary terms. The principal advantages of this approach over direct construction programmes are less administrative overheads and more flexibility, especially with respect to standards.

160. The actual cost of producing and maintaining dwellings with related facilities and utilities will not necessarily be lower for a Government construction programme, but the possibilities of reducing overall costs such as profit margins and financing costs under most Government programmes are important.

161. For the discussion on building cost and of their various components see the paper entitled "The effects of building costs and other financial considerations" (E/CN.14/HUS 11).

Sources of funds

162. Beyond the normal capital sources for raising public funds such as personal and corporate income taxes, import and export taxes, licensing fees, operations of Government-owned boards and corporations, in the case of the central Government and property taxes, fees for municipal services and utilities, in the case of regional and local Governments and authorities, the following are also sources of funds:

- (i) Government bond issues;
- (ii) Publicly owned savings institutions;
- (iii) Compulsory savings etc.

Government bond issues

163. Government bond issues, the traditional method of obtaining funds for heavily capitalized programmes, undoubtedly constitutes an expedient means of raising additional funds for housing and infrastructure. In addition, special corporations may be authorized by the central, regional or local Governments to issue bonds directly with backing from the authorizing institution.

Publicly owned savings institutions

164. Publicly owned savings institutions such as postal savings, State savings banks and life insurance systems, established in many countries, equally constitute an expedient means of mobilizing small individual savings for use in housing and infrastructure programmes.

Compulsory savings, etc.

165. Compulsory savings and/or special taxes might also constitute an expedient means of raising additional funds for housing and infrastructure programmes. In addition, consideration may be given to the use of existing sources of funds, for example, social security and provident funds as well as State lotteries, which are ideally suited for long-term investment.

PRIVATE DOMESTIC RESOURCES

166. In many countries the bulk of housing and infrastructure construction is carried out under private auspices and financed largely with privately owned and controlled funds. Examples of the institutional framework by which these funds are collected and distributed are given below:-

- (i) Mortgage banks;
- (ii) Mutual savings banks;
- (iii) Commercial banks;
- (iv) Co-operative housing societies;
- (v) Private pension funds and insurance companies;
- (vi) Development banks or corporations;
- (vii) Trusts.

167. Other sources of financing, which should not be overlooked, are self-financing, i.e., personal savings used to finance all or part of the purchase of a dwelling with related utilities and suppliers' credit, i.e., the supply of building materials on an instalment payment basis.

Mortgage banks

168. Mortgage banks, the traditional institutions for raising funds for heavily capitalized programmes, are a most substantial source of funds for housing and infrastructure programmes.

Mutual savings banks

169. Mutual savings banks, although generally having a limited charter for lending operations, can play an important role in providing the short-term funds required by private contractors to pay for materials and labour during the construction period.

Commercial banks

170. Commercial banks, although generally dealing with commercial loan activities, might also engage in mortgage lending. As a rule, however, these banks will provide but a limited volume of funds of the type and on the terms required for housing and infrastructure financing.

Co-operative housing societies

171. Co-operative housing societies, although generally having limited means for raising funds can, however, play an important role in the construction of dwellings in connexion with "site-service schemes" and "aided self-help schemes".

Private pension funds and insurance companies

172. Private pension funds and insurance companies can play a significant role in providing finance, especially long-term finance, for housing and infrastructure programmes. This special form of savings, with low withdrawal possibilities and determined expenditures, is particularly suited to mortgage investment.

Private development banks or corporations

173. Private development banks or corporations with activities limited to investment development projects are a substantial source of capital for manufacturers of building materials and contracting firms.

Trusts

174. Funds in trusts, which have to be invested on a long-term basis, can equally play a significant role in providing long-term finance for housing and infrastructure programmes.

INTERNATIONAL SOURCES

175. Although in recent years international public sources, both multilateral and bilateral, have begun to play a relatively important role in the financing of housing and infrastructure, it might be questioned whether greater reliance ought to be placed on such proposals.

176. The prospects generally of securing funds from international public sources do not appear bright because of fluctuating international conditions coupled with

balance-of-payment difficulties. On the other hand, the prospects of obtaining loans from private international sources might seem brighter but such offers should be carefully scrutinized because the conditions of the loan might prove quite expensive.

177. The following are possible international sources of funds:

- (i) African Development Bank (ADB);
- (ii) United States Housing Guarantee Program;
- (iii) Commonwealth Development Corporation (CDC);
- (iv) Caisse centrale de coopération économique;
- (v) Société centrale pour l'équipement du Territoire;
- (vi) World Bank Group;
- (vii) United Nations.

African Development Bank (ADB)

178. The lending activities of the African Development Bank have generally been restricted to those viable projects which can bear conventional rates of interest. The reason is that the funds available to the Bank are taken from its ordinary capital resources. In view of the large volume of capital required and the long-term low-yield nature of investments in housing and infrastructure, the direct activities of the Bank in housing construction have been quite negligible. However the Bank has been able to finance projects which, although not directly related to specific housing projects, contribute to the development of housing estates. Those include mainly projects involving power, water and sewage extension systems.

United States Housing Guarantee Programme

179. The United States Housing Guarantee Program, operated through the United States Agency for International Development (USAID) has evolved continuously in the direction of a broader, more comprehensive policy of stimulating the formulation of over all national housing policies by developing countries. This new attitude could lead to better integration of capital and technical assistance and better solutions for problems of administrative capacity, shortage of housing for low-income groups, basic infrastructure and services needs and unemployment.

180. The programme makes long-term financing available to developing countries by offering a full guarantee of repayment of principal and interest to United States investors willing to make such long-term loans.

Commonwealth Development Corporation (CDC)

181. Commonwealth Development Corporation, through a number of housing financing corporations, has provided seed capital, construction finance and a variety of related technical and management services, packaged and tailored to suit particular circumstances and objectives. In Africa, Commonwealth Development Corporation assistance has taken the form of loans to housing authorities and corporations for operations that have included urban projects and low-cost rental accommodation in conjunction with the

technical and consultancy services of the Commonwealth Housing Corporation. The Commonwealth Development Corporation also provides finance for the development of management skills and the training of local personnel. It operates with funds almost entirely derived from the United Kingdom Exchequer.

Caisse centrale de coopération économique

182. The Caisse centrale de coopération économique provides assistance for the construction of low-cost housing and, since 1968, for urban infrastructure.

Société centrale pour l'équipement du Territoire

183. The Société centrale pour l'équipement du Territoire has been engaged in a number of surveys, feasibility studies, project planning and project preparation work, management training, urban planning and housing complexes.

World Bank Group

184. The World Bank Group, concentrating since its very beginning on basic infrastructure, has progressively widened its scope. Since 1972 the World Bank Group has adopted a programme providing loans for urban transport and site-service schemes.

United Nations

185. The unit in the United Nations most concerned with the field of housing and infrastructure is the Centre for Housing, Building and Planning. UNDP is the main source of funding for the Centre's activities, ranging from the recruitment of a single expert to advise a Government on such matters as housing policy and physical planning to that of a sizeable team of experts to assist in establishing housing and building institutions and programmes or in planning major regional and metropolitan areas.

186. As the mobilization of capital for housing and infrastructure to a large extent is traditionally the responsibility of private individuals, groups and corporate institutions, in many countries, it is suggested that Governments in developing countries should promote all feasible incentives conducive to an increased flow of savings and investment by providing the legal, administrative and institutional framework within which those who have an interest in this particular sector can operate at maximum volume and efficiency. It has to be recognized, however, that there are large areas where it is unrealistic to expect private institutions to operate but where the Government has to take the initiative.

187. The following incentives are suggested:

- (i) The establishment of a national environmental development bank through which public and private economic resources will be channelled to the housing sector and also to the agricultural and industrial sectors;
- (ii) The creation of an insurance system for individual savings deposits;
- (iii) The promotion of mortgage lending on the part of new and existing financial institutions;
- (iv) The encouragement of co-operative housing societies savings;

- (v) The promotion of specific incentives for general cost reductions such as:
 - (a) tax and levy reductions on land used for housing and related infrastructure;
 - (b) tax and levy reductions on local building materials;
 - (c) tax reduction for building materials and contracting firms engaged in housing and infrastructure;
- (vi) The promulgation of property taxes.

Insurance for individual savings

188. A system which provides insurance for individual savings deposits by guaranteeing the safety of the individual depositor is obviously attractive. The guarantor should be the Government itself through the national environmental development bank or possibly a separate corporation or institution set up for this purpose.

Mortgage lending

189. By definition, a mortgage is the nominal conveyance of property which actually acts as a lien or charge securing the payment of money.

190. The advantages offered by mortgage loans, where property becomes the security for a loan in connexion with the construction of a new dwelling or the improvement of an existing one are obvious. Mortgages appreciably reduce the down payments requested, thereby enhancing the ability of low-income persons with lesser savings, but with adequate current incomes to purchase houses. Thus, access to mortgages promotes both the housing industry and the mobilization of domestic resources. As, however, the mortgage instrument generally is unnecessarily complex and ownership difficult to establish and transfer, it is suggested that legislation should be enacted setting forth clear principles covering land titles and other certificates of ownership, related not only to free-hold but also to lease-hold land, control mechanisms and the form of the mortgage instrument itself. Ownership certificates and mortgages should be elaborated in accordance with the accepted legal customs in the particular country but at the same time it is vital to have a clear simple document which is readily understood and acceptable for marketing in any part of the country.

