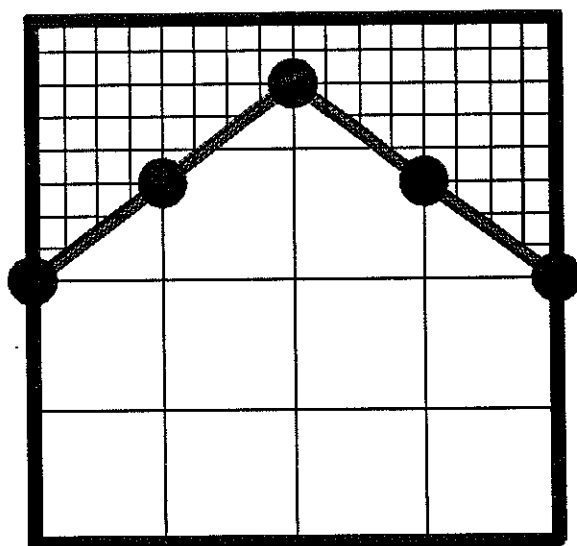# THE HOUSING INDICATORS PROGRAM

VOLUME I:
REPORT OF THE EXECUTIVE DIRECTOR

A JOINT PROGRAM OF THE UNITED NATIONS CENTRE FOR HUMAN SETTLEMENTS
AND THE WORLD BANK

THE HOUSING INDICATORS PROGRAM

VOLUME I: REPORT OF THE EXECUTIVE DIRECTOR

This document is one of four volumes presenting the progress to-date and the preliminary results of the Housing Indicators Program to the Human Settlements Commission, during its fourteenth session to be held in Nairobi in April of 1993. The four volumes are:

Volume I: *Report of the Executive Director*

Volume II: *Indicator Tables*

Volume III: *Preliminary Findings*

Volume IV: *The Extensive Survey Instrument*

Volume I: Report of the Executive Director presents the rationale of the program as a direct outcome of the Global Shelter Strategy, details its progress to-date, presents the ten key indicators chosen for continuous monitoring of the shelter sector, and proposes a direction for the future globalization of the program.

Volume II: Indicator Tables presents ten tables of preliminary values, still subject to revision and change, for 44 shelter sector indicators. The data for the tables were obtained in the extensive survey of housing indicators for the year 1990, and are presently being thoroughly checked before the tables are finalized.

Volume III: Preliminary Findings presents the initial results of the analysis of the indicator data, as of June, 1992. The results, although preliminary and subject to considerable revision, already indicate broad regularities in housing sector outcomes in countries with different levels of GNP per capita, as well as between different geographical regions and policy regimes.

Volume IV: The Extensive Survey Instrument is the current revision of the instrument used for the Extensive Survey in 52 cities during 1991-1992. It presents detailed definitions and methodologies for collecting indicator data on the shelter sector at the city level. This instrument has now been updated after definitions and methods have been tested and refined during the survey.

These four volumes, taken together, complete the current phase of the Housing Indicators Program.

COMMISSION ON HUMAN SETTLEMENTS

SHELTER SECTOR PERFORMANCE INDICATORS

Report of the Executive Director

SUMMARY

This report is submitted in response to the Commission's resolution 13/9 of 8 May 1991 entitled "Shelter sector performance indicators". In that resolution, the Commission requested the Executive Director "to complete the design of and test the internationally comparable set of appropriate key quantitative and policy-sensitive indicators currently under development by the Centre and the World Bank". The indicators are designed "to assist Governments in monitoring progress towards a well-functioning shelter sector in accordance with the objectives of the Global Strategy for Shelter to the Year 2000".

The report, as prepared by the UNCHS (Habitat)/World Bank Housing Indicators Programme Team, explains the rationale of the Housing Indicators Programme, gives an overview of the progress made to date, proposes a set of 12 key indicators designed to capture the essential elements of shelter-sector performance in all countries and suggests how the Programme should be expanded to monitor the performance of the shelter sector in the years to come.

In reviewing this report, the Commission may consider the adoption of the set of 12 key indicators to monitor the performance of the shelter sector at the national level in accordance with the objectives of the Global Strategy for Shelter to the Year 2000, and follow-up action that may be required to continue and strengthen the Housing Indicators Programme in order to facilitate and support national efforts in measuring the performance of the shelter sector on a regular basis.

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I. INTRODUCTION AND OVERVIEW

1.   The Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in 1988, calls for a fundamental shift in governments' role in housing, from attempting to provide housing directly, a policy which has usually failed, toward an enabling role, one which facilitates, energizes and supports the activities of the private sector, both formal and informal, in housing development. This shift necessarily requires governments to obtain a broader overview of the housing-sector as a whole, and to have a better understanding of the mechanisms governing housing-sector performance. There is widespread recognition among governments that this requires better data and better, policy-oriented analysis of such data.

2.   Now that the focus of government attention must shift to the housing sector as a whole, and away from government-centred housing delivery, there is a need for operational tools for measuring sector performance and for comparing it across time and space. Such tools are now necessary for seeing housing policy in a more global, comparative perspective where the accomplishments and lessons learned in one country can become more relevant to another. It is this comparative perspective which may be invaluable for countries in charting their paths, in formulating realistic development objectives, and in measuring their attainment both over time and by comparison with other countries in similar circumstances.

3.   This is, in essence, the spirit of the Commission on Human Settlements resolution 13/9 dated 8 May 1991 which:

> " 2.   *Requests* the Executive Director of the United Nations Centre for Human Settlements (Habitat), in conjunction with international organizations and volunteering member countries, to complete the design and test the internationally comparable set of appropriate key quantitative and policy-sensitive indicators currently under development by the Centre and the World Bank which are designed to assist Governments in monitoring progress towards a well-functioning shelter sector in accordance with the objectives of the Global Strategy for Shelter to the Year 2000;

> " 3.   *Recommends* that requesting Governments be provided technical and financial assistance in the collection and maintenance of data on the shelter sector indicators by the international community;

> " 4.   *Also requests* the Executive Director, to the extent that resources are made available, to develop and implement a database method for collection, analysis, maintenance and dissemination of the national indicator data on a biannual basis. "

4.   The Housing Indicators Programme was initiated jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank in October 1990. It is a direct outcome, and indeed an essential step, in the implementation of the Global Strategy for Shelter to the Year 2000.

5.   The overall objectives of the Housing Indicators Programme are to support the Global Strategy for Shelter by developing conceptual, analytical and institutional frameworks for managing the housing sector as a whole. More specifically, the Programme has four aims:

    (a)   To provide a comprehensive conceptual and analytical framework for monitoring the performance of the housing sector;

    (b)   To create a set of practical tools for measuring the performance of the housing sector using quantitative, policy-sensitive indicators and to test these tools in a broad range of countries;

    (c)   To provide important new empirical information on the high stakes of policy-making in the housing sector for societies and economies through the results of its Extensive Survey;

    (d)   To initiate new institutional frameworks that will be more appropriate for managing the housing sector, and for formulating and implementing future housing policies, in the light of new research findings.

6,   The main steps taken by the Programme have been to study the entire range of indicators for measuring the performance of the housing sector, to test a broad range of indicators in an Extensive Survey of housing indicators in a large number of countries, to study two national housing sectors in greater detail (Hungary and the Philippines) with a view to addressing specific policy issues, to analyse the data obtained from the Extensive Survey, and to focus on a set of key indicators that could be collected and disseminated globally on a regular basis.

7.   This report explains the rationale of the Housing Indicators Programme in greater detail, gives an overview of progress made to date, introduces the 10 indicators found most suitable for regular collection, and proposes the means by which the Programme should be expanded to monitor shelter sector performance on a global basis in the years to come.

