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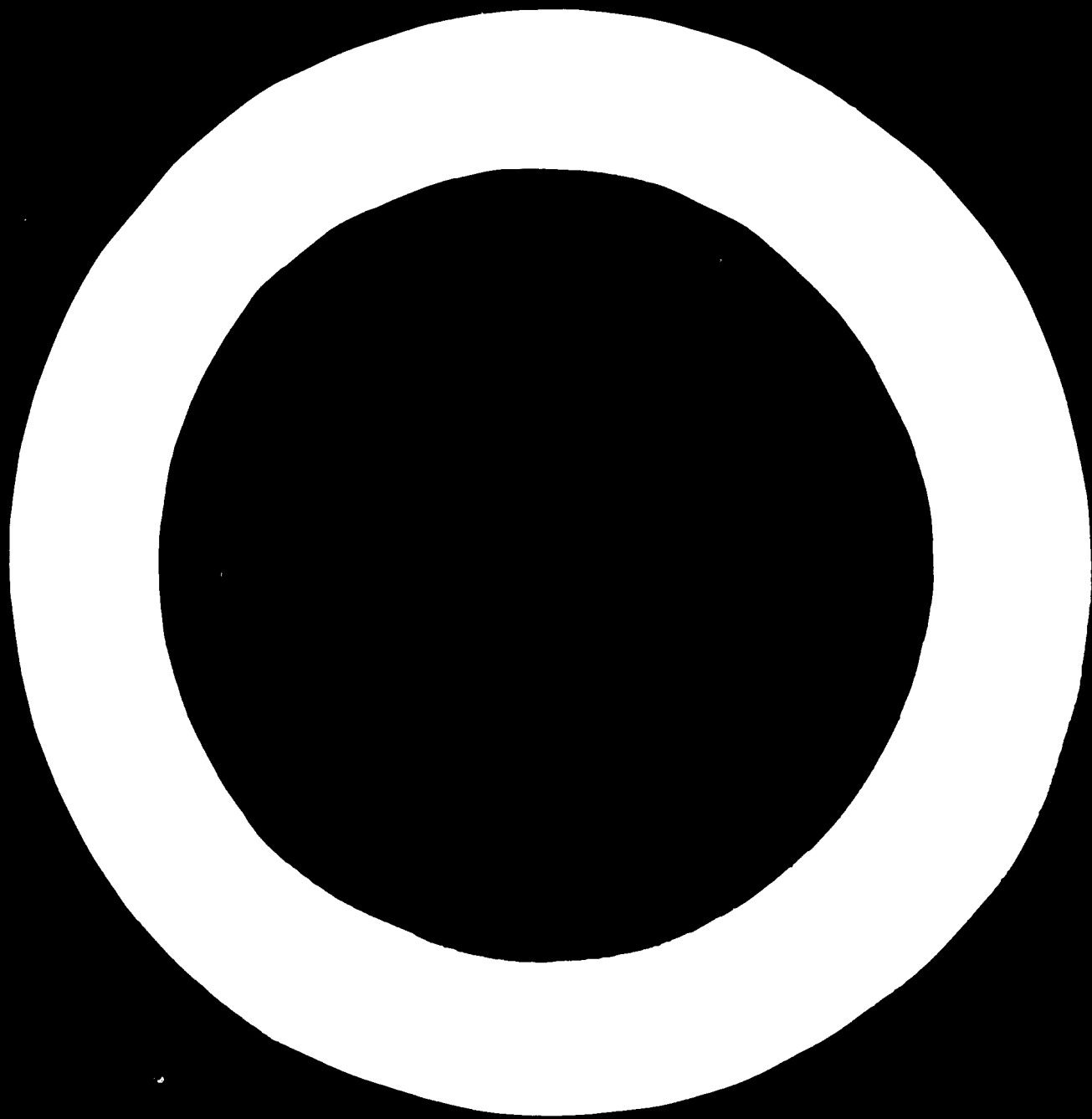
THE STATUS AND PROBLEMS OF HOUSING AND
CONSTRUCTION INDUSTRY IN AFRICA

presented by

the United Nations
Economic Commission for Africa

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We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.