Co-operative housing societies' savings

191. It is suggested that co-operative organizations in general and co-operative housing societies in particular should be given every encouragement by the Government since this form of mutual effort has proved to be one of the most appealing forms of action in this field. Co-operative housing societies normally attempt to accumulate sufficient members' savings to make a down payment on a dwelling or a group of dwellings and take out a loan for the balance. The attractiveness of the system is that profit and overhead expenses can be minimized to the benefit of the members.

BUILDING MATERIALS INDUSTRIES

192. The general characteristics of the building materials industries for the continent as a whole can be summarized as follows:

- (i) General inadequacy of local production in the face of rapidly expanding demand;
- (ii) Unbalanced inter-regional pattern of production and consumption of key building materials;
- (iii) Almost total absence of industries producing sanitary and electrical equipment, sheet glass and hardware and, in general, paints, iron and steel products;
- (iv) Comparatively high cost of local production owing to the uneconomic scale of operations, the lack of technical and managerial skills and the use of inefficient or outdated production plants or under utilization of plants;
- (v) Heavy dependence on imports from outside;
- (vi) Limited scope of intra-African trade and negligible exports outside the continent;
- (vii) Lack of long-term programmes for the development of local production of building materials and components owing to the lack of long-term economic development plans in general and building, housing and infrastructure plans in particular.

193. The availability of natural resources generally is satisfactory as far as cement, lime, clay metallic ores and timber are concerned. As, however, the distribution of these natural resources is very uneven, inter-regional co-operation is needed to provide an adequate framework for compensating inequalities between countries and ensuring balanced development by encouraging a certain degrees of specialization in the different productive sectors.

194. The scarcity of economic fuel and power constitutes a most serious problem. Some of the building materials industries are great consumers of power and, although the hydro-electric power, oil and natural gas potential of the continent is very great, only a small part of schemes to exploit these resources has been realized. Another limiting factor is the relative smallness of domestic markets in a great number of African countries, a limitation which is further aggravated by inadequacies of the transport network. The area and more specifically the potential market that can be economically covered by a single plant is very often restricted to the coastal areas and urban conglomerations.

195. In order to alleviate these deficiencies as a first step, the technical installations of existing local building industries, should be improved or replaced by modern and advanced techniques, thereby increasing productivity, both qualitatively and quantitatively, and also making local building materials more competitive. In addition, it is suggested that feasible deposits of raw materials should be assessed, both quantitatively and qualitatively, by systematical geological surveys, particularly by remote sensing, completed by laboratory analyses.

196. The main problem, however, is to outline the way in which building materials industries should be developed, taking into account the economic and technical aspects of the problem. The arguments in favour of setting up new building materials industries within the framework of national economic development are numerous and well founded since the demand for building materials and components will increase in the years to come. The production of building materials and components is closely related to natural resources, most of which are bulky and relatively cheap. Because both raw and semi-finished building materials are bulky, transport considerations are paramount. A further justification for local production of building materials derives from the present high prices of imported materials, which are partly due to sheer distance and partly to inadequate transport and handling facilities.

197. Before any definite decisions are taken concerning the establishment of new building materials industries requiring large investments, detailed feasibility studies should be undertaken and on the basis thereof the prospects for competitive production should be judged. These feasibility studies should comprise a detailed examination of such questions as:

- (i) Supply of raw materials, fuel and power;
- (ii) Supply of technical personnel and skilled labour;
- (iii) Knowledge of technological processes suitable to African needs and problems;
- (iv) Access to satisfactory communications from sources of raw materials to the plant and from the plant to the market;
- (v) Potential markets;
- (vi) Amount of investment;
- (vii) Annual output;
- (viii) Production cost.

198. Considering the high costs of investments as well as of feasibility studies, as an alternative to national building materials industries, other possibilities should be investigated, such as co-operation between a foreign building material company and a local company, either in the form of an "adoption scheme", valid for a determined period of time, or a joint venture.

199. The following specific programmes of action should also be undertaken:

- (i) Research into the improvement of existing local materials;
- (ii) Research into the development of new local materials;
- (iii) Research into the development of manufacturing processes;
- (iv) Research into the development of standardization and modular co-ordination on an inter-regional basis;
- (v) Training at all levels.

200. In view of the large resources required in terms of expenditure and expertise for the development of the building material industries the research should be minimized by carrying out the work on an inter-regional basis and utilizing to the maximum extent experience already available, thus eliminating unnecessary and costly duplication.

BUILDING ELEMENTS

201. This description has been limited to elucidating the functional requirements of: foundations, external walls, internal walls, roofs, floors, stairs and doors and windows; and to describing how these requirements can be complied with, primarily as regards building practices and methods of construction suitable for African countries, and, in addition, to giving brief account of the manufacturing processes for some of these building materials.

202. For a more detailed description of material requirements such as standards, handling, storage, sampling, testing, etc., the methods of construction, workmanship, tolerances, etc., it is envisaged that a general specification, with adequate norms and codes of practice for certain works, should be elaborated. The preparation of such a document should preferably be undertaken or at least conducted by an appropriate organization within the United Nations family, such as ECA, so as to ensure continuity not only in the preparation stage but in the dissemination and revision of the general specification and relevant norms and codes of practice.

203. Furthermore, it is suggested that, in order to facilitate a qualitative differentiation of the structural elements of a building in line with its ultimate function, the various works should be divided into at least two classes, where the one class refers to buildings, for which strict control is exercised not only over the works on site but also at the place of manufacture and where the other class refers to such buildings for which less strict control is accepted. It is equally envisaged that the detailed conditions applying to the various classes should be set forth in a building code, the elaboration of which preferably would follow the same lines as the general specification and the relevant norms and codes of practice.

204. The building code should also contain data concerning minimum live loads for slabs and roofs; gradings of acoustic insulation for external and internal walls, doors and windows (air-borne noise) and slabs (air-borne and impact noise, gradings of fire resistance for external and internal walls, slabs, doors and windows, minimum heat transmittance co-efficients for external walls, slabs on grade, slabs above unheated localities and roof slabs. These data should cover various types of localities such as flats, hospitals, libraries, offices, schools, etc., as well as the individual materials inclusive of permissible stresses, etc.

205. In this connexion, it might be appropriate to reaffirm the need to keep the total building cost, i.e., not only the construction cost but also the annual cost i.e., inclusive of the cost for maintenance, repair, heating and/or cooling, down to a minimum in view of the limited economic resources available for building in general and for housing in particular. It is imperative that the building costs for alternative building elements and components in general and for alternative building materials in particular should be scrutinized with a view to economizing where possible and that, on the basis of these results, the use of building elements and components suitable for the country in question should be strongly recommended. The dimensioning of the various building elements/components should not be based upon

arbitrary rule of thumb methods but on accepted design conditions as established in internationally recognized standards and norms, taking into account the most economic way of design.

206. In order to facilitate such an appraisal the necessary cost data, comprising not only the cost for the various building materials and building elements or components, broken down into material, labour and overheads including plants, equipment, tools, sundries and wastes, but also the cost for compound building elements, should be elaborated and kept up-to-date. Furthermore, the manufacture of suitable building elements, and components should be adapted to dimensional and modular designs. Feasibility studies should be undertaken to ascertain whether modern-industrialized-construction methods, using to an ever increasing extent prefabricated building elements and components, may contribute to a lowering of the building cost.

207. The contracting industry, covering both building proper and civil engineering works, together with the building materials industry, plays a significant role in the economy of any country as its share in investments in fixed assets is considerable and in most cases amounts to more than half of the country's capital investment. Expressed as a percentage of the GNP the amount allocated to the contracting and building materials industries is often estimated at about 12 per cent. This high share not only has a direct bearing on the cost of all the goods and services a country produces, consumes or exports, but also determines the value, length of life and expenditure of those fixed assets. The contracting industry, by building more efficiently and faster, enables a country to move faster towards the implementation of its national economic and social development goals.

Large building and public works enterprises

208. This category includes a varying but often limited number of building and public works enterprises of a national - but often run by expatriates - or international character mainly concerned with important public works. These enterprises usually possess their own design offices, either abroad or locally, high calibre supervisory and executive staff and heavy modern equipment. In most cases they work under contract, awarded after tendering. Quality is usually good, but costs tend to be high because of heavy overheads, high salaries and allowances for expatriate personnel and short-term amortization of plants and equipment.

Small- and medium-size building enterprises

209. This category includes a large number of small- and medium-size enterprises, mainly concerned with housing for high- and middle-income groups, small public buildings, etc. These enterprises usually suffer from shortage of competent supervisory and executive staff, construction equipment and working capital. Owing to the shortage of qualified technical staff the design of dwellings is normally poor, both functionally and technically, and the quality of erection usually inadequate. Furthermore, the sporadic nature of their activities often makes it impossible to rationalize or standardize manufactured products and working methods.

Small artisan-type building enterprises

210. This category includes a wide range of small artisan-type enterprises, mainly concerned with housing for low-income groups. The activity of these enterprises is usually outside all technical control and the dwellings are generally realized at a cost out of proportion to the most economic dwellings built by public initiative or private enterprises, owing to the use of cheap local building materials, low rates for labour, minimal equipment and tools, no overheads, etc.

Measures to strengthen the position of smaller building enterprises

211. Although these three categories of enterprises have an important contribution to make to the implementation of construction programmes in general and to housing programmes in particular, the contribution made by the small- and medium-size enterprises and the small artisan-type enterprises depends on the changes they undergo.