II. THE CONCEPTUAL FRAMEWORK

8.   In recent years, market relations have been observed in the housing sector at all levels and in all of its segments, from the most meagre squatter settlements to highly-regulated rent-controlled apartments. Even in centrally-planned and formerly centrally-planned economies, housing is viewed increasingly as a commodity with an exchange value, rather than as a good to be produced and allocated outside of the marketplace. The housing sector in turn is being viewed as one which is driven by a variety of market forces, by supply and demand, and that these forces exert powerful influences throughout all parts of the sector despite the existence of apparently distinctive submarkets.

9.   Recognition of the pervasiveness of market forces has led to the view that even though responsible housing policy must be sufficiently differentiated to deal with particular submarkets, such as high-rise condominiums, public housing rentals and squatter settlements, it is still useful to look at the housing sector as a single market. Trends in one part of a housing market will, over time, be closely linked to those in other parts of the market. Policies designed to affect only the low-, middle-, or high-income submarkets will almost inevitably affect the performance of other submarkets.

10.   Prices, and thus housing affordability by different income groups, are determined in the market by demand and supply factors. Housing demand is determined by demographic conditions, such as the rate of urbanization and new household formation, as well as macro-economic conditions affecting household incomes. It is also influenced by the availability of housing finance and by government fiscal policies, e.g., taxation, subsidies and particularly subsidies targeted to the poor.

11.   Housing supply is affected by the availability of resource inputs, such as residential land, infrastructure and construction materials. It is also affected by the organization of the construction industry, the availability of skilled and productive construction labour, and the dependence on imports. Both the demand and supply of housing are affected by the regulatory, institutional and policy environment.

12.   Housing policies and housing outcomes may in turn affect broader socio-economic conditions, such as the infant mortality rate, the rate of inflation, the household savings rate, manufacturing wage and productivity levels, capital formation, the balance of payments, and the government budget deficit.

13.   In graphic terms, the model of the housing sector is illustrated by the figure below.
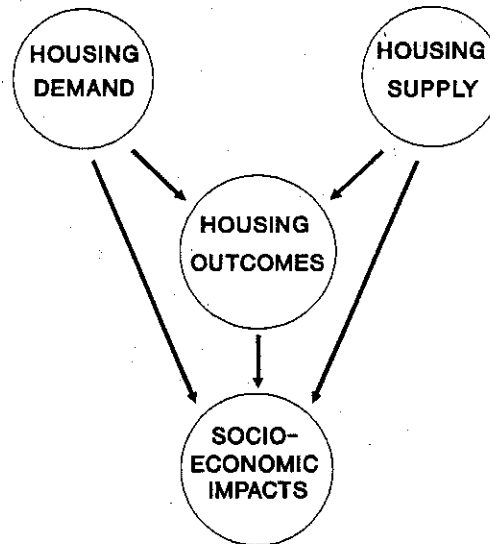
14.   While largely private housing markets produce most of the housing in developing countries, this does not necessarily mean that these markets are either efficient or equitable. Nor does it mean that these markets completely satisfy all housing needs or help attain broader development goals. Housing-sector policies must be based on a positive view of how the sector actually works in a given context, and, also, with specific notions of how it could work better.

15.   To develop a normative view of the housing sector, it is necessary to look at how the sector performs from a number of different perspectives. The five most important perspectives are those of housing consumers, housing producers, housing-finance institutions, local governments, and central governments.[1]

16.   Each of these perspectives focuses on different qualitative norms that represent desired outcomes of each of the key actors. Such desired outcomes, while neither universally attainable nor entirely compatible, may be expected to exert an influence both on behaviour of the key actors and on the way that they perceive the efficacy and responsiveness of government policies and programmes. These desired outcomes are described below.17.   *Housing consumers:* Everyone is housed, with a separate unit for every household. Housing does

not take up an undue portion of household income. House prices are not subject to undue variability. Living space is adequate. Structures are safe and provide adequate protection from the elements, fire, and natural disasters. Services and amenities are available, reliable and environmentally sound, meeting the health and sanitation needs of the household. Location provides good access to employment. Tenure is secure and protected by due process of law. Households may freely choose among different housing options and tenures (owning vs. renting). Finance is available to smooth expenses over time and allow households to save and invest. Adequate information is available to ensure efficient choice.

18.   *Housing producers:* An adequate supply of residential land is available at reasonable prices. Infrastructure networks are adequate and do not hold back residential development. Building materials and equipment and sufficient skilled labour are available at reasonable prices. The entry of new firms into the residential construction sector is not impeded. The residential construction sector is not discriminated against by special tariffs or controls. Adequate financing is available. Housing production and investment can respond to changes in demand without undue delay. Contracts are enforceable. Regulations concerning land development, land use, building, land tenure, taxation, or special programmes are well-defined and predictable, and government application of these is efficient, timely, and uniform. Adequate information exists to enable producers to forecast housing demand with reasonable certainty. Rates of return on all types of housing investment, including rental housing, are sufficient to maintain incentives for investment.

19.   *Housing-finance institutions:* Housing-finance institutions are permitted to compete for deposits on equal terms with other financial institutions; the role of directed credit is minimized. Housing-finance institutions are not forced to compete unfairly with subsidized finance. Lending is at positive, real interest rates with a sufficient margin to maintain institutional health. There are sufficient deposits of an appropriate term structure for long-term mortgage lending. Mortgage lending instruments are permitted which are in demand by households, and which provide adequate protection for the institution. Systems of property rights, tenure security, and foreclosure are such that the financial interests of lenders can be protected. Appropriate institutions exist that protect financial institutions against undue mortgage lending risk.

20.   *Local governments:* Housing and associated infrastructures are of adequate quality to maintain public

health, safety standards, and environmental quality. Infrastructure networks and services are extended in a timely fashion to all communities. The location of new communities is in close proximity to existing main networks. Land use is productive and efficient. Sufficient land can be obtained for laying infrastructure networks and providing local amenities and public services. Housing provides a major source of municipal revenues for building and maintaining infrastructure services and neighbourhood amenities.

21.   *Central governments:* Adequate, affordable housing is available to all. Targeted subsidies are available to assist households that cannot afford minimum housing. Housing-sector policy is integrated into national social and economic planning. Housing-sector performance is monitored regularly. The housing sector contributes toward broad social and economic objectives: (a) alleviating poverty; (b) controlling inflation; (c) generating household savings and mobilizing household productive resources; (d) generating employment and income growth; (e) enabling social and spatial mobility; (f) increasing productivity; (g) generating investment growth; (h) accumulating national wealth; (i) reducing the balance of payments deficit; (j) reducing the government budget deficit; (k) developing the financial system; and (l) protecting the environment.

22.   While the above list may be incomplete, it does provide a broad normative view of a well-functioning housing sector from the perspectives of its key actors. Needless to say, these perspectives are not necessarily mutually consistent. What may benefit one may damage another. Rent control, for example, may benefit families already housed, but may prevent further investment in rental housing and discriminate against new residents. Reducing house prices may benefit housing seekers but reduce the asset value of those owning houses. Increasing land supply may be at the expense of environmental amenities. Stronger foreclosure laws may increase mortgage financing for all at the expense of evictions for some. Resolving these conflicting interests is one of the most fundamental tasks of an effective housing policy.

23.   The Housing Indicators Programme has taken the conceptual framework and the norms for a well-functioning housing-sector as the basic framework for generating a comprehensive set of indicators for measuring housing-sector performance. Indicators were designed to cover housing supply - the cost and availability of key inputs such as land, infrastructure, building materials, industrial organization, and the regulatory environment; housing demand -demographic

variables, finance, and subsidies; and housing outcomes-prices, quantities, and the qualitative features of the housing stock. All key norms for a well-functioning housing sector were translated, as far as possible, into quantitative indicators. These were then tested and collected in the Extensive Survey, which is briefly described below.