Introduction

1. At any state of development, the construction industry plays a significant role as a means of transforming the natural physical environment. Construction in terms of housing, building and infrastructure touches on almost every development activity yet the industry is literally neglected in national plans. There is budgeting and allocation of funds for all sectors of the industry but there is hardly any long-term planning and co-ordination designed to optimise the use of resources in this single industry which consumes the major portion of resources for domestic capital formation.
2. The housing and construction industry contributed about 5 per cent of the GDP Africa in 1970 and it accounted for some 60 per cent of the gross domestic capital formation which was valued at nearly 10,000 million US dollars at current prices. In Africa as a whole the total gross domestic capital formation was valued at nearly 15,000 million dollars. The industry is a larger employer of labour and its economic and social significance needs no emphasis.

Construction industry

3. In spite of significant attempts to solve the major problems of the construction industry; over the past decade, most of these problems do remain, some have grown worse. The industry, while a large employer of unskilled labour, is subject to very marked fluctuations in its work load which makes employment planning difficult and leads to uncertainty in employment and high management costs. It is still characterised by foreign contractors for the larger construction projects while the skilled and managerial personnel include a high proportion of expatriates. Imported products made up about 60 per cent of the consumption of building materials in 1970.
4. The development of a fully competent construction industry able to meet from within the domestic economy, all the demands likely to be put upon it has not yet been achieved in many countries of Africa and the previous paragraph indicates that the general level of achievement is still low. One result of having to rely on foreign contractors and expatriate personnel to a considerable extent means that the construction of infrastructure projects may be both costly in terms of total expenditure and wasteful in the use of foreign financial resources. The earlier realization of the goal of a fully competent domestic construction industry would give more flexibility to governments in

providing construction work to meet the problem of unemployment. With under-utilized manpower resources, employment creating construction activity using only domestic personnel and material can bring considerable benefits to a stagnant economy.^{1/}

5. It is probably true at the present time that African countries could resolve some of their employment and housing problems by encouraging self-help housing projects. The capital needed to erect an acceptable dwelling is often not much more than the cost of the labour and groups of persons working together can achieve some good results very cheaply.

6. There is an acute shortage of skills in the construction industry at the intermediate level and there is a need to establish technical institutes for this level of training with emphasis on the use of available local materials. This kind of training could even start with a grounding in the basic traditional techniques by which buildings were constructed before imported materials become widely used. The Department of Planning of the Faculty of Architecture at the University of Science and Technology in Kumasi, Ghana, has made significant attempts to revive the use of traditional techniques in housing as a means of reducing costs. Model houses have been built based entirely on local materials, stabilized earth blocks have been improved using a locally made block-making machine, with these blocks a cost level of 15 US dollars square meter has been achieved.

7. The use of artisanal methods in housing in particular and the minimal use of standardization leads generally to high costs of housing when compared to average income levels. Given the present resources, more houses could be constructed provided realistic standards were adopted. The example of a co-operative housing estate in Dar-es-Salaam may be cited here. On this estate, which has been established through the joint efforts of the Tanzania Government, the ECA and the International Co-operative Housing Development Association, low-cost dwelling units for 330 families have been started through co-operative housing societies. Technical expertise was provided by UNTA; the results achieved indicate how organization and management can contribute to cost-reduction.

8. There is also the need for professional expertise in the field of engineering, architecture and planning, but care must be taken when expanding the present facilities for training to ensure that the output of professional staff keeps pace with the output

^{1/} See Status and Problems of Prefabrication in Africa. (HOU/WP/27)

of the skilled and semi-skilled personnel at all levels. The output of professional staff should also be related to the medium and long-term requirements of the particular country and training methods should emphasize the needs of Developing Africa.^{2/}

9. The lack of long-term plans and inadequate management procedures aggravate the cost situation. In order to reduce costs there should be government machinery to co-ordinate the efforts of all state and private organizations concerned with building with the objective of evolving certain standards and long-term strategies for the industry. In addition, in order to reduce costs the capacity of the building industry must be known in terms of the supply of building materials, labour and machinery. Care should also be taken to ensure that whenever new machinery is acquired for any big project there is a demand for the use of the machinery after the execution of the project. The costing of building machinery as capital assets needs examination.