212. In order to overcome the present shortcomings of the latter two categories the following measures sponsored by the Government through regional and local public agencies should be undertaken:

- (i) Implementation of long-term building and housing programmes;
- (ii) Awarding contracts, where appropriate, to local rather than foreign enterprises;
- (iii) Training courses for local contractors, supervisors and labourers;
- (iv) Creation of equipment pools for leasing heavy equipment under favourable conditions;
- (v) Economic facilities for the purchase of small equipment and the improvement of site organization;
- (vi) Promotion of co-operation between foreign (international) contracting firms and local contracting firms, either on the basis of an 'adoption scheme' valid for an unlimited number of projects during a determined period of time, or on the basis of joint ventures or of sub-contracts for specific projects.

213. In this connexion, for the realization of low-cost housing schemes, the self-help/self-labour idea, especially on a relatively large scale should be encouraged and the Government should assist in providing building materials and/or professional services through regional and local public agencies.

CONTRACTING

General

214. In view of the nature of housing, building and civil engineering work and the conditions under which the work is executed, the following principal contracting forms should be borne in mind:

- (i) Own regie;
- (ii) Lump sum contract;
- (iii) Item rate contract - unit price contract;
- (iv) Percentage rate contract;
- (v) Net cost plus percentage fee contract - cost-plus contract.

215. A combination of these principal contracting forms can occur. Sometimes it might thus be advantageous for the employer - the client - to execute some parts of the work under the own regie system, while other parts are executed by lump sum contract, item rate contract, percentage rate contract and/or net cost plus percentage fee contract, the latter form applying primarily to those parts which are difficult to price.

216. The question of which form is the most favourable from the technical and economic point of view can be decided only after thorough examination of every particular case.

217. The own regie system means that the employer - the client - has his own building organization for this purpose which can be kept continuously busy during a relatively long period of time.

218. The own regie system can be adopted by public as well as by private enterprises. In developed countries it is quite common that private enterprises build dwellings under this system in addition to contractual works. The dwellings are either sold to prospective purchasers or leased to prospective tenants and, in the latter case, are also administered by the enterprise.

219. In addition, unless the work being executed by net cost plus percentage fee contract, the own regie system is often adopted when:

- (i) The extent of the work and thus the cost can not be calculated in advance;
 - (ii) Construction methods can not be established prior to the execution of the work;
 - (iii) Owing to its urgent nature, the work has to be initiated prior to the completion of the preliminary investigations and tender documents;
 - (iv) The work has to be executed without interfering with the operations of the existing plant.
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220. Owing, however, to the general lack of qualified technical personnel, the advisability of public enterprises adopting this system at present to any large extent is, however, questionable.

Management against management fee

221. When an employer - a client - does not possess qualified personnel to manage own regie work but nevertheless considers this form advantageous, he can assign the management to an individual or a firm. The employer is then considered as the employer not only as regards the management but also as regards the labour force and all orders, materials, etc., will be effected in the name of the employer.

222. The management fee can be fixed as a composite sum for the entire work, as a certain percentage of the building cost or as a determined remuneration per hour, day, week or month for the personnel.

Self-help/self-labour

223. Self-help or self-labour system, primarily for low-cost housing schemes, implies that the family, either individually or collectively, will contribute all or part of the labour content, while economic assistance for the supply of building material and/or professional assistance for the execution will be provided through regional or local public agencies.

224. In view of the advantages of the self-help or self-labour system this form should be encouraged especially for low-cost housing schemes. However, before adopting this system widely, it is suggested, that a limited number of pilot-projects under the guidance of and with the support of the authority concerned should be initiated so as to determine the suitability of the system to the country in question.

Lump sum contract

225. Lump sum contracts are awarded in most countries in all fields of housing, building and civil engineering and offer the following advantages:

- (i) The employer will have no need to set up his own building organization for the execution of the work and merely has to employ, on a permanent or temporary basis, administrative and supervisory personnel for a particular project;
- (ii) Before the commencement of the work the employer receives a fixed figure for the total building cost, which should not be exceeded, provided that the tender documents and preliminary investigations are thoroughly elaborated and remain unaltered during the progress of work; in most cases, the work will be completed within the time set forth in the tender documents;
- (iii) The employer will have no need to purchase expensive equipment which requires a long amortizement period to be economically utilized;

- (iv) The employer will, by awarding the contract to a reliable contractor, have the work executed under experienced and competent management and with skilled labour and appropriate equipment;
- (v) The employer will escape all inconveniences as a consequence of time-consuming negotiations with official authorities and/or private organizations.

Type of contracts

226. The lump sum contract may be a consolidated or a divided contract. With consolidated contracts one general contractor assumes full responsibility for the execution of all the contract works. The general contractor can, in his turn, entrust to sub-contractors the execution of certain parts of the work. With divided contracts the execution of the work is commissioned to several specialized contractors. This latter form is often found expedient in housing, where specialist works such as water, sanitary, heating, electric installations and possibly also painting can be assigned to the relevant specialized firms while the building work proper will be assigned to a general contractor.

227. An alternative to the lump sum contract is the bills of quantities contract which is especially suitable for works when the tender documents are not complete at the tendering stage or when considerable alterations are expected during the progress of work. The contractor assumes responsibility for the unit prices applied but not for quantities which have to be readmeasured as the work proceeds. The main drawback of this alternative, making it particularly cumbersome to handle, is the need of quantity surveyers for readmeasurement.

BUILDING MANAGEMENT

General

228. Building management in principle covers the various tasks incumbent upon the employer - the client - in connexion with the realization of a building project.

229. The employer himself can naturally be in charge of the building management, but as to large enterprises there is generally one person employed or temporarily recruited by the employer acting as the employer's representative. This task can also be entrusted to several persons or assigned to a consulting firm, selected in accordance with the guidelines given above.

Functions

230. Irrespective of the organizational form adopted, building management functions should reflect the requirements imposed on the employer by the building project. These functions will comprise the following:

- (i) Scope;
- (ii) Function;
- (iii) Location;
- (iv) Size of plot;

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|------------------------------------|---|
| (v) Extent and need of localities; | (x) Flexibility; |
| (vi) Possibilities of extension; | (xi) Technical conditions; |
| (vii) Neighbourhood conditions; | (xii) Economical planning; |
| (viii) Communications; | (xiii) Organization; |
| (ix) Type of construction; | (xiv) Administration during construction. |

Organization

231. Some of the functions and tasks outlined above will naturally be discharged by the employer himself. However, it is of the greatest importance that the organizational form should, from the very beginning, be established in such a way that all necessary functions will be discharged. The proper distribution of the tasks will depend on the actual conditions and will vary depending on whether the work is to be executed under the own regime system or by contract. Furthermore, the organizational form will be influenced by whether the employer is a physical or judicial person and by the extent to which his power has been delegated to a board, committee, consulting firm, etc.

232. In an extreme case, building management will be entrusted to a single person who, on behalf of the employer, will be responsible for the functions to be performed by the employer, from the beginning of the project until its completion. He will be required to participate in decisions or take decisions about:

- (i) Economic planning, including questions of finance and profitability, evaluations and costs estimates;
- (ii) Selection and distribution of work among consulting firms;
- (iii) Negotiations with authorities;
- (iv) Tendering and contracting;
- (v) Organization and time-table charts;
- (vi) Co-ordination of work of all parties involved;
- (vii) Calculation of rents, if appropriate.

Responsibility

233. It is of the greatest importance that the duties, powers and responsibilities of building management should be well defined from the very beginning. In general, the person responsible for building management within his specified field should have as extensive powers as possible to represent the employer or else co-operation with other parties may be difficult, urgent matters delayed, etc.

Type of organization

234. In selecting the most expedient form of organization the following factors should be given due consideration:

- (i) The organization should lead to the greatest overall economy, i.e. contribute to the most favourable conditions for the realization of the project;
- (ii) Building management should be adapted to the size and kind of the project;
- (iii) Building management should as far as possible not restrict the contractor's working programme and direct management, once established by the employer and the contractor;
- (iv) The instructions to the contractor should be conveyed in a clear and unambiguous way;
- (v) Building management should be organized in such a way that the accepted distribution of responsibility between the employer and contractor and between the employer and consultants will not be affected;
- (vi) The organization of building management should be adapted to that of the employer and will thus depend on whether the employer represents an individual or public enterprise, whether he is represented directly or by provisional or permanent committees or institutions and whether the latter have expertise within the building field or not;
- (vii) Building management should be independent of contractors, suppliers and preferably also from consultants engaged in the actual project;
- (viii) Building management should be exercised in a positive spirit, aimed at preventing faults, errors and delays and contributing to economic execution of the work;
- (ix) The activities of building management should include regular meetings, the preparation of regular reports, evaluations, etc;
- (x) If building management is to be entrusted to a single person, it is important that this person should possess competence and experience in all the fields covered by his duties.

HOUSING MANAGEMENT

General

235. Housing management primarily refers to the various tasks required in the upkeep of new housing stock and in the maintenance and upgrading of existing housing stock, irrespective of the form of tenure, which are undertaken by managing agencies through specialists known as housing managers.

236. One of the tasks of the housing manager as regards public or publicly aided housing is to allocate dwellings to eligible families. The family should be required to maintain its unit in good condition, to pay punctually any initial down-payment costs and the monthly fees covering the amortization of capital and interest for dwellings being sold under long-term repayment plans.