III. THE EXTENSIVE SURVEY OF 52 COUNTRIES

24. The Housing Indicators Programme is involved in the collection of data from four major sources:

    (a) The Extensive Survey of Housing Indicators;

    (b) The Intensive Survey of housing indicators in selected countries (Hungary and the Philippines);

    (c) Household surveys in 10 countries conducted by the World Bank during the past decade;

    (d) Additional sources of housing data available from United Nations sources and from selected research publications.

25. The main effort in data collection in the current phase of research has concentrated on the completion of the Extensive Survey.

26. The objectives of this Extensive Survey were:

    (a) To create a basic set of indicators for the housing sector;

    (b) To obtain current estimates for these indicators in 50 or more countries;

    (c) To establish key relationships among these indicators, and between them and key indicators of social and economic development, using cross-sectional data from the extensive surveys in these countries.

27. The more practical aims of the Extensive Survey are:

    (a) To provide an analytical tool for governments for measuring the performance of the housing sector in a comparative, consistent, and policy-oriented perspective;

    (b) To establish base-line data in participating countries for national shelter strategies and housing sector investments;

    (c) To create a framework for comparing housing sector performance between cities and countries, as well as between different time periods;

    (d) To contribute towards establishing a new institutional framework within countries for formulating and implementing sector-wide housing policies;

    (e) To work towards the creation of an international network of experts and institutions with the capacity to help monitor the housing-sector performance in their own, as well as in other countries.

28. Considerable effort was expended in identifying country-based consultants with the necessary skills and reputation to conduct the Extensive Survey. Due to resource constraints, the Survey focused on one major city, in many cases the capital, in each country. A comprehensive set of housing indicators was defined and tested in five cities, resulting in the creation of a data collection tool entitled *Indicator Modules and Worksheets*. This tool was supplemented by a videotaped introduction to the programme, and both were sent to participating consultants during May-August, 1991.

29. The Extensive Survey of housing indicators requested country-based consultants to calculate values for 25 key indicators, 10 alternate indicators, and 20 regulatory audit indicators. All calculations involved the use of published data and expert estimates, and did not require new surveys. Completed returns have now been received for the cities selected in all 52 countries participating in the Survey.[2] Housing indicators were chosen to provide an overview of the performance of the housing sector in each city, including information on housing affordability, quality, finance, production, subsidies, and the workings of the regulatory and institutional environment.

30. Initial results were received and reviewed by the Housing Indicator Team during October 1991 - January 1992. Each return was examined for internal consistency, as well as for results that appeared anomalous and required further justification. Reviews were then sent to the country-based consultants, in preparation for regional meetings where these results were to be discussed in greater detail.

31. Three regional meetings on housing indicators were conducted. The first was hosted by the Government Housing Bank in Bangkok, Thailand, in November 1991 and was attended by Asian consultants and members of the Programme Staff. The second was hosted by the United Nations Centre for Human Settlements (Habitat)

in Nairobi, Kenya, in January 1992 and was attended by consultants from Africa, Europe, the Middle East and North America, by representatives of UNCHS (Habitat) and Programme Staff. The third was hosted by the Ecuador Housing Bank (BEV) in Quito in February 1992 and was attended by Latin American consultants, a representative of UNCHS (Habitat) and Programme Staff.

32.   The purpose of these regional meetings was to improve the quality of the initial data, to revise the survey instrument, and to discuss how best to institutionalize the process of collecting housing indicators. The meetings consisted of plenary discussions focused on conceptual and methodological issues, of workshops focused on data-gathering problems and on definitions, and of one-to-one meetings with individual consultants to discuss their particular submissions. Based on these discussions in the regional meetings, the Extensive Survey instrument was revised and some indicators were replaced or redefined. The consultants were asked to re-submit their results, and all submissions were to be received by October 1992. Initial data from the Extensive Survey have already been tabulated and checked, and the analysis of the data has commenced.

33.   In addition to the Extensive Survey, Intensive Surveys of housing indicators involving household surveys and specific surveys of local housing markets, housing delivery systems and housing institutions were undertaken in Hungary and the Philippines and to a more limited extent in Chile, Colombia, Ecuador, Mexico and Venezuela. These surveys were designed to collect data

which could be useful in shedding light on specific policy concerns. 34.   The Programme has received broad support from a number of international agencies. So far, in addition to the financial support provided by the co-sponsors, resources have been provided by the United States Agency for International Development and FINNIDA. The Programme's total budget to-date is $US1,027,000.

35.   The key remaining tasks of the Programme, under its present budget, are to complete the manuscript detailing the results of the Extensive Survey, to document and distribute data to country-based consultants and other interested parties, to disseminate these results through publications, and to plan how UNCHS (Habitat) can best establish the capacity to support the monitoring of shelter sector performance on a global basis in the years to come. Once the results of the Extensive Survey are disseminated to country-based consultants they will organize in-country seminars. These seminars, for which funds are now being sought, will be aimed at a broad constituency, bringing together public agencies at the national and municipal level, as well as private-sector representatives, non-government organizations and community-based organizations. The main objective of these seminars will be to work towards creating a new institutional framework which could focus on the management and development of the entire housing sector.[3] A secondary objective is to expand the collection of data on indicators to other cities,[4] gradually moving towards a nationwide coverage.

IV. THE PLAN FOR THE GLOBALIZATION OF THE PROGRAMME

36.   Deficiencies in data and lack of serious quantitative analysis considerably hamper the ability of governments to make informed choices concerning desirable housing-sector policies, and other policies which have major impacts on the sector. There is often no clear sense of the norms in a well-functioning housing sector, or of how best to bring about or move towards those norms. As a result, costly policy failures occur, inhibiting the development of the housing sector and frustrating broader development objectives. There is therefore strong demand among governments, expressed clearly in Commission on Housing Settlements resolution 13/9 quoted above, for a set of quantitative indicators for measuring the performance of the housing sector on a regular basis. At present, the housing sector in most developing countries cannot be monitored in a fashion which would enable decision-makers to determine whether housing conditions are improving or getting worse, or whether broad housing policy goals are being attained.

37.   Put in a global context, it is impossible at present to determine how a particular country is faring in comparison with other countries or whether its performance is above or below the expected norm given its particular circumstances. Neither is it possible to determine which policies pursued by which countries should or should not be emulated to attain better performance, because a typology of countries with similar housing-sector profiles does not at present exist. Without such a comparative framework, global policy recommendations are found to be inapplicable to specific countries, while country-specific recommendations remain idiosyncratic and arbitrary.

38.   While individual developing countries often measure one or another housing indicator, usually during a census which takes place every 10 years, global housing indicators are practically non-existent. The United Nations Development Programme (UNDP) assembles no housing indicators in its annual *Human Development Report*. The World Bank publishes no housing indicators in its annual *World Development Report*, and the United Nations Centre for Human Settlements (Habitat) publishes a report on human settlements conditions every 10 years, relying mostly on census data which is updated and improved with data obtained from housing indicators.

39.   UNCHS (Habitat) aims to collect a key set of housing indicators for all countries, developing as well

as developed, on a regular basis. It proposes to do so in an evolutionary manner, starting, as it already has, in more than fifty countries and expanding its coverage to include all countries during 1992-1994. The key development objective of the globalization of the Programme is therefore to build the capacity for monitoring housing-sector performance in developing countries, and to improve the soundness of housing policies and strategies through regular monitoring.