Construction materials

10. The bulky nature of certain building materials, for example, bricks, makes it necessary to locate these industries near the points of utilization. This has the effect of limiting the widespread use of such materials. Bricks are, however, widely used in construction in North Africa where brick producing factories are well distributed over the countries of the sub-region. For materials such as cement which could be transported over relatively longer distances the prices are prohibitive in the land locked countries, such as, Mali, Upper Volta, Niger and Chad. Raw material resources are not lacking in these countries and international arrangements whereby a factory or factories are suitably located to supply cement to more than one country would save considerably on resources for investment.

11. The estimated consumption of building materials in 1970 in Developing Africa and some data on cement production in Africa in 1969 and 1970 are given below in Tables 1 and 2.

12. The use of imported building materials accounted for about 60 per cent of the total consumption in the developing countries in Africa in 1970 and the cement production figures show a general increase in most countries for which information is available between 1969 and 1970. In 12 developing countries cement production increased in total by 9 per cent between 1969 and 1970.

^{2/} There are 14 schools of engineering and 8 schools of physical planning and architecture. All these produced less than 1,000 professionals a year while the theoretical needs are 10,000.

Table 1
Consumption of Building Materials in Developing
Africa in 1970 showing source of supply

Type of material	Consumption (in million US dollars)	Production	Imports	Imports as a percentage of total (%)
Cement	463.0	310.2	152.8	33
Cement products	180.0	154.3	25.2	14
Iron and steel products	874.5	105.0	769.5	88
Non metallic mineral products	257.2	102.9	154.3	60
Wood products	437.1	384.1	153.0	35
Paints and varnishes	103.0	51.5	51.5	50
Electric equipment	257.2	-	257.2	100
Total	<u>2572.0</u>	<u>1008.5</u>	<u>1563.5</u>	<u>60</u>

Source: IFA estimates.

Table 2
Cement production in selected African countries, 1969 and 1970.

Country	Production (in '000 tons)		Increase in production (per cent)
	<u>1969</u>	<u>1970</u>	
Egypt	3,612	3,696	2.3
Morocco	1,165	1,405	20.6
Tunisia	602	546	9.3
Nigeria	566	596	5.3
Senegal	206	242	17.5
Kenya	642	792	23.4
Malawi	76	70	7.9
Uganda	173	191	10.4
Zambia	330	377	14.2
Angola	383	446	16.5
Mozambique	306	362	18.3
South Africa	5,100	5,748	12.6

Source: UN Monthly Bulletin of Statistics, December 1971.

13. The under-development of productive resources has a limiting effect on increased housing production in the majority of countries and this refers particularly to the development and use of local building materials and to the lack of co-ordination between governmental machinery, educational and research institutes, and in the construction industry generally in the private sector. Not only is the development and use of local materials necessary but the better use of present resources in order to reduce the cost of houses and related facilities is also required. Present advice and assistance to governments from the ECA places emphasis on improving marketing, handling, and transport facilities to reduce the cost of materials delivered to the building site.

14. There is no shortage of natural resources in Africa as far as cement, lime, clay, metallic ores, and wood are concerned. In view of the electric power and oil potential of the continent, the present scarcity of economic fuel and power does not present an insurmountable problem. In this field, however, a serious obstacle is the relatively small national markets for household fittings, sanitary ware, hardware, etc., and this limitation is further aggravated by the inadequacy of transport links and suitable transport equipment both within individual countries and in groupings of countries.