237. In the event that plots of lands are allocated to eligible families the family should, within a given period of time, improve the allocated plot. It is of importance, however, that the development requirements under the allocation should not be so severe as to be beyond the capacity of the recipient family.

238. Co-operative tenure is the best way of handling all arising problems relating to maintenance. Each owner or occupant then has to pay monthly dues high enough to cover such items as collection of solid wastes, repairs of external building parts and public equipment, essential repainting, caulking, roofing, etc. Internal maintenance of the dwellings is usually the responsibility of the individual owner or occupier.

239. One serious management problem is delinquency in making monthly payments on the housing loan or in paying monthly rent. In order to prevent or at least reduce the occurrence of such a situation, rental purchase schemes, whereby failure to keep up the payments will result in loss of the down payment as well as the right of ultimate ownership should be adopted. Under co-operative ownership, however, there is generally a greater possibility of applying social pressure particularly as such failure to meet the joint payments will add to the burden of the remaining members.

240. The housing manager should also undertake or assist in the preparation of programmes aimed at preventing damage to and destruction of the public parts of the property and otherwise promoting educational and recreational activities in general.

241. Furthermore, the housing manager should be responsible for assisting residents and particularly those from rural areas who face difficult problems in adjusting to urban living conditions, with employment, school, health, transportation or other problems.

242. As neglect of proper housing management results in a rapid deterioration of the social and physical conditions in new housing stock as well as in a continuing deterioration of old housing stock, housing management should receive due attention, inter alia, through the training of personnel to act as housing administrators and assistants.

REORGANIZATION OF GOVERNMENT MACHINERY FOR HOUSING AND INFRASTRUCTURE

243. In order to rationalize Government machinery, which owing to the division of responsibilities is characterized in most African countries by ministerial or governmental compromise and hindrance to co-ordinated decision-making and by ad hoc development schemes and the lack of adequate consultation and physical planning, it is suggested that measures should be adopted to re-organize Government machinery. A Ministry of Environmental Development should be established which would be in charge of environmental development in general and the allocation of financial resources through the following two institutions:

- (i) A National Environmental Development Department dealing with physical planning in general as well as with housing, infrastructure and general environmental matters and possibly also transport;
- (ii) A National Environmental Development Bank dealing with development projects in general, comprising both the public and private sectors, as well as with financial dealings and contractual operations on an international basis.

244. In most development plans in African countries explicit and implicit responsibility for housing and infrastructure as regards urban as well as rural areas is widely diversified. This diversification applies not only to policy formulation and programme implementation but extends also to the actual allocation of financial resources through both the recurrent budget and the development budget as they exist in most African countries. Allocation on paper of financial resources to ministries seems to increase this diversification. The problem has been further aggravated by the creation of "self-accounting" or "non-accounting" ministries, contributing to still more complex and bureaucratic machinery with duplication throughout.

245. Furthermore, the present system operated within and between ministries and departments gives the Public Works Ministry or Department undue importance, since it generally is the only public agency which can undertake construction, which often results in a delay in the execution of construction programmes.

246. Although a Government reorganization might give rise to objections on the part of officials who have become inured to the present system and particularly those in the Public Works Ministry or Department, nevertheless, it is expected that advantages such as a decrease in the size and expenditure of the ministries concerned and more time and opportunity for policy formulation, overall supervision of the activities of the relevant agencies, etc., should far outweigh any criticism.

Organization plan

247. In order to ensure the formulation of national policies and the implementation of national programmes for housing and related infrastructure with realistic goals, targets and priorities, the National Environmental Development Department as well as the National Environmental Development Bank should be given the full responsibility and authority and the necessary resources to undertake the aforesaid tasks.

248. The National Environmental Development Department should be responsible, inter alia, for the acquisition and development of land, environmental research and development, building codes, regulations and general conditions, co-ordinating financing plans and programmes of the national Government with those of regional and local authorities and with private organizations operating in housing and related fields. More specific tasks, such as the elaboration of regional plans, master plans and town planning schemes, drawings, specifications and bills of quantities for housing and infrastructure projects, supervision and construction, of housing and infrastructure projects should preferably be undertaken by appropriate sections within the National Environmental Development Department.

249. The National Environmental Development Bank, under the chairmanship of the Minister of Environmental Development above should be responsible for the financing of real estate development corporations, either wholly governmental, semi-governmental, or wholly private corporations, the promotion of and participation in the establishment of savings and loan associations and the promotion of local industries and improved construction methods.

250. As regards financial dealings and contractual operations, it is clear that there should be consultations between the Bank and the Ministries concerned but within overall Government policies, the Bank should be responsible for those operations.

251. Subsidies should fall within the Bank's responsibilities. Furthermore, the Bank should be in a position to assist authorities in the urban areas in the provision of housing for the low-income groups, primarily by using such subsidies, and to encourage the authorities in rural areas to improve rural housing and assist in establishment of co-operative housing societies, site-service-schemes, roof-loans schemes, etc. The Bank should also make arrangements to operate all types of insurance schemes for development projects.

252. In order to ensure that the goals and targets set forth in the national development programmes and plans are attained, it is suggested that the National Environmental Development Department should co-operate closely with the National Environmental Development Bank in all matters of common interest.

253. Considering the severe lack of trained personnel in all African countries since the establishment of the National Environmental Development Department and the National Environmental Development Bank will require considerable time and administrative and technical resources, efforts should be made to reinforce existing institutions which are competent to undertake the envisaged tasks and gradually to develop the Department and the Bank as well as all the other agencies required.

National Environmental Development Department

254. The following basic organizational framework is suggested:

- (i) An administrative section;
- (ii) A physical planning section;
- (iii) A real estate section;

- (iv) An environmental research and development section;
- (v) A legal section;
- (vi) A technical section, comprising town planning, architecture and engineering;
- (vii) Regional and local sections;
- (viii) A construction section.

255. The management should consist of a board of directors, composed of the head of the Department, possibly assisted by one or more of the directors of the various sections, and of representatives from one or more of the following Government departments: agriculture, communications, economic planning, education, finance, health, social affairs and transport; and the head of the National Environmental Development Bank.

Administrative section

256. The administrative section, under the direction of a Managing Director, should be responsible for the preparation of proposals for the organization of the National Environmental Development Department and of other required regional and local public agencies, with related staff requirements and qualifications, and for the formulation of specific details of national policies, programmes and plans for housing and related infrastructure. All proposals should be submitted to the board of directors for approval. Furthermore, the administrative section should be in charge of the dissemination of information to the public in general and the building trade in particular about Government housing and related infrastructure policies and programmes. The administrative section should therefore have at its disposal the following units or expertise:

- (i) A policy-making unit for the formulation of specific details of national policies, programmes and plans and especially short-, medium- and long-term goals;
- (ii) A statistical unit for the compilation and evaluation of basic data for determining such goals;
- (iii) An advisory unit to assist the building materials and contracting industries;
- (iv) An information unit operating in close co-operation with the information unit of the National Environmental Development Bank for the dissemination of information to the public in general and the building trade in particular.

Physical planning section

257. The physical planning section, under the direction of a Chief Physical Planner, should be responsible for the study and preparation of physical plans at the national and regional levels.

258. In view of the interrelationship between all aspects of development, co-operation should be established with other experts such as economists, geographers, sociologists, engineers, etc., from the very outset to the evaluation of results.

Real estate section

259. The real estate section, under the direction of a Real Estate Manager, should, in co-operation with the real estate section of the National Environmental Development Bank, be responsible for the control of urban land use through planning and/or land taxes and the acquisition and development of urban land.

Environmental research and development section

260. The environmental research and development section, under the direction of a Chief Engineer, should be responsible for building and road research with emphasis on the development and improvement of local building materials, material testing, structural and environmental design, geotechnics, economics of building operations, urban/rural planning, the compilation and dissemination of information required for the improvement of housing and infrastructure and maintaining active co-operation with interregional research stations so as to avoid any unnecessary duplication.

261. Furthermore, the environmental research and development section should be responsible for the execution of pilot projects serving primarily as a full scale test of improved or new local building materials and of working methods and for the evaluation of the results so attained. It should also maintain active co-operation with the real estate section in order to assist in research on land use and related control measures and organize various types of training courses.

262. The appropriate sectors of the construction industry, in particular, should be kept informed of the results of the environmental research and development section by means of regular news magazines or other publications. Lectures, educational courses, and exhibitions should be used to bring the research findings to the attention of potential users, and an advisory service should ensure that all the expertise in the section is available to those seeking advice.

Legal section

263. The legal section, under the direction of a Chief Lawyer specializing in building legislation, should be responsible for advising on all legal aspects of the formulation of national policies, programmes and plans, for the preparation of general conditions and for assistance in the elaboration of building codes and regulations, tender documents, etc. It should assist the various sections of the National Environmental Development Department in all legal matters.

264. The general conditions should, wherever possible, not overburden the contractor so as to avoid an increase in building costs. The general conditions should further be presented in a clear and unambiguous way in a language understood also by non-technical people, so as to eliminate unnecessary misunderstandings and/or differences.

Technical section

265. The technical section should comprise three separate units or sub-sections: the town planning unit, the architectural unit, and the engineering unit.