40.   Accordingly, during this next phase the focus of activities will shift from conceptual and measurement issues relating to the development of a set of key policy-sensitive indicators, to the building of national capacities for regular and systematic measuring of the performance of the housing sector. During the process, UNCHS (Habitat) also aims to support the development of the national capacity for policy analysis leading to effective policy-making and institutional reform in the shelter sector. Regular monitoring of the housing sector to understand better the relationships between policies and their sectoral outcomes is also expected to bring about a more meaningful interface between the public sector and the key actors of the formal and informal private sector, strengthening their mutual roles in improving the overall performance of the housing sector.

41.   In each country, it is proposed to collect housing indicator data starting with one major city, expanding the data collection to other cities in later years, and finally expanding the data-collection effort nationwide. Accordingly, and given the enormity of the task, in the first phases of the globalization of the Programme, one major city will be chosen in each country, preferably a major city requiring a serious policy focus.

42.   It is proposed that 10 key housing indicators will be collected for each such major city. This number of indicators is sufficient to cover the main features of the housing sector, as will be explained in chapter V below. At the same time, it is small enough to allow for regular and systematic collection at a reasonable cost and to capture the necessarily limited attention of policy-makers. It is therefore recommended that the 10 key indicators will be collected on a global basis every two years, as resolution 13/9 suggests, covering half the member countries in any given year.

43.   Initially, however, when a city conducts the Extensive Survey for the first time, it is proposed that a more complete diagnosis be conducted, following the

lines established in the present Extensive Survey. These are detailed in the revised *Indicator Worksheets and Modules* document. The worksheets require a considerably larger number of indicators, approximately 60 in all, and include basic socio-economic data not always specific to the housing sector, as well as a survey questionnaire on the regulatory and institutional environment of the housing sector. It is proposed that most of the information required by the modules will be updated on a less frequent basis, mostly every 10 years with a smaller number of indicators requiring update every five or six years.

44.   Experience with the Extensive Survey indicates that for the highest quality of data to be ensured, it is essential that the country-based consultants employed for the collection of the indicator data be trained to ensure that all data conform to agreed-upon definitions and collection methods.

45.   The comparative database will be published annually by UNCHS (Habitat) and drawn upon for its bi-annual reports to the Commission and for its *Global Report on Human Settlements*. The database will also be made available to UNDP for its annual *Human Development Report*, and to the World Bank for itsannual *World Development Report*. In addition, the Programme will publish a set of manuals and tools for monitoring housing-sector performance. These may

include regulatory audits, land market assessments, housing delivery system spot surveys, and institutional audits. Finally, the Programme aims to publish a series of high-quality policy research papers based on data from housing indicator surveys, supplemented by data from other sources. The Programme will also coordinate training activities related to housing indicators, as well as in-country seminars, both national and sub-national, and regional seminars. To ensure that the Programme maintains high standards, it is proposed that its data-collection and research activity be guided by an expert advisory board, recruited from among the top researchers in the field on the different continents, most of whom have been associated with the Extensive Survey. The Programme will rely on regular feedback from member countries, as well as from international agencies, regarding the usefulness and cost-effectiveness of the indicators in the policy reform and housing-sector management process.[5]

46.   A proposal for supporting the globalization of the Programme has been drafted by UNCHS (Habitat) in collaboration with the World Bank, for discussion with multilateral and bilateral donors. It requires a total of $US5 million for a five-year period.

V. CRITERIA FOR SELECTING KEY INDICATORS

47. One of the key objectives of the Housing Indicators Programme is to institutionalize the collection of housing-indicators on a global basis, and to collect housing sector data on a regular basis. This requires a small, basic set of housing indicators, one that will be policy-sensitive, transparent, relatively easy to collect and calculate on a regular basis, and easily understood by policy-makers.

48. The Programme chose to start the Extensive Survey with a relatively comprehensive set of indicators, and to collect many more indicators than the basic set that could be collected on a regular basis. The emphasis in the Extensive Survey was on research, and the main aim was to identify any and all indicators that could be used in understanding and measuring the performance of the housing sector. This approach was seen as particularly important, given the paucity of data on the sector in most developing countries. It has made it possible to study a number of alternative indicators; to determine which indicators are more transparent and easier to collect; to assess the relative cost of collecting different indicators; to eliminate indicators for which data cannot be obtained; to postpone the inclusion of important indicators (such as "Targeted subsidies" and "Homelessness") until better methods for their definition and collection can be developed; to study the policy-sensitivity of different indicators; to measure the correlation among related indicators and to determine which is the best proxy for a given set of measures; and to refine definitions and methods so as to make them applicable to the entire spectrum of countries and conditions.

49. Given the preliminary results of the Extensive Survey, as well as the results of earlier household surveys in 10 countries, it has been possible to determine the main criteria according to which a set of 10 basic indicators should be selected. These are:

(a) A minimum of 10 indicators are required to ensure that the five key groups of housing indicators: prices, quantities, housing quality, demand and supply are adequately covered;

(b) Similarly, a minimum of 10 indicators is required to ensure that all the five key perspectives on the housing sector: households, producers, financial institutions, and local and central governments are represented;

(c) Ratios should be preferred to absolute numbers, as they contain more information, and as they normalize values among different countries, e.g., the house price-to-income ratio;

(d) Indicators should have clearcut policy implications; e.g., ill-defined housing "needs assessments" should be avoided;

(e) Important indicators such as, e.g., targeted subsidies or homelessness, should not be included until better methods for their definition and collection are devised;

(f) Indicators for which definitions are not transparent and/ or which require subjective judgements, e.g., composite measures requiring weighing, should not be included;

(g) Indicators should be policy-sensitive, i.e., known to be subject to change with the systematic application of policy instruments;

(h) The basic set of indicators should be internationally comparable, applicable to both developing and developed countries;

(i) There should be a balance between quantity indicators, e.g., housing production, and price indicators, e.g., the rent-to-income ratio;

(j) There should be a balance between stock measures, e.g., permanent structures, and flow measures, e.g., housing production;

(k) Indicators which have not been tested in a number of different countries and found to be transparent and cost-effective should not be included;

(l) The basic set of indicators, as well as the definitions and methods of collection should be open-ended and subject to revision until the analysis of the Extensive Survey is complete, and later subject to periodic revisions in consultation with the Expert Advisory Group.

VI. THE KEY HOUSING INDICATORS

50.   Given these criteria, the Programme has proposed and has commenced testing 10 key housing indicators. The 10 indicators are divided into five main groups:

Price indicators: Indicator 1: House-price-to-income ratio

                      Indicator 2: Rent-to-income ratio

Quantity indicators: Indicator 3: Housing production
                     Indicator 4: Housing investment

Quality indicators: Indicator 5: Floor-area per person
                     Indicator 6: Permanent structures
                     Indicator 7: Authorized housing

Demand-side
indicators: Indicator 8: The housing credit portfolio

Supply-side
indicators: Indicator 9: The land development
                                  multiplier
                     Indicator 10: Infrastructure expenditures
                                   per capita

51.   During the testing phase of the above indicators, the preparatory process and the conclusions of the United Nations Conference on Environment and Development (UNCED) - and in particular, chapters 7 and 21 of Agenda 21 - have reinforced the emphasis on the availability of basic services, already affirmed in the Global Strategy for Shelter to the Year 2000 as an essential and inseparable component of shelter adequacy, as an essential component of the UNCED goal of improved living environments for all. Within basic services, two priority considerations for all shelter situations, and particularly for the developing countries, are the existence of an adequate and reliable supply of safe drinking water and adequate sanitation, and the availability of clean, reliable and environmentally-sound energy sources, products, technology and infrastructure to meet household energy requirements in a sustainable way. Therefore, the following indicators on access to basic services will have to be included for priority testing in the next phase of the Programme:

Services indicators: Indicator 11: (a) Safe drinking water
                                    (b) Sanitation

                      Indicator 12: Household energy
                                    (electricity/gas/fuel/renewables)

52.   The first 10 key indicators by themselves cannot capture all the dimensions of the housing sector. When the initial Extensive Survey is administered, it will also contain a regulatory audit and other base-line indicators in each of the first five groups cited above. The resulting data will provide a number of key diagnostic measures of housing-sector performance. In-depth studies and

sample surveys will be needed to monitor specific policies. Individual countries supplement this basic set of indicators in special concerns,[6] particularly regar(outcomes for the poor and for other grou[needs.[7]

53.   The significance of each indicator, across different levels of GNP per capita and across geographical regions, and the preliminary analysis on the results of the Extensive Survey are given below. For each of the indicators a graph[8] is presented which indicates the median reported value for five different income groups of about ten countries each, extrapolated from the data collected in the cities covered by the Extensive Survey. The graphs display the highest and lowest reported value of the indicator within each income grouping. Regional groupings are indicated in the annex.

A. Price indicators

54.   Two key indicators of housing price are examined - housing price and rent, each normalized by income. While each is a measure of affordability of housing, each also conveys other information on the state of the housing market. Information on housing prices conveys information on wealth held in the form of housing and thus on the potential base for property taxation. Deviations of either measure from norms conveys information on potential distortions which may be indicative of a variety of dysfunctional aspects of housing markets.

1. Indicator 1: The house-price-to-income ratio

55.   This is defined as the ratio of the median free-market price of a dwelling unit and the median annual household income.
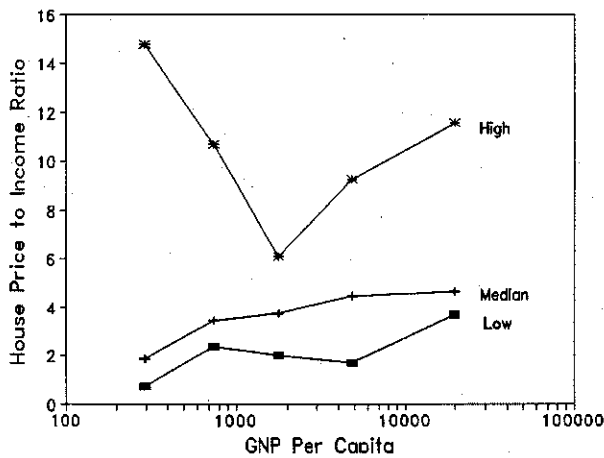
Sub-Saharan Africa	1.04
South Asia	6.95
East Asia	4.15
Latin America and Caribbean	3.06
Europe, Middle East and North Africa [a]	5.03
Industrialized countries	4.7

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[a] Comprised of middle-income European countries, Bulgaria, Czechoslovakia, Greece, Hungary, Poland, Portugal, Romania, Turkey and Yugoslavia, and all countries of North Africa, the Middle East and Afghanistan.

(a) *Significance*

56.   If there is a single indicator which conveys the greatest amount of information on the overall performance of housing markets, it is the house price-to-income ratio. When house prices are high relative to incomes, other things being equal, a smaller fraction of the population will be able to purchase a house. As important, however, this indicator provides important insights into several housing market dysfunctions, indicative of a variety of policy failures. When this indicator is abnormally high, for example, it is generally a sign that the housing supply system is restricted in its ability to satisfy effective demand for housing, a feature of many housing delivery systems in both market and centrally-planned economies. In such cases, it is often

found that housing quality and space are depressed below levels that are typical of countries with well-functioning and responsive housing delivery systems. When the indicator is abnormally low, it may indicate widespread insecurity of tenure, a situation which leads to reduced willingness of the population to invest in housing and to lower than necessary housing quality.

57.   Despite the broad insights that can be provided by this indicator, it has never heretofore been the subject of regular international data collection.

(b) *Findings*

58.   The mean reported house-price-to-income ratio is 5.0, and ranges from a low of 0.7 to a high of 14.8. The reported median increases modestly with the level of economic development. Variation among regions is slightly more pronounced, with the highest reported ratios in South Asia and the lowest (1.04) in sub-Saharan Africa. Reported ratios of house-price-to-income are particularly high in countries which have restricted private property rights and which give a prominent role to the public sector in the ownership of land and housing. Other countries which have particularly high house-price-to-income ratios are those with high construction costs and high land prices, caused in part by tight regulatory environments affecting land use and housing construction, with policies such as agricultural green belts and complicated and time-consuming regulations. The house-price-to-income ratio is indicative of the general level of excess demand in housing markets, and is, based on preliminary analyses, associated with reduced housing consumption (especially alternative measures of crowding and dwelling space) and reduced rates of home-ownership.

2.   *Indicator 2: The rent-to-income ratio*

59.   This is defined as the ratio of the median annual rent of a dwelling unit and the median annual household income of renters.

(a) *Significance*

60.   This indicator, like Indicator 1: House-price-to-income ratio, is a key measure of housing affordability. In a well-functioning housing market, housing
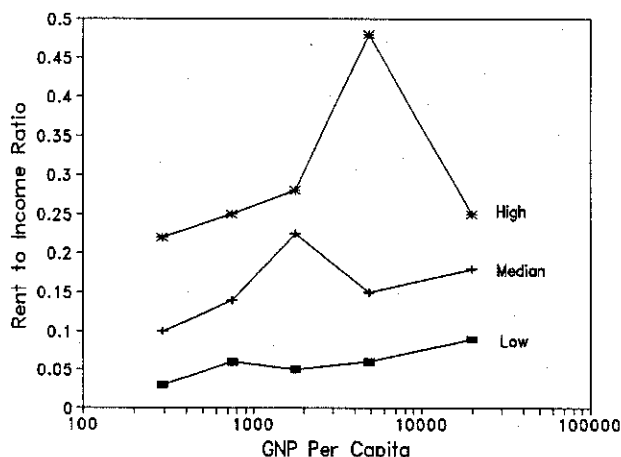
Sub-Saharan Africa	0.1
South Asia	0.12
East Asia	0.2
Latin America and Caribbean	0.17
Europe, Middle East and North Africa	0.11
Industrialized countries	0.18

expenditures should not take up an undue portion of household income. As in the case of the house-price-to-income ratio, this indicator conveys information on more than just affordability, however. A relatively high value for this indicator is often a sign that the supply of rental housing is failing to meet demand, and is sometimes associated with lower than necessary housing quality. A particularly low value for this indicator is a sign of the prevalence of rent-control measures which result in below-market rents, but which may, in turn, depress rates of housing production and investment.

61.   As is the case of the house-price-to-income ratio, the rent-to-income ratio is rarely reported in international compendia of housing statistics.

(b) *Findings*

62.   The mean reported rent-to-income ratio is 0.18, with a range of 0.03 to 0.48. In general, and consistent with previous evidence, the ratio of rent to income is low among low-income countries, rises with economic development to reach a peak in middle-income developing countries, and then generally falls. Among

regions, the lowest rent-to-income ratios are in sub-Saharan Africa, South Asia, and in Europe, Middle East and North Africa, which includes a number of countries with pervasive rent control. There is little reported variation among other regions in the median ratio of rent to income.

63.   Rents   are   affected   both   by   government intervention, in the form of rent controls, and also by market factors. Countries with high demand pressure, as represented by high household formation rates, have higher ratios of rent to income; those with rent control, significantly lower ratios. Ratios of rent to income appear in turn to be associated with residential mobility and tenure choice. When rents are low, particularly in countries with pervasive rent controls, residential mobility is considerably lower than in otherwise similar countries. When ratios of rent to income are high, owning becomes more attractive than renting, with the result that home ownership rates increase.