Housing construction policies

15. The majority of governments in Africa have been trying to ensure that considerable sums are invested in housing and that domestic resources be used to the greatest extent possible in developing this social sector. However, the size of the investment level is still comparatively small and based on the estimated overall position given in Table 3 below, dwellings probably accounted for about 35 per cent of the work done in the construction industry in 1970 in Developing Africa. This would mean that about 2,100 million US dollars was invested in housing in 1970.

Table 3
Estimated Division of Output of the Construction
Industry Developing Africa, 1970

Proportion of output in per cent

Economic Sector	All works	New Work		Repairs and maintenance			
		Total	Public	Private	Total	Public	Private
Agriculture etc. } Mining & quarrying }	11	10.2	2.2	8.0	0.8	0.1	0.7
Manufacturing } Construction }	12	11.4	2.4	9.0	0.6	0.1	0.6
Gas, electricity, water	7	6.6	6.6	-	0.4	0.4	-
Communications ^{a/}	24	16.0	16.0	-	8.0	8.0	-
Commerce ^{b/}	5	4.5	0.5	4.0	0.5	-	0.5
Dwellings	35	31.8	0.3	31.5	3.2	-	3.2
Education	3	2.8	2.1	0.7	0.2	0.2	-
Health and welfare	3	2.8	2.3	0.5	0.2	0.2	-
Total	100	86.1	32.4	53.7	13.9	9.0	4.9

Source: ECA estimates.

a/ Includes other public services.

b/ Includes other private services.

16. It should be noted from Table 3 that as much as 99 per cent of new housing built in 1970 was for the private sector; this is probably an over estimate but it does indicate the government generally only influences the housing situation through indirect means. There are exceptions and the more recent policy appears to reflect an increased desire for more direct involvement in the development of housing. In many countries progress has been made in establishing machinery to deal with housing development but existing organizations such as housing corporations are generally under-employed and their operations tend to be haphazard because of a lack of a stated policy and of a programme geared to economic development. In a number of countries also, too many authorities and departments have a direct or indirect influence on housing.

17. On present information it appears that in no developing country of Africa has the government directly identified its responsibilities in housing by specific legislation either to establish a special ministry or department or to lay down its objectives in

housing policy or both. It is of interest to take note of the basic laws on housing and urban development enacted in different parts of the world. For example the United States Housing Act of 1949 includes a declaration of national housing policy.

18. In viewing the question of housing policy against conditions and needs in African countries, it is not intended to say that there should be specific legislation; the actual development of housing should, however, meet the basic aspirations of the people of the countries concerned.

19. There is a trend by governments to formulate plans on specific operations, establish relevant machinery and commit themselves to the relevant policy. What this trend needs is a goal whereby local allocations and contributions to housing can be seen to be applied on an overall basis with more emphasis and involvement. Such measures should include more concentration on the development of land and local materials.

20. Mortgage credit has become a characteristic of most of the programmes in African countries.^{3/} There still exists some contention as between home-ownership and rented housing owned by government and local government authorities. The trend is for mortgage credit to become the cornerstone of housing activities, thus to assist in solving the key problem of low purchasing power. Members of African governments have taken a little time to examine this particular problem, and while it is not anticipated that the peak in housing construction experienced in the late 1950s and early 1960s is likely to be repeated, there is now an appreciation that housing is a national problem and that national resources will have to be used to satisfy a national demand.

^{3/} See table 4.