266. The town planning unit, under the direction of a Chief Town Planner, should be responsible for the study and preparation of master plans and detailed town planning schemes. In order to ensure that the town planning proceeds in an organized, economically efficient and socially desirable manner legislation should be enacted to provide legally binding statutory town planning schemes with codes of ordinances governing the allocation of land to various categories of activities such as residential, industrial, commercial, institutional, etc., and regulations governing building densities, off-street parking and ratios of open spaces. It might in this connexion be worthwhile to underline the importance of elaborating master plans and town planning schemes which meet not only the economic but also the social considerations, contribute to the harmonious development of a community and ensure an optimum distribution of activities and of human settlements.

267. The architectural unit, under the direction of a Chief Architect, should be responsible for the study of standard types of dwellings and of general public facilities, particularly for pilot projects, and for the preparation and dissemination of standardized architectural drawings for these standard types, for the revision or elaboration of building codes and regulations in co-operation with the legal section and for the preparation of related specifications. This section should also provide technical assistance to individuals and/or corporations whenever possible.

268. Building codes and regulations should comply with the requirements of economic planning and thus eliminate costly construction and outmoded ideas. Architectural drawings and specifications should be elaborated with due regard to the use of improved or new local building materials and to the adoption of improved working methods. The architectural drawings and specifications should be understandable to non-technical people, thereby eliminating unnecessary misunderstandings and/or differences.

269. The engineering unit, under the direction of a Chief Engineer, or if the unit is to be divided into separate subunits for civil, structural, electrical, and mechanical engineering, one Chief Engineer for each subunit, should be responsible for the study of standard types of dwellings and of general facilities and utilities and for the preparation and dissemination of standardized structural, electrical and mechanical drawings for these types, for the preparation of related specifications and bills of quantities, for the evaluation of tenders and for supervision of construction. This section should also provide technical assistance to individuals and/or corporations whenever possible.

270. The structural, electrical and mechanical drawings and the specifications and bills of quantities should be elaborated with due regard to the use of improved or new local building materials and to the adoption of improved working methods. The structural, electrical and mechanical drawings and specifications and bills of quantities should be understandable to non-technical people, thereby eliminating unnecessary misunderstandings and/or differences.

Regional and sections

271 Regional and local sections, under the direction of Regional and Local Officers, should be responsible for the preparation of simpler drawings for dwellings and public facilities and utilities, the dissemination of standard

drawings, specifications and bills of quantities for dwellings and public facilities and utilities as prepared by the technical section, for the evaluation of tenders and for supervision of construction. These sections should also provide technical assistance to individuals and/or corporations whenever possible.

Construction section

272. The construction section, under the direction of a Managing Director, should be responsible for the construction of public buildings, low-cost housing schemes, infrastructural works, when such undertakings are profitable or necessary owing to the lack of competition within the private contracting industry.

NATIONAL ENVIRONMENTAL DEVELOPMENT BANK

273. The following basic organizational framework is suggested: an administrative section; a financial section; a real estate section; a legal section; regional and local sections.

274. Management proper should be exercised by a board of directors, composed of the Minister of Environmental Development as regards all dealings at governmental levels, the head of the Bank, possibly assisted by one or several of the directors of its various sections, one or several of the following governmental departments; agriculture, communications, economic planning, education, finance, health, social affairs and transport and of the head of National Environmental Development Department. The detailed organizational framework should generally follow the pattern of a functioning bank with approximately the size and activities as the Bank.

Administrative section

275. The administrative section, under the direction of a Managing Director, should be responsible for the preparation of proposals relating to the organization of the National Environmental Development Bank and the required regional and local public agencies with related staff requirements and qualifications and for the formulation of specific details of national financial policies, programmes and plans for housing and related infrastructure. All proposals should be submitted to the board of directors for approval.

276. It is suggested that the administrative section should have at its disposal the following units and/or expertise:

- (i) A policy-making unit for formulation of specific details of national financial policies, programmes and plans and especially short-, medium- and long-term goals;
- (ii) An auditing unit;
- (iii) An advisory unit to assist corporations and individuals with loans for housing projects in generals and particularly low-cost housing projects;

- (iv) An advisory unit to assist industries with loans for development in general and particularly the building materials and contracting industries;
- (v) An information unit operating in close co-operation with the information unit of the National Environmental Development Department for the dissemination of information to the public in general and to the building trade in particular.

Financial section

277. The financial section, under the direction of a Financial Manager, should be responsible for channelling all financial resources for physical development, both public and private, to the various sectors and to the housing and related infrastructure sector in particular. The financial section should further be responsible for all financial dealings and contractual operations on an international basis.

278. It is suggested that the financial section should have at its disposal the following units or expertise:

- (i) A unit for building materials and contracting industries;
- (ii) A unit for contractual building and housing projects;
- (iii) A unit for corporative housing projects;
- (iv) A unit for self-help housing projects;
- (v) A unit for private housing projects.

Real estate section

279. The real estate section, under the direction of a Real Estate Manager, should, in co-operation with the real estate section of the National Environmental Development Department, be responsible, for land use and related control measures.

Legal section

280. The legal section, under the direction of a Chief Lawyer specializing in national as well as foreign financial legislation, should be responsible for advising on all legal aspects of the formulation of financial policies, programmes and plans, for the preparation of legal conditions in general and for legal assistance in international financial dealings.

Regional and local sections

281. Regional and local sections, under the direction of Regional and Local Officers, should provide assistance in all financial matters to regional and local authorities, corporations and individuals.

TRAINING

General

232. Immediate action should be taken to remedy the severe lack of trained personnel in general and particularly in the housing and infrastructure sector in most African countries through the promotion and establishment of training programmes, with the assistance of expertise provided by United Nations and/or by bilateral or multilateral donors. Existing universities, institutes and polytechnics may be used for full time and part time students and, wherever appropriate, correspondence courses supplemented by radio and television may be considered. Advantage should also be taken of fellowship offers, whereby personnel could be trained in overseas or neighbouring countries. However, fellowships should be granted solely to personnel having at least two years experience in their particular field in their home country and on the condition that the personnel return to their home country after completing the fellowships and perform public service work.

233. Furthermore, it is suggested that schools of public administration and management, economics, architecture, engineering, etc., should be set up, either locally or, wherever realistic, on an interregional basis so as to train a substantial cadre of indigenous professional personnel corresponding to the specific needs of the actual country or countries as soon as possible. It is however important not only that schools as well as their specific curriculae should be adapted to the national and interregional needs, but also that admission to these schools should be subject to specific regulations based on those needs.

234. Every effort should be made to promote the training of semi-skilled and skilled workers and to expand the labour forces for self-help and more sophisticated housing construction. Emphasis should also be given to training programmes enabling unskilled, unemployed or under-employed manpower to participate in simple low-cost housing schemes. In the short run, recruitment and training of middle-aged adults may be even more urgent than recruitment of young workers through apprenticeship in order to meet the special need for skilled labour. To this end, vocational training and retraining should be organized on the job or in vocational training centres for adult workers who have no occupational qualifications. Vocational improvement centres may also be set up with the aim of encouraging access to better jobs for workers with basic training.

National Environmental Development Department

235. The following specific training programmes should be initiated for the National Environmental Development Department:

- Training courses and/or training as counterparts, under the guidance of experts, for technical personnel with emphasis laid on managerial, technical and cost-estimating questions, varying in accordance with the specialization and competence of the trainees;

National Environmental Development Bank

286. The following specific training programmes should be initiated for the National Environmental Development Bank:

- Training courses and/or training as counterparts, under the guidance of experts, for administrative and economic/financial personnel with emphasis on managerial, economic and financial questions varying in accordance with the specialization and competence of trainees.

Contracting industry

287. Specific training programmes as outlined below should be initiated for the following categories of workers in the contracting industry: local contractors; supervisory staff; and skilled and semi-skilled labour.

Local contractors

288. Training courses for local contractors with emphasis on managerial, technical and cost-analyzing questions would cover work and site planning including the use of networks - for instance, the CPM (critical path method) system - work organization, financial management, cost analyses, working methods and techniques, building materials, regulations, specifications and general conditions and safety precautions to site.

289. In order to ensure the success of training courses for contractors in a specific country or for contractors in a specific region, the following considerations should be taken into account:

- (i) Invitations should be issued to participants well ahead of the commencement of the training course;
- (ii) Comprehensive questionnaires should be prepared and distributed well ahead of the commencement of the training course and after completion submitted well ahead of the stated deadline together with any private suggestions;
- (iii) A provisional directory for the training course should be prepared and distributed containing, inter alia:
 - (a) Detailed programme for the course;
 - (b) Information about participating agencies, if any;
 - (c) Information about participants (name, activity, postal address);
 - (d) Summary of the aforementioned questionnaires, if any;
 - (e) Copies of lectures, either in complete form or synopses;
 - (f) Copies of any other supporting documentation and/or references to other available documentation;
- (iv) The preparatory work should be checked well ahead of the commencement of the course;

- (v) The course should be divided into lectures accompanied, wherever possible, by films, slides or other illustrations, group work, visits to construction sites, building materials industries, etc. time should be used as effectively as possible and evenings should be used for group work and discussions;
- (vi) Participants should be divided into a number of working groups;
- (vii) Decisions should be taken about subsequent follow-up courses or actions.

290. In addition, it is suggested that the use of local building materials should be encouraged and that due care should be exercised in dealing with matters relating to the adoption of improved working methods and techniques and the use of improved local building materials and new equipment.