B. *Quantity indicators*

64.   Two quantity indicators are examined, each of which is a measure of the potential importance of the housing sector to the performance of the overall economy. Housing production and housing investment are linked to the broader economy through both real and financial linkages.

1. *Indicator 3: Housing production*

65.   This is defined as the total number of housing units (in both the formal and informal sectors) produced in the previous year per 1000 population.
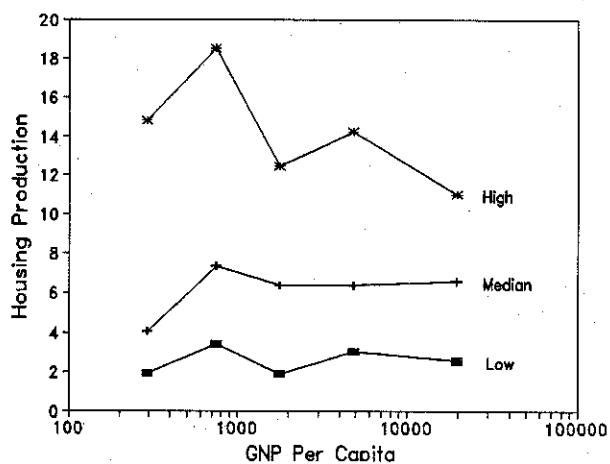
Sub-Saharan Africa	3.42
South Asia	6.05
East Asia	7.16
Latin America and Caribbean	6.01
Europe, Middle East and North Africa	6.55
Industrialized countries	6.12

(a) *Significance*

66. This indicator is a measure of the overall level of housing construction activity, and has been the subject of relatively longstanding data collection in both developing and developed countries. Statistical coverage, however, is far from universal, and is poor for developing countries. For the 52 countries included in the Extensive Survey, production data were reported for only 29 in the *Global Report on Human Settlements*, published in 1986; in the same report, for the 35 developing countries covered by the Extensive Survey, production data were reported for only 12, and even then were often considerably out-of-date.

67. The indicator represents one measure of the importance of the housing sector to the broader economy, but, in combination with other data, is also important as a measure of the ability of the housing delivery system to keep pace with increasing demand for housing. As a measure of the volume of construction, it is closely related to the level of employment in residential construction, use of intermediate inputs, and, through multiplier effects, to the overall level of economic activity.[9] Housing production can also be normalized by the size of the housing stock to give a rate of expansion of the housing stock, which can in turn be compared with the rate of household formation, thereby indicating whether or not housing production is keeping pace with demographic change.[10]

68. Housing production relative to the population depends on some basic demographic characteristics of the population, particularly on household size. For a given rate of household formation, a higher rate of production of housing units relative to population will be required to accommodate a population with small households than with large households. Production, however, also depends on both supply and demand

factors - each of which depend on a number of housing policies such as, for example, the availability of housing finance or the flexibility of land and building regulations.

(b) *Findings*

69. Housing production per 1000 population averages 6.8 for the sample. With the exception of the low-income countries, where production is lowest, production per 1000 population is relatively constant at different levels of economic development. Among regions, rates of production are highest in East Asia and lowest in sub-Saharan Africa. When an alternative measure of housing production is examined, the percentage rate of change of the housing stock, the trends are qualitatively identical to those for production per 1000, but are more pronounced. Comparisons of the rate of production, as a percentage of the housing stock, with the rate of household formation indicate a vast difference in the ability of housing markets to cope with emerging housing demand. In all nine countries reporting household-formation rates lower than 1 per cent, the rate of change in the housing stock is above the household-formation rate. By contrast, in countries reporting household-formation rates above 3 per cent, 15 of 21 (85 per cent) report that the housing stock is expanding less rapidly than the household-formation rate.

2. *Indicator 4: Housing investment*

70. This is defined as the total investment in housing (in both formal and informal sectors), as a percentage of gross domestic product.
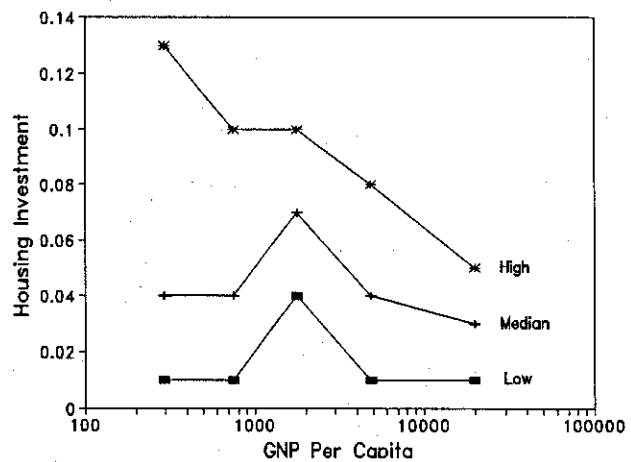
(a) *Significance*

Sub-Saharan Africa	1
South Asia	7
East Asia	5
Latin America and Caribbean	7
Europe, Middle East and North Africa	7
Industrialized countries	4

71. This indicator measures the proportion of overall economic activity which is accounted for by housing investment. As such, it measures directly one of the two major direct contributions the housing sector makes to the economy (the other being the production of housing services, which is reflected as "rent" in the national income accounts). Data on housing investment are notably deficient in national income accounts data, a deficiency which is reflected in international statistical compendia on housing. The *Global Report on Human Settlements,* for example, reports data on this indicator (at the national level) for only 5 of the 35 developing countries covered by the Extensive Survey.

72. Housing investment reflects both quantities produced and prices. Thus a given value of this indicator may reflect either high unit housing costs and low volumes or low costs and high volumes of production. Investment levels are thus likely to be affected by policies influencing both demand levels and unit costs. It is also affected by the need to rebuild housing in the aftermath of war and natural disaster. Because the indicator amalgamates both prices and quantities, it is best interpreted in relation to other data, such as housing production data and data on the physical characteristics of the housing which is being produced.

(b) *Findings*

73. Previous studies of the determinants of housing investment have reported strong regularities in this indicator, when it is analysed at the national level. Generally speaking, housing investment as a proportion of GNP has been found to rise systematically over a broad range of economic development, to reach a peak among countries with incomes slightly below that of the lowest-income industrialized countries, and then to fall gradually with further development. Data from the

Extensive Survey which covered urban areas are generally consistent with previous findings, with values of the indicator often lowest among countries with either very low or very high incomes, and highest among countries with intermediate income levels. Examples are found of countries which have high production and low costs and low production and high costs, and of countries with unusually high levels of investment as a result of natural disasters. Reported investment rates are by far the lowest in sub-Saharan Africa, and highest in South Asia, Latin America and the Caribbean, and Europe, Middle East and North Africa.

C. *Quality indicators*

74. Three housing quality indicators are examined here. Floor-area per person and permanent structures are indicative of physical housing conditions, whereas authorized housing is indicative of the legal status of housing. Legal status may convey independent information concerning housing quality, to the degree that it is a consistent indication of reduced incentives to invest in property improvements.