Table 4
Details of terms for house mortgage loans *

Country	Organization	Period of repayment of loans	Rate of interest per annum
Botswana	Commercial Banks	Now known but probably not in excess of 5 years	Not known, but probably those prevailing in the Republic of South Africa 8½-10 per cent
Central African Republic	National Development Bank	5-10 years	8-10 per cent
Ethiopia	Mortgage Company of Ethiopia	5 years	8½ per cent plus 1 per cent additional on approval of loan
	Imperial Savings & Home Ownership Public Association	16 years	Up to 7 per cent
Ghana	First Ghana Building Society	5-15 years	9 per cent
Kenya	Housing Finance Company Kenya Ltd.	15-25 years	8½ per cent
Liberia	Commercial Banks (Housing Bank proposed)	1-5 years	9-10 per cent discounted initially
Madagascar	A Social Welfare Body not named	Up to 20 years	3 per cent
	Madagascar National Bank	10 years	5-7 per cent
	" " "	5 years	8 per cent (50 per cent loans for sums in excess of 2.5 million Madagascar francs)
Malawi	New Building Society	Not stated	7½ per cent Freehold 8½ per cent Leasehold
Mauritius	Commonwealth Development Corporation Government Local Money Market	Up to 20 years	Approx. 8½ per cent
Morocco	Caisse Immobiliere et Hoteliere	15 years	4 per cent (on low-cost housing)
	Caisse Immobiliere et Hoteliere	15 years	4-8 ¾ per cent on ordinary loans

* Source: Country monographs and secretariat.

Table 4 (continued)

Country	Organization	Period of repayment of loans	Rate of interest per annum
Nigeria	Western State Housing Corporation	10-15 years	7½ per cent
	Nigeria Building Society, Lagos	Up to 20 years	8½ per cent
Sierra Leone	Not known but probably from Commercial Banks as Botswana		
Somalia	Credito Somale (Government Commercial Bank)	5 to 25 years	5 per cent
Sudan	Sudan Estates Bank	18 years	3 per cent for low-income groups loan up to £52,000.-
	Sudan Estates Bank	18 years	3 per cent for middle-income groups loan up to £57,000.-
	Sudan Estates Bank	Not stated	6-9 per cent for high incomes over per annum. Loans up to £825,000.-
Swasiland	Swasiland Credit and Savings Bank	Up to 15 years	8½ per cent
	Swasiland Building Society	Up to 15 years	9 per cent
Tanzania	Housing Finance Company of Tanzania Ltd.	15 to 25 years	8½ per cent
U.A.R.	Not named	Up to 15 years	5-6 per cent
Uganda	Housing Finance Company of Uganda Ltd.	15 to 25 years	8½ per cent
Zambia	First Permanent (1962) Building Society, Lusaka	Not stated	Not stated

21. In present financial conditions, it is being realized that dependence cannot and should not be placed on external funds for housing. Local sources of funds such as the accumulation of savings and deposits in local currencies in banks, savings and loan associations, and other credit institutions are gradually being brought into use in housing. Some governments of African countries have recognized that they have recourse to the funds accumulated in social security schemes, in post office savings banks, credit unions, co-operative housing societies, and even in traditional savings societies, all of which can be mobilized.^{4/}

22. Action has been taken in some countries to review the objective of savings and loan associations whereby credit facilities can be made available to the low-income groups for housing. The ECA has made available to the governments of member States documentation on methods of establishing savings and loan associations to provide housing credit together with recommendations on the terms of which credit could be made available.^{5/} It has been recognized that there is a need for incentives both for the person building his own house, and to the building contractor who is prepared to devote the majority of his time to house-building.

23. The cost of infrastructure projects and housing is rising throughout the continent. The main causes of this rise in costs are the lack of proper urban physical planning coupled with the urbanization problem and the high import element of building materials resulting in an annual outlay in Africa of about 2,572 million US dollars a year.^{6/} The element of "imported inflation" will continue to have an influence on the rate of housing production, and domestic capital formation in African countries.

24. It can be seen that limitations in formulating and implementing housing policy are numerous but so are the prospects for increasing housing production through a well-defined policy, plan and programme if certain new approaches and innovations are employed.

^{4/} ECA document entitled "Review of Sources and Methods of Financing for Housing and Urban Development in Africa (E/CN.14/HOU/64).

^{5/} The Role of Savings and Loan Associations (E/CN.14/HOU/26); Mortgage operations and mortgage securities in housing (E/CN.14/HOU/27); The Savings for Building System: a pattern to encourage private housing finance (E/CN.14/HOU/36).

^{6/} The African Building Materials Industries (E/CN.14/HOU/34).