Supervisory staff

291. Training courses and/or training as counterparts, under the guidance of qualified and competent supervisors, for supervisory personnel with emphasis on technical questions should be designed to acquaint the supervisory staff with the adoption of improved and new working methods and techniques and with the use of improved local building materials.

292. In this connexion it might be appropriate to stress the importance of exercising supervision in a positive spirit, i.e. preventing faults, errors and delays in the execution of work and achieving an economic work of the best possible standard rather than maintaining the common, traditional approach, where the occurrence of faults and errors is merely noted or reported.

Skilled and semi-skilled labour

293. Training courses, either complementary to or instead of vocational training, for skilled and/or semi-skilled labour with emphasis on practical matters should be aimed at acquainting the skilled or semi-skilled labourer with the adoption of improved or new technical working methods and techniques and with the use of new equipment, tools, building materials, etc.

Building materials industry

294. For the building materials industry training programmes similar to those for the contracting industry above are required. As, however, the specific requirements will depend on the type of industry, its stage of technical development and size, etc, it is suggested proposals concerning specific training programmes should not be made until a preliminary survey of the building materials industry has been completed.

TABLE 1: GROWTH OF POPULATION AND PER CAPITA GDP FOR SOME AFRICAN COUNTRIES - 1969-1971

COUNTRIES	POPULATION (in millions)				PER CAPITA GDP AT 1970 MARKET PRICE (\$US)		
	1969	1970	1971	1972 ^{1/}	1969	1970	1971
NORTH AFRICA							
Algeria	13.91	14.33	14.77	15.27	295.4	303.1	289.9
Egypt	32.50	33.33	34.08	34.84	218.3	218.9	219.9
Libyan Arab Republic	1.87	1.94	2.01	2.08	1,906.4	1,918.8	1,701.8
Morocco	15.28	15.78	16.25	16.80	208.6	212.4	216.4
Sudan	15.31	15.70	16.09	16.49	113.8	116.3	120.4
Tunisia	5.03	5.14	5.25	5.35	244.0	269.8	287.4
Subtotal	83.90	86.22	88.45	90.83	250.0	254.4	250.6
WEST AFRICA							
Dahomey	2.62	2.69	2.76	2.83	86.2	92.6	97.8
Gambia	0.35	0.36	0.37	0.38	116.9	128.1	132.7
Ghana	8.43	8.64	8.86	9.09	281.3	291.6	285.6
Guinea	3.83	3.92	4.01	4.10	76.5	81.6	70.6
Ivory Coast	4.21	4.31	4.42	4.53	311.6	345.9	345.4
Liberia	1.15	1.17	1.19	1.21	347.6	356.8	377.4
Mali	4.93	5.05	5.14	5.26	51.5	53.3	53.9
Mauritania	1.14	1.17	1.20	1.23	158.6	163.4	167.0
Niger	3.91	4.02	4.13	4.24	91.0	90.4	83.6
Nigeria	53.70	55.07	56.51	57.98	126.0	135.1	147.4
Senegal	3.78	3.93	4.02	4.11	203.1	202.7	183.3
Sierra Leone	2.58	2.64	2.70	2.77	173.4	168.2	176.4
Togo	1.92	1.97	2.02	2.07	131.4	136.8	133.8
Upper Volta	5.28	5.38	5.49	5.60	57.7	57.6	57.3
Subtotal	97.83	100.32	102.82	105.40	142.8	150.8	156.1
CENTRAL AFRICA							
Burundi	3.47	3.54	3.62	3.70	55.8	59.6	58.8
Cameroon	5.74	5.84	5.97	6.11	170.3	174.9	170.4
Central African Republic	1.58	1.61	1.64	1.67	122.5	120.6	117.1
Chad	3.62	3.71	3.80	3.89	78.5	77.7	77.4
Congo	0.92	0.94	0.96	0.98	260.9	250.5	247.1
Equat. Guinea	0.29	0.29	0.30	0.30	261.4	262.1	251.0
Gabon	0.49	0.50	0.51	0.52	674.9	670.4	697.6
Rwanda	3.49	3.59	3.69	3.80	55.7	60.1	59.9
Zaire	20.70	21.57	22.48	23.43	90.3	95.1	96.2
Subtotal	40.30	41.59	42.97	44.40	108.2	111.3	110.9
EAST AFRICA							
Botswana	0.63	0.65	0.67	0.69	124.6	127.7	145.8
Ethiopia	24.02	24.63	25.25	25.89	71.2	74.5	74.2
Kenya	10.88	11.22	11.67	12.07	135.3	144.2	148.5
Lesotho	0.90	0.92	0.94	0.96	87.2	84.9	84.6
Madagascar	6.60	6.75	6.94	7.33	124.8	132.1	132.2
Malawi	4.33	4.44	4.55	4.67	73.6	73.2	77.9
Mauritius	0.80	0.81	0.82	0.83	236.6	232.8	250.7
Somalia	2.73	2.79	2.86	2.94	84.9	87.8	88.3
Swaziland	0.40	0.41	0.42	0.43	238.3	234.6	249.8
Uganda	9.55	9.81	10.13	10.46	132.7	132.9	130.9
United Republic of Tanzania	12.93	13.27	13.63	14.00	92.9	96.5	98.3
Zambia	4.17	4.28	4.40	4.52	429.3	374.9	383.3
Subtotal	77.94	79.98	82.28	84.79	118.8	119.4	121.2
TOTAL	299.97	308.11	316.52	325.42	161.9	166.3	167.3

Source: ^{1/} Provisional Survey of Economic Conditions in Africa, 1972 - Part I.

TABLE 2: GROSS DOMESTIC PRODUCT IN PER CENT BY KIND OF ECONOMIC ACTIVITIES FOR SOME AFRICAN COUNTRIES

COUNTRIES	YEAR	AGRICULTURE	TOTAL	INDUSTRIAL ACTIVITY	
				MANUFACT. INDUSTRIES	CONSTRUCTION
NORTH AFRICA					
Egypt ⁶	1968	26	20	-	4
	1969	26	20	17	4
	1970	25	21	18	4
Libyan Arab Republic	1970	2	63	2	7
	1971	2	63	2	7
Morocco	1969	32	22	14	5
	1970	31	22	14	6
	1971	31	22	14	6
Sudan ^{6,7}	4 1969	36	13	10	4
	1970	35	12	10	4
Tunisia	1969	15	16	9	7
	1970	15	16	8	6
	1971	17	16	8	6
WEST AFRICA					
Dahomey ⁶	1967	36	7	6	4
Ivory Coast	1969	30	-	-	-
Liberia	1969	20	33	4	5
	1970	19	33	5	4
Niger	1968	53	7	7	2
	1969	51	7	6	3
Nigeria ²¹	1968	49	10	7	5
	1969	45	15	7	4
Togo	1968	45	19	11	2
	1969	43	19	11	3
Upper Volta	1968	44	10	10	2
CENTRAL AFRICA					
Cameroon ⁶	1967	50	20	-	9
Central African Republic	1970	31	18	13	4
Gabon	1972	13	42	8	11
Zaire	1969	9	57	21	2
	1970	8	50	19	1
EAST AFRICA					
Botswana ⁶	1968	45	4	6	4
	1971	29	20	8	10
Ethiopia	1969	52	10	10	5
	1970	52	10	10	4
	1971	51	11	10	4
Kenya ⁷	1970	31	13	11	5
	1971	29	14	11	4
	1972	31	13	11	5
Lesotho ²¹	1967	62	3	1	2
Madagascar	1969	29	13	12	4
	1970	29	14	12	4
	1971	29	14	12	4
Malawi	1969	53	10	9	3
	1970	51	12	12	4
	1971	46	12	11	4
Mauritius	1969	22	17	14	4
	1970	20	16	13	5
	1971	21	17	14	5

TABLE 2: GROSS DOMESTIC PRODUCT IN PER CENT BY KIND OF ECONOMIC ACTIVITIES FOR SOME AFRICAN COUNTRIES (Cont'd)

COUNTRIES	YEAR	AGRICULTURE	TOTAL	INDUSTRIAL ACTIVITY	
				MANUFACT. INDUSTRIES	CONSTRUCTION
Malawi	1969	53	10	9	3
	1970	51	13	12	4
	1971	46	12	11	4
Mauritius	1969	22	17	14	4
	1970	20	16	13	5
	1971	21	17	14	5
Swaziland ^{6,7}	1969	29	25	12	2
	1970	30	24	11	2
Uganda	⁷ 1969	45	11	8	2
	⁷ 1970	49	11	8	2
	⁷ 1971	48	10	8	1
United Republic of Tanzania ^{7,35}	1970	37	11	9	4
	1971	36	11	9	5
	1972	36	11	9	5
Zambia	1969	6	60	9	5
	^{4,7} 1970	7	49	11	7

(Source: United Nations Statistical Year Book 1973 - Table 178).

For general note and footnotes see original table.