1. *Indicator 5: Floor-area per person*

75. This is defined as the median usable living space per person (in square metres).
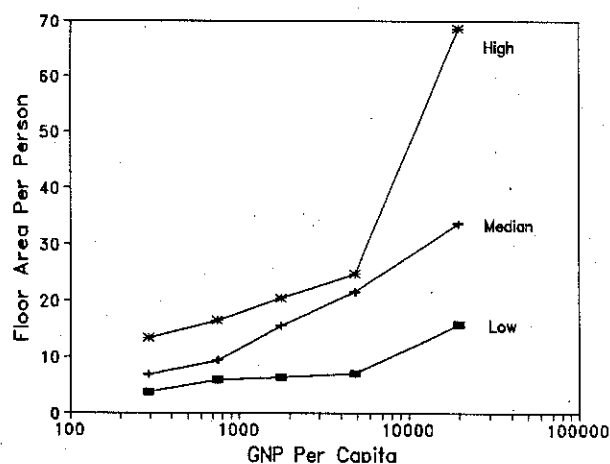
(a) *Significance*

76. This indicator measures the adequacy of living space in dwellings. A low value for the indicator is a sign of overcrowding. Alternative measures of crowding have been the subject of data collection and reporting in international statistical compendia. The two most common of these are persons per room and households

Sub-Saharan Africa	7
South Asia	7.1
East Asia	13.4
Latin America and Caribbean	15.3
Europe, Middle East, and North Africa	14.5
Industrialized countries	31.93

per dwelling unit, each of which was included among the data collected during the first phase of the Housing Indicators Programme. Of the three measures, floor-area per person and persons per room are highly variable among countries and are highly related to each other; either would be an acceptable measure of the adequacy of living space. The former has, however, based on analysis conducted in the Housing Indicators Programme, been shown to be the more precise and policy-sensitive measure of the two. Households per dwelling unit is only weakly related to the other two measures of crowding, does not vary nearly as much as the other measures among countries, and is subject not only to variation according to cultural preferences but also according to varying definitions of "household" among countries.

77. Floor-area per person is the outcome, to a considerable degree, of market forces, which are in turn shaped by a variety of housing policies.

(b) *Findings*

78. The mean reported floor-area per person is about 18 square metres, with a range of from 4 to 69. Floor-area increases consistently with economic development, from about 6 square metres per person in low-income countries to 35 square metres per person in high-income countries. Regional differences in this indicator are dominated by income differences; sub-Saharan Africa and South Asia have the smallest amounts of floor-area per person, and industrialized countries have the highest amounts.

79. Notwithstanding these patterns, there is still considerable variation among countries with similar incomes, much of which appears to be attributable to policy differences which have the effect of influencing land prices and construction costs. Among mid-high- and high-income countries, for example, the countries having the lowest amounts of floor-area per person also have the

highest land prices and construction costs. Preliminary multivariate analyses indicate that more than 80 per cent of the variation in this indicator can be accounted for based on three variables - GNP per capita, construction costs, and land costs. Both construction and land costs are, in turn, highly influenced by a variety of policies.

2. *Indicator 6: Permanent structures*

80. This is defined as the percentage of housing units located in structures expected to maintain their stability for 20 years or longer under local conditions with normal maintenance.
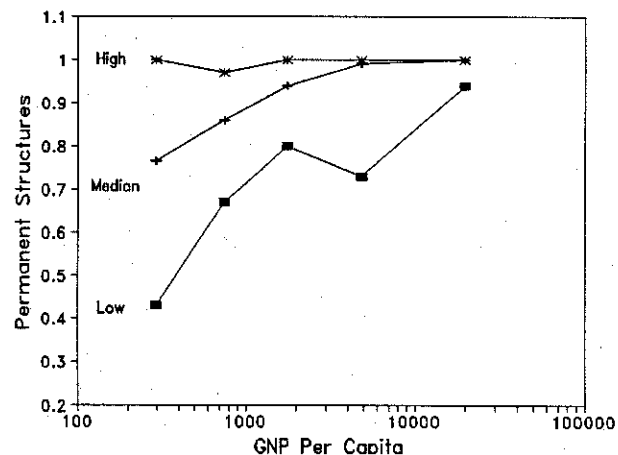
(a) *Significance*

81. This indicator is one measure of the quality of housing, particularly of its durability. Very-low-quality housing is usually made of semi-permanent or temporary materials such as straw, cardboard or cloth, which fail to provide adequate shelter from the elements and which deteriorate rapidly in the absence of frequent maintenance and repair. Permanent structures usually provide better protection from the elements and a higher standard of structural safety, and require a higher level of initial investment.

82. More precise definitions of durability have been reflected in the statistical procedures of many (usually industrialized) countries. Such definitions are, however, highly idiosyncratic and require data which are often unique to particular countries. As such, indicators of housing quality which fully reflect the nuances in definition demanded in particular countries are unusually difficult to apply in international comparisons of housing quality, and have never been regularly collected. The

Sub-Saharan Africa	83
South Asia	86
East Asia	94
Latin America and Caribbean	90
Europe, Middle East and North Africa	97
Industrialized countries	100

measure suggested here has the advantage that it is, in fact, highly variable from place to place, and hence is able to distinguish easily among housing conditions in most developing countries. It is, moreover, relatively straightforward to measure. Yet because the indicator attains its maximum value, 100 per cent, among countries at only a modest level of GNP per capita, further exploration needs to be conducted to develop housing adequacy measures which permit distinctions to be made among countries at higher levels of economic development.

(b) *Findings*

83.   The mean reported proportion of dwellings in structures built of permanent building materials is 90, with a range of 43 to 100. The use of permanent building materials increases consistently with economic development, with only about two thirds of units in low-income cities built of permanent materials and virtually all units built of permanent materials in high-income cities. Regional variations reflect income differences, with sub-Saharan Africa and South Asia having the least housing built of permanent materials and industrialized countries having the most.

84.   Variation in this indicator among countries with similar incomes is considerable. Preliminary analysis suggests that both demand and supply factors are responsible for such variation. The role of rapid urban growth in creating demand pressures that cannot be instantly satisfied is apparent; cities with high growth rates have, other things being equal, lower housing quality as measured by this indicator. Cities with lower levels of residential infrastructure, as measured by either lower levels of infrastructure spending per capita or lower percentages of dwellings with plot access to water also have comparatively fewer dwellings built of

permanent materials. Cities in which the State has played a strong role in the provision of housing generally have higher proportions of permanent housing than do otherwise similar cities.

3. *Indicator 7: Authorized housing*

85.
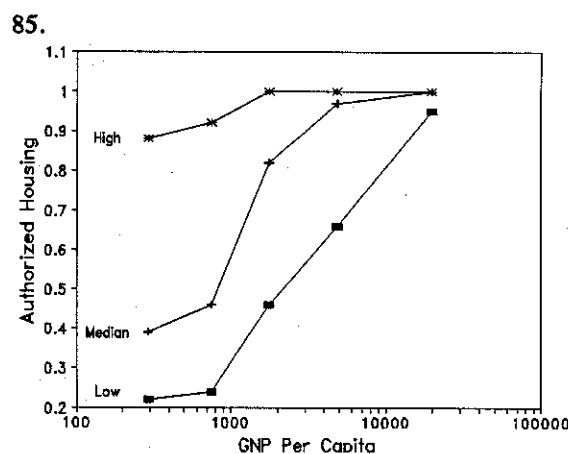
This is defined as the percentage of the total housing stock in compliance with current regulations.

(a) *Significance*

86.   This indicator measures the extent to which the population is housed legally. It reflects the prevalence of both squatter houses occupying land illegally, and houses constructed without the required building, land-use, or land-subdivision permits. A low value for this indicator is a sign that housing development is proceeding without enforced government controls, and that government is either tolerant of housing which does not comply with its regulations or unable to prevent trespasses.