25. Insofar as the prospects for formulating housing policy and programmes or areas for action are concerned, arrangements whereby each ministry of government responsible for housing has its own economics unit have been made in a few countries. It would seem that these arrangements are probably the most effective and practical answer to the limitations which exist.

26. The ECA has been studying the effectiveness of statutory executing agencies such as housing corporations as shown in annual reports and accounts. These reports and accounts show that in relation to overhead costs, the building programmes of these agencies do not produce sufficient housing nor do they have any impact on the improvement of existing dwellings. Perhaps this is because the basis of planning has been the need for new housing which seems to derive directly from the statistical view of a "housing deficit". Although governments have made substantial stakes in new housing, their resources are not unlimited and it has often been the case that funds made available to executing agencies have run out before projects have been completed. A project has therefore been started dealing with the programming of infrastructure and housing which will attempt to show the sequence of events through land use, urban physical planning, and infrastructural and building works, right down to the time of disposal of the land and buildings. The role of the statutory executing agencies in these conditions would be primarily that of a land developer but with sufficient building activity to set standards for dwellings and community buildings. The bulk of the dwellings would be built by the occupiers either through contractual arrangements or under self-help methods. These measures would avoid tying up large sums of public funds for long periods at a very low rate of amortization of capital invested.

Mobilising domestic savings for housing development

27. An important prospect for action concerns the mobilization of domestic savings to increase the inflow of capital to housing. The International Financial Statistics published monthly by the International Monetary Fund show over recent years a steady rise in the level of personal savings and deposits in commercial banks as distinct from time investments made by corporate bodies. The introduction of locally registered stock such as development bonds devoted to housing over medium and long-term periods, would have the effect of drawing on these accumulated funds. Where a number of housing credit institutions already exist, the capital market could be broadened to include not only bonds, but the sale of mortgage and the introduction of loan certificates.

28. The use of funds accumulated in social security schemes including provident funds should be viewed as funds available for longer term investment, as also should the accumulation of premium monies through under-writing of life insurance business. Measures have been taken in Ghana, Ivory Coast and Senegal to mobilize such funds.

29. The activities of the credit union movement in Africa extend in some countries through both the urban and rural areas. Although these funds might normally be considered as being available for short-term credit, the need for longer term investment including reserves would open up yet a further avenue to increase the inflow of capital to housing.

30. Conditions in some African countries are ripe for the introduction of co-ordinating machinery in the present somewhat haphazard arrangements for collection of savings and subsequent disbursement by way of housing credit. This has its effect on housing policy since the majority of institutions tend to give priority to loans on higher class property. Co-ordinating arrangements through a housing bank or mortgage bank would be an effective instrument in channelling loans funds to the right quarters according to the Government's overall housing policy and programme. Measures are being taken in Ivory Coast, Liberia, Senegal, Sudan, Togo and Arab Republic of Egypt to this end.

Social considerations

31. In the field of housing and urbanization the basic problem in Africa has been the neglect of traditional social attitudes not only in the interior layouts of the houses themselves but also, very often, in the layouts of towns and neighbourhoods. The assumption made by planners that the physical structures would change social attitudes has been proved wrong. The result is overcrowding inside the houses and the lack of adequate public facilities in the towns.

32. The second problem has been caused by rural exodus. This has shown itself as slums and shanty towns in towns and peri-urban areas. When this increase caused by rural exodus is coupled with natural growth, the danger of the overcrowded areas outgrowing the towns themselves is very imminent. The social disintegration of urban areas in this manner is obvious.

33. There is no doubt as to the economic viability of the marginal and slum settlements in towns since in certain African cities (e.g. Nairobi and valley), the annual turnover has been estimated at more than 25 per cent of the total turnover of the City itself. The essential thing, however, is to initiate policies which would integrate these marginal areas into the cities of which they are "sub-cities". Such policies should take the following into account:

- (i) Child care and training of adolescents;
- (ii) Neighbourhood and entertainment facilities;
- (iii) Sanitary facilities, water public lighting, etc.; social welfare and community development;
- (iv) Employment and the encouragement of small-scale self-help industries;
- (v) Social factors which lie behind rural-urban emigration;
- (vi) Qualities, skills and attributes which exist in slum areas and which could be exploited to the benefit of the marginal areas;
- (vii) The prevention of anti-social attitudes such as vandalism, etc. which arise from the stigma of living in 'low-class' areas;
- (viii) The realization of the fact that "slums and shanty towns" form an economic solution to the housing problem and should be catered for by appropriate physical planning measures such as site and service schemes, etc.
- (ix) Markets as points of social contact in the African context - the market as a factor in social evolution.