TABLE 3: SUMMARY OF HOUSING CONDITIONS FOR SOME AFRICAN COUNTRIES-POPULATION, HOUSEHOLDS, DWELLINGS

COUNTRY AND CENSUS YEAR			POPULATION			HOUSEHOLDS			DWELLINGS			
			TOTAL=T URBAN=U RURAL=T	Total in 1000	Annual Rate of Growth	House holds in 1000	Total in 1000	Average Size	Tenure of House- holds in % Owners Renters		Total in 1000	Number Occupied in 1000
NORTH AFRICA												
Algeria	1966	T	12,096	47.1.8	12,040	2,034	5.9	-	-	1,795	1,792	0.2
		U	4,688	47.6.1	3,736	663	5.6	-	-	634	631	0.3
		R	7,408	47.6.1	8,304	1,371	6.1	-	-	1,161	1,160	0.1
Egypt	1960	U	9,864	47.49.4.1	9,319	1,992	95.4.8	22,179 ₄₃	22,179 ₅₇	95.1,639	95.1,572	95.4.0
Morocco	1971	T	15,379	2.6	-	2,819	25.5.5	-	-	-	-	-
		U	-	5.2	-	1,113	25.4.9	28.9	62.8	-	880	-
		R	-	2.7	-	1,706	25.5.8	-	-	-	-	-
Sudan	10,56	1964-1966	7,184	4.4	-	253	5.7	59.2	28.3	-	-	-
Tunisia	52	1966	T	4,533	47.1.8	4,437	874	70.7	15.5	-	836	-
		U	1,820	47.2.9	1,735	342	5.1	54.5	32.7	-	335	-
		R	2,713	47.2.9	2,701	532	5.1	81.6	4.0	-	501	-
WEST AFRICA												
Ivory Coast	24,80	1956-1957	U	-	47.6.0	8	25.6.9	-	-	-	-	-
Liberia	5,29,80	1956	U	-	47.4.5	11	3.9	-	-	-	-	-
Nigeria	40	1961	U	68	47.5.1	-	-	8.0	80.9	93	92	0.5
Senegal	44	1955	T	-	-	-	-	-	-	13	11	9.8
CENTRAL AFRICA												
Central African Rep.	8	1959-1960	T	55	-	261	3.9	-	-	-	-	-
Congo	12,80	1960-1961	T	-	47.5.5	134	4.5	-	-	-	-	-
Zaire	60	1967	U	-	47.6.0	-	-	36.47.4	36.38.3	168	-	-

TABLE 3: SUMMARY OF HOUSING CONDITIONS FOR SOME AFRICAN COUNTRIES-POPULATION, HOUSEHOLDS, DWELLINGS (Cont'd)

COUNTRY AND CENSUS YEAR			POPULATION				HOUSEHOLDS		DWELLINGS									
			Total=U Urban=U Rural=R	Total in 1000	Annual Rate of Growth	Living in Houses holds in 1000	Total in 1000	Average Size	Tenure of House- holds in %		Total in 1000	Number Occupied in 1000	Vacancy Ratio					
EAST AFRICA																		
Ethiopia	20	1961	U	-	47	2.9	444	124	25	3.5	22,133	28.1	22,133	56.9	133	148	124	-
Kenya		1962	U	671	47	7.6	-	137	25	5.5	31	-	-	-	-	137	-	-
Malawi	30,65	1967	U	93	203	47	6.9	148	43	3.4	36	38.7	-	-	45	43	4.7	-
Mauritius		1962	T	33	701	33	3.1	-	138	4.9	36	48.5	36	31.2	141	135	4.6	-
			U	121	317	47	2.3	-	46	4.9	36	31.3	36	55.4	47	45	3.3	-
			R	121	365	47	3.2	-	92	4.8	36	57.3	36	19.0	94	89	5.3	-
United Republic of Tanzania	29,58	1958	U	93	79	1.0	-	96	3.1	-	-	-	-	-	-	-	-	-
Zambia		1969	T	93	3,881	7	-	4,016	915	4.4	-	-	-	-	879	-	-	-
			U	93	784	7	6.5	-	-	-	-	-	-	-	188	-	-	-
			R	93	3,097	7	2.0	-	-	-	-	-	-	-	691	-	-	-

(Source: United Nations Statistical YearBook 1973 - Table 198)

For general note and footnotes see original table.

TABLE 4: SUMMARY OF HOUSING CONDITIONS FOR SOME AFRICAN COUNTRIES-SIZE, DENSITY OF OCCUPATION AND FACILITIES

COUNTRY AND CENSUS YEAR			SIZE	DENSITY OF OCCUP.		PERCENTAGE OF DWELLINGS					Dwellings per 1000 Population	Capital Form.in Res. Const. as % of GDP
			Average Size (Rooms/ Dwelling)	Percent- age of Dwellings with one Room	Average No. of Persons/ Room	Per cent of Dwellings with min. 3 Pers/ Room	Water Piped inside Dwelling	TOILET		Electric Lighting		
			TOTAL=T URBAN=U RURAL=R					Any Type	Flush			
NORTH AFRICA												
Algeria	1966	T	2.2	34.6	2.8	-	22.7	49.1	-	33.7	71.0	-
		U	2.4	28.3	-	-	53.5	93.1	-	74.0	-	-
Egypt	1960	R	2.1	38.1	-	-	5.9	25.1	-	11.8	-	-
		U	2,103.6	107.7	2,951.6	9515.5	1621,9539.5	-	-	16,9511.8	17,18,491.7	-
Morocco	1971	T	2,102.1	1035.5	2,102.4	1042.3	-	-	-	-	-	-
		U	2,102.1	1033.2	2,102.1	1034.4	2164.8	92.6	-	81.5	-	-
		R	2,102.1	1036.9	2,102.6	1047.4	-	-	-	-	-	-
Sudan	10,56	1964-1966	U	2.2	-	2.5	-	2163.9	70.3	2.6	3226.4	171.2
Tunisia	1966	T	21.6	59.7	23.2	-	21,3214.8	-	-	3223.9	-	-
		U	21.9	46.0	22.7	-	21,3235.1	-	-	-	-	-
		R	21.4	68.0	23.6	-	21,321.8	-	-	-	-	-
WEST AFRICA												
Ivory Coast	24,80	1956-1957	U	23.0	29.9	2.5	23.7	-	-	-	0.7	-
Liberia	5,29,80	1956	U	2.3	-	1.7	-	-	-	-	-	-
Nigeria	40	1961	U	21.4	76.9	23.0	41.3	-	95.0	7.0	81.3	-
Senegal	44	1955	T	2.3	30.3	1.5	14.9	87.7	-	-	95.9	-
CENTRAL AFRICA												
Cent. African Rep.	8	1959-1960	T	1.1	1089.6	23.4	-	-	-	-	-	-
Congo	12,80	1960-1961	T	1.6	62.8	22.7	-	-	-	-	-	-
Zaire	60	1967	U	-	-	-	-	-	-	-	-	-

TABLE 4: SUMMARY OF HOUSING CONDITIONS FOR SOME AFRICAN COUNTRIES-SIZE, DENSITY OF OCCUPATION AND FACILITIES (Cont'd)

COUNTRY AND CENSUS YEAR		SIZE		DENSITY OF OCCUP.		PERCENTAGE OF DWELLINGS									
		TOTAL=T URBAN=U RURAL=R	Average Size (Rooms/ Dwelling)	Percent- age of Dwellings with one Room	Average No. of Persons/ Room	Per cent of Dwellings with min. 3 Pers / Room	Water Piped inside Dwelling	TOILET			Dwellings per 1000 Population	Capital Form. in Res. Const. as % of GDP			
								Any Type	Flush	Electric Lighting					
EAST AFRICA															
Ethiopia	20	1961	U	-	-	2.7	-	10,21	74.3	-	-	10	58.2	-	-
Kenya	30,65	1962	U	2.9	58.3	2.5	41.1	-	-	-	-	-	-	7,49	2.5
Malawi		1967	U	1.9	46.6	1.9	-	-	21.6	67.7	33.0	15.7	-	-	-
Mauritius	34	1962	T	2.7	27.5	1.9	37	28.6	14.9	86.8	22.4	46.9	4,17	2.7	-
			U	2.7	31.5	1.8	37	31.0	27.7	98.2	55.3	81.9	-	-	-
			R	2.7	24.6	1.9	37	26.7	8.4	81.0	5.7	29.2	-	-	-
United Republic of Tanzania	29,58	1958	U	59	2.1	59	37.2	59	1.8	-	-	59	30.7	59	2.4
Zambia	89	1965	T	2.9	51.3	2.4	47.4	12.4	49.6	15.1	-	-	-	-	-
			U	2.4	23.7	-	-	48.6	92.5	57.3	-	-	-	-	-
			R	1.7	58.8	-	-	2.5	38.0	3.6	-	-	-	-	-

(Source: United Nations Statistical Yearbook 1973 - Table 198).

For general note and footnotes see original table.