Sub-Saharan Africa	31
South Asia	49
East Asia	88
Latin America and Caribbean	73
Europe, Middle East and North Africa	90
Industrialized countries	100

87.   Considerable research has indicated that tenure security associated with legal rights to own land and housing strongly influences incentives to invest in

upgrading of housing and community infrastructure; affects the willingness of governments to provide water, sanitation, and other services; and has an important effect on property values.

88.   No internationally comparable data have been regularly collected on the legal status of housing.

(b) *Findings*

89.   The mean reported incidence of authorized housing is 76 per cent, with a range of 22 to 100 per cent. The incidence of authorized housing increases sharply with economic development, from 36 per cent in low-income cities to 100 per cent in high-income cities. Regional variation reflects income differences, with sub-Saharan Africa and South Asia having the lowest proportions of authorized housing and industrialized countries the highest. Variation among countries with similar incomes, however, is considerable, reflecting a wide range of market conditions and policy differences. As in the case of other housing-quality variables, cities with higher urban growth rates have proportionally less authorized housing than do those with lower growth rates; cities in reforming centrally-planned economies have relatively greater proportions of authorized housing. Latin America, where in many countries there is a well-developed tradition of squatter land invasion and subsequent consolidation, though not necessarily formal recognition of settlements, has a significantly lower incidence of authorized housing than would be expected.

D.   *Demand-side indicators*

90.   A variety of factors influence the demand for housing which are basically beyond the realm of housing policy - particularly incomes and demographic pressures. Other factors which influence demand are, however, capable of being directly affected by policy. These include the provision of housing finance, the legal framework regarding property rights, and the provision of housing subsidies. While all of these factors have been the subject of data collection and analysis in the Housing Indicators Programme, the focus here is on finance, specifically on a proxy measure for the availability of credit for housing finance - the housing credit portfolio. This indicator is, in addition, a measure of the prominence of the housing-finance system in the overall financial system, and is thus of relevance at the macro-economic level as well as at the household level.

1.   *Indicator 8: The housing credit portfolio*

91.   This is defined as the ratio of total mortgage loans to all outstanding loans in both commercial and government financial institutions.
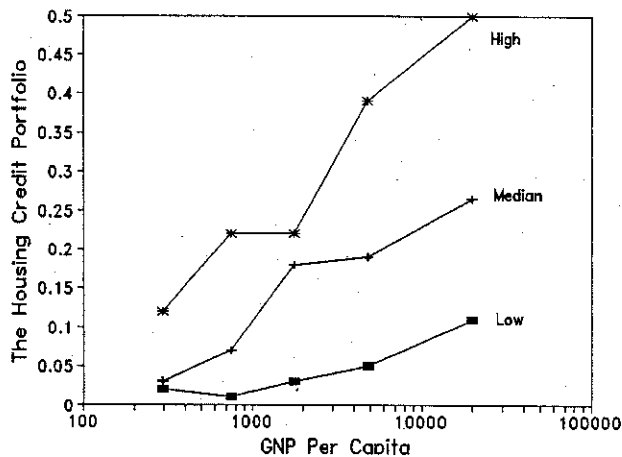
Sub-Saharan Africa	0.06
South Asia	0.03
East Asia	0.06
Latin America and Caribbean	0.2
Europe, Middle East and North Africa	0.1
Industrialized countries	0.25

(a) *Significance*

92.   The housing credit portfolio is a measure of the relative size of the housing-finance sector and its ability to provide households with the funds necessary to purchase housing. When housing credit forms only a small part of total credit, it is quite likely that the finance institutions face legal or institutional constraints which make it difficult for them to meet the demand for housing finance. Financial depth and strength are key elements in a well-functioning housing sector. Adequate financing should be available to smooth housing consumption over time for consumers, and to enable efficient land development and construction for producers.

93. This indicator is intended both to proxy access to housing finance by potential buyers of housing and to convey a sense of the importance of the housing finance system to the overall financial system. An alternative measure of access to finance was evaluated during the first phase of the Housing Indicators Programme; the credit-to-value ratio, which measures the share of annual investment in housing which is financed by long-term formal credit, was, however, found to be less well related to a number of qualitative and quantitative housing outcomes than was the housing credit portfolio. The latter measure, which is recommended here, appears therefore to be a better indicator of both the importance of the housing-finance system to the overall financial sector and of access by households to credit.

94. Despite the relevance of such data to an evaluation of either housing or financial policy, neither data on the housing credit portfolio nor on the credit-to-value ratio have been regularly collected or published in statistical compendia of the housing sector.

(b) Findings

95. The mean reported value of the housing credit portfolio is 0.18, with a range of 0.01 to 0.50. Housing credit, as a proportion of the financial assets of a country's banking system generally increases with economic development. Only 3 per cent of outstanding credit in the low-income countries is held in the form of housing loans, while the corresponding figure in high-income countries is 27 per cent. Variations within and among regions in the housing credit portfolio are considerable, reflecting a variety of market, institutional and policy influences. The prominence of housing loans in a country's banking system depends in part on institutional development in the sector; in preliminary analyses, the proportional allocation of assets toward housing loans is strongly influenced by an index which measures the depth of institutional development of housing finance, after taking account of the level of economic development and the urban growth rate. Latin America, which has a rich set of financial institutions to deal with housing finance, has an unusually high share of the assets of its banking systems allocated to housing loans, with the median reported to be 21 per cent. Centrally-planned economies, which have had neither market-based lending for housing nor market-oriented housing-finance institutions, have smaller than expected portions of their financial assets invested in mortgage portfolios.

E. Supply-side indicators

96. The performance of the housing delivery system depends critically on the performance of a number of different input markets (e.g. land, labour, and building materials) and on a public sector that provides both complementary services such as residential infrastructure and an appropriate and enabling regulatory environment. The Housing Indicators Programme has examined indicators of each of these, but the choice has been made here to emphasise two measures that are capable of indicating both the efficiency of residential land markets and the adequacy of public provision of infrastructure.

1. Indicator 9: The land development multiplier

97. This is defined as the average ratio between the median land price of a developed plot at the urban fringe in a typical subdivision and the median price of raw, undeveloped land in an area currently being developed.
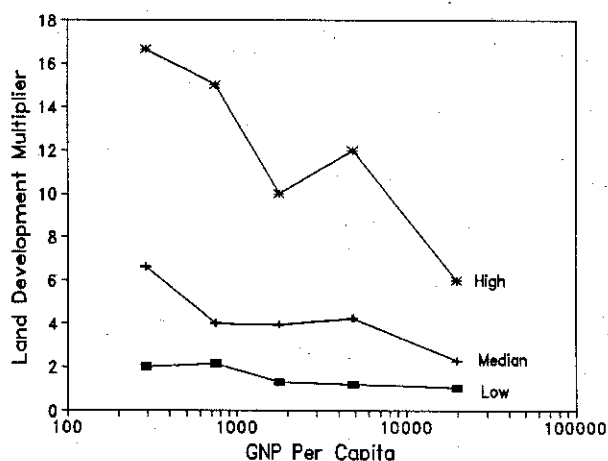
(a) Significance

98. This indicator measures the premium for providing infrastructure and converting raw land to residential use on the urban fringe. It reflects in part the extent to which windfall profits exist in developing land for housing as the result of bottle-necks in infrastructure provision. It is thus an indirect measure of the availability of infrastructure, as well as of the complexity of the development process. It also measures indirectly the existence of monopolistic practices in residential land development. A high value for this is often a sign that there are shortages of urbanized land for housing. An additional indicator for which data were also collected during the first phase of the Housing Indicators Programme was the land conversion multiplier, which measures the premium associated with converting land

from rural to urban use by obtaining the necessary zoning and planning permits. This indicator measures the extent to which regulations restricting urban development increase land costs by restricting land supply.

Sub-Saharan Africa