34. In the peri-urban areas questions of land settlement and use create considerable social conflicts. Policies and programmes would be required to evolve land-use patterns which reflect the social attitudes of the people.

35. Of the 60 per cent of financial resources that go into housing and construction, half goes into the provision of housing and its related urban facilities. In the fast urbanizing centres of Africa, horizontal housing as distinct from high-rise (vertical) housing has been very typical. This is not surprising since it is the best transition from the rural to the urban settlement. It also retains most of the features of African life in as much as the ease of expanding the dwelling is maintained. Densities in the

typical traditional African settlement (e.g. Ibadan, Kumasi) were quite high at 30-50 dwellings per hectare in spite of the fact that in those days land was more readily available and none of the modern constraints imposed by the need for common services and facilities were present.

36. The present trend is what has become known as the residential area is a string of 'hamlets' or villas spread around at 5-10 dwellings per hectare. Infrastructure for this type of urban grouping is very expensive. This high cost is not generally reflected in rents or financial amortization. A situation is created whereby substantial subsidies are channelled into housing a certain social class. At the other end of the scale are the well known slums and shanty towns which officially have the status of a neglected step-child (the situation is rapidly changing for the better) which, as we have seen earlier, have a significant economic role in the urban agglomeration. The potential for decay in the former settlement is as high as the potential to improve in the latter. The rational solution is to work out a system of land use and the provision of infrastructure which has the highest potential for improvement. This is the basic problem of the professions that deal with the physical evolution of the built-up environment.

37. The arguments concerning horizontal housing vis-à-vis vertical housing need not be repeated here. In Africa the preference for housing and infrastructure based on imported materials and techniques has grown out of considerations of status and prestige rather than those of needs.

38. Given land, the available materials and techniques^{7/} as well as the financial resources, horizontal housing (single storey; G+0) would appear to be the solution which for the time being offers the following advantages:

- (i) Low-cost of basic structure and related infrastructure with regard to technical specifications and materials.
- (ii) Ease of expansion within land allocation to suit changing family and living conditions.

^{7/} See Document entitled "Materials and Techniques for Rural Housing" (E/CN.14/HOU/79).

39. Taking account of the situation outlined immediately above the only problem remaining is the courage to accept and give official endorsement to locally available materials and techniques and to have these specified where appropriate for example:

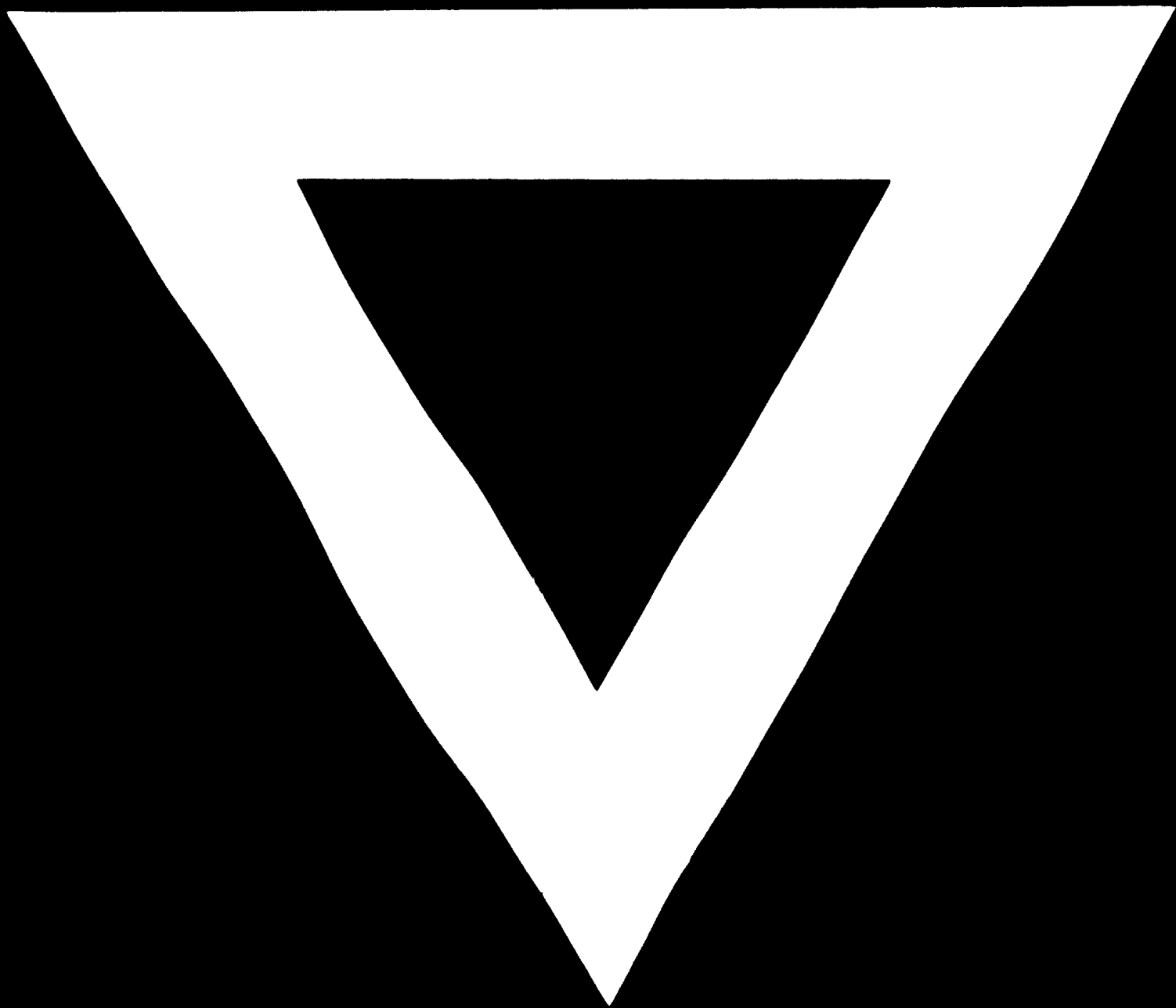
- (i) Timber in Gabon, Ghana, Zaire, Congo;
- (ii) Stabilized clay products in most African countries;
- (iii) Coral and lime in most locations bordering the Indian ocean;
- (iv) Easily cut and shaped stones in the rift valley zone;
- (v) Use of vaults in the zone Dakar-Mogadiscio, etc.

Conclusion

40. In conclusion, the foregoing survey of economic, social and technical conditions in the construction and housing field can be summed up as requiring the following actions; the housing and construction problems can be solved if an integrated approach is applied in both urban and rural development. This integrated approach comprises:

- (i) An intrepid urbanization and housing policy for the increasing number of households, as part of long-term development planning;
- (ii) Imaginative physical planning for the optimum use of the land;
- (iii) A realistic policy promoting savings and investment; and the flow of finance into the construction industry;
- (iv) Basic decisions concerning quality levels (housing standard) founded on human needs and economic reality;
- (v) An intensive encouragement of research divided into:
 - functional research;
 - techno-physical research;
 - techno-economic research;
- (vi) A suitable working method integrating research and practice to achieve the desired goals.
- (vii) An effective public machinery for co-ordinating and managing the housing and construction industry in terms of building regulations, standards and administration, budgeting and tendering procedures, the supply and marketing of building materials, manpower, productivity and the capacity of the building industry.





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