TABLE 5: GENERAL INDICATORS OF ACTIVITY IN CONSTRUCTION FOR SOUTH AFRICAN COUNTRIES: NUMBER OF EMPLOYEES, WAGES AND SALARIES, VALUE OF TOTAL OUTPUT

COUNTRIES	NUMBER OF EMPLOYEES				WAGES AND SALARIES OF EMPLOYEES (in millions nat. cur. units)				VALUE OF TOTAL OUTPUT (in millions nat. cur. units)			
	1968	1969	1970	1971	1968	1969	1970	1971	1968	1969	1970	1971
NORTH AFRICA												
Egypt (Pound)	71,232	110,449	103,255	-	18 832	29 092	30 694	-	-	-	-	-
Libyan Arab Rep. (Dinar)	16,838	21,373	13,701	-	17 000	22 200	15 700	-	51 000	62 300	48 000	-
Morocco	-	-	-	-	-	-	-	-	-	-	-	-
Sudan (Pound)	-	-	-	-	9 426	8 217	-	-	-	-	-	-
Tunisia (Dinar)	21,954	19,348	15,516	-	7 234	7 319	6 141	-	25 906	25 237	22 790	-
WEST AFRICA												
Ghana (New Cedi)	54,783	57,467	49,993	-	24,500	25,400	23,300	-	-	-	-	-
Ivory Coast (Franc)	14,816	24,913	15,799	16,705	-	-	-	-	34 572	37 612	56 494	-
Togo	-	-	-	-	-	-	-	-	-	-	-	-
CENTRAL AFRICA												
Cameroon	-	-	-	-	-	-	-	-	-	-	-	-
Central African Republic (Franc)	-	1,545	2,144	1,876	-	231	-	398	-	1 457	-	2 575
Gabon	-	-	-	-	-	-	-	-	-	-	-	-
Rwanda (Franc)	2,607	2,450	2,637	-	72 749	72 540	71 083	-	249 908	266 802	348 960	-
Zaire (Zaire)	11,995	-	-	-	2 957	-	-	-	13 061	-	-	-
EAST AFRICA												
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Kenya (Pound)	31,837	26,981	28,699	24,142	7 670	8 267	9 634	11 261	34 799	39 158	43 599	54 353
Madagascar (Franc)	-	-	-	-	1 359	1 266	1 295	1 408	-	-	-	-
Malawi (Kwacha)	9,097	10,348	11,703	11,703	2 232	3 308	3 527	4 044	8 552	20 906	17 019	21 667
Mauritius (Rupee)	2,126	2,181	2,023	2,272	44 000	41 000	42 000	53 000	-	-	-	-
Swaziland (Rand)	-	2,823	1 002	1 350	2 471	-	-	0 941	6 500	2 579	3 300	3 586
Uganda (Shilling)	42,000	42,400	47,700	50,100	-	-	-	-	-	-	-	-
United Republic of Tanzania (Shilling)	47,305	52,767	54,569	50,931	124 700	139 500	180 100	154 900	-	-	-	-
Zambia (Kwacha)	63,970	64,579	-	-	41 274	48 006	-	-	-	-	-	-

(Source: Yearbook of Construction Statistics, October 1974).

TABLE 6: GENERAL INDICATORS OF ACTIVITY IN CONSTRUCTION FOR SOME AFRICAN COUNTRIES-VALUE OF CONSTRUCTION, VALUE ADDED, ASSETS

COUNTRIES	VALUE OF CONSTRUCTION				VALUE ADDED				GROSS ADDITIONS TO FIXED ASSETS			
	NEW CONSTRUCT REPAIRS				(in million nat. cur. units)				MACHINERY ETC/ BUILDINGS			
	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)	(in million nat. cur. units)
	1968	1969	1970	1971	1968	1969	1970	1971	1968	1969	1970	1971
NORTH AFRICA												
Egypt	-	-	-	-	-	-	-	-	-	-	-	-
Libyan Arab Rep. (Dinar)	46.200/ 1000	55.300/ 1000	35.000/ -	-	26.000	33.100	21.000	-	5.000/ 0.300	3.800/ 0.600	1.900/ 0.700	-
Morocco	-	-	-	-	-	-	-	-	-	-	-	-
Sudan (Pound)	28.932/ -	47.053/ 1344	-	-	-	-	-	-	-	-	-	-
Tunisia (Dinar)	16.785/ 7.703	18.210/ 5.924	16.319/ 4.894	-	12.345	11.898	9.956	-	0.673/ 0.234	0.740/ 0.246	1.193/ 0.678	-
WEST AFRICA												
Ghana *New Cédi)	119.700/ 13.200	126.900/ 14.100	146.200/ 17.400	-	72.900	81.900	93.600	-	-	-	-	-
Ivory Coast (Franc)	-	-	-	-	16.813	19.665	-	-	-	-	-	-
Ivory Coast (Franc)	-	-	-	-	-	-	-	-	-	-	-	-
Togo	-	-	-	-	-	-	-	-	-	-	-	-
CENTRAL AFRICA												
Cameroon (Franc)	-	-	-	-	-	-	-	-	-	-	-	-
Central African Republic (Franc)	-	1.394	-	2.564	-	711.000	-	997.000	-	-	-	-
Gabon	-	-	-	-	-	-	-	-	-	-	-	-
Rwanda (Franc)	-	-	-	-	-	-	-	-	8.891	26.114	19.574	-
Zaire (Zaire)	0.353	-	-	-	5.589	-	-	-	1.362/ 1.150	-	-	-
EAST AFRICA												
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-
Kenya (Pound)	-	-	-	-	14.790	15.312	16.806	19.578	3.181/ 0.671	3.499/ 0.663	6.155/ 0.804	6.992/ 0.897
Madagascar (Pound)	-	-	-	-	3.694	3.528	4.139	4.380	213.000	356.000	353.000	341.000

TABLE 6: GENERAL INDICATORS OF ACTIVITY IN CONSTRUCTION FOR SOME AFRICAN COUNTRIES-VALUE OF CONSTRUCTION, VALUE ADDED, ASSETS (Cont'd)

COUNTRIES	VALUE OF CONSTRUCTION NEW CONSTRUCT/REPAIRS (in million nat. cur. units)				VALUE ADDED (in million nat. cur. units)				GROSS ADDITIONS TO FIXED ASSETS MACHINERY, ETC/BUILDINGS (in million nat. cur. units)			
	1968	1969	1970	1971	1968	1969	1970	1971	1968	1969	1970	1971
Malawi (Kwacha)	12.294/	23.038/	21.220/	19.579/	2.787	5.465	6.138	9.093	0.295/	1.636/	0.545/	1.501
	-	-	0.183	0.183	-	-	-	-	0.125	0.273	0.307	1.582
Mauritius (Rupee)	77.000	82.000	92.000	110.000	49.000	46.000	48.000	60.000	60.000/	59.000	49.000	71.000
	-	-	-	-	-	-	-	-	81.000	85.000	96.000	113.000
Swaziland (Rand)	-	-	-	-	2.619	-	1.374	1.603	-	-	-	-
Uganda	-	-	-	-	-	-	-	-	-	-	-	-
United Republic of Tanzania (Shilling)	595.800	570.800	700.200	770.100	-	-	-	-	-	-	-	-
Zambia (Kwacha)	140.100	147.453	-	-	66.840	73.672	-	-	-	-	-	-

(Source: Yearbook of Construction Statistics, October 1974).

TABLE 7: GENERAL INDICATORS OF ACTIVITY IN CONSTRUCTION FOR SOME AFRICAN COUNTRIES—PERMITS FOR BUILDING CONSTRUCTION

COUNTRIES	PERMITS AUTHORIZED FOR BUILDING/ CONSTRUCTION				FOR BUILDINGS COMPLETED			
	ALL BUILDINGS/ALL DWELLINGS				RESIDENTIAL/NON-RESIDENTIAL BUILDINGS			
	1968	1969	1970	1971	1968	1969	1970	1971
NORTH AFRICA								
Egypt	-	-	-	-	-	-	-	-
Libyan Arab Republic	(615)/(478)	(521)/(407)	(299)/(197)	-	(61)/(44)	(41)/(19)	(23)/(18)	-
Morocco	4,938/9,550	2,168/12,048	6,126/12,960	8,777/15,546	1,145/350	1,463/451	1,654/481	1,897/445
Sudan	-	-	-	-	-	-	-	-
Tunisia	6,205/-	7,255/-	6,260/-	7,715/-	646/172	886/284	795/190	764/187
WEST AFRICA								
Ghana	-	-	-	-	-	-	-	-
Ivory Coast	-	808/-	479/-	489/-	-	388/109	268/177	229/111
Togo	-	-	-	-	24/-	22/-	34/-	44/-
CENTRAL AFRICA								
Cameroon	367/-	348/-	329/-	265/-	50/16	55/41	51/31	41/33
Central African Rep.	261/-	217/-	242/-	-	29/5	28/15	29/8	-
Gabon	473/-	424/-	493/-	541/-	44/63	68/51	117/45	92/56
Rwanda	125/-	138/-	209/-	161/-	10/34	5/36	14/45	11/41
Zaire	923/-	2,309/-	2,423/-	2,649/-	138/150	233/30	325/158	455/83
EAST AFRICA								
Ethiopia	540/-	524/-	386/-	419/-	93/35	107/45	101/39	72/33
Kenya	1477/-(480)/-	1,529/-(479)/-	1,729/-(601)/-	1,704/-(687)/-	(78)/(156)	(138)/(175)	(232)/(194)	(269)/(182)
Madagascar	-	-	-	-	-	71/15 ^{1/}	76/26 ^{1/}	92/12 ^{1/}
Malawi	-	-	-	-	-	-	-	-
Mauritius	2,788/-	2,872/-	2,248/-	1,880/-	-/22	-/31	/43	/54
Swaziland	171/-(111)/-	268/-(161)/-	247/-(79)/-	27/-(81)/-	-	-	-	-
Uganda	371/-(264)/-	1,062/-(246)/-	605/-(343)/(451)	-	-	(179)/(48)	-	-
United Republic of Tanzania	(131)/-	(200)/-	(328)/-	(247)/-	(92)/(44)	(57)/(23)	(85)/(35)	(118)/(49)
Zambia	-	-	-	-	-	-	-	-

(Source: United Nations Yearbook of Construction Statistics, Oct. 1974).

^{1/} Refers to Tananarive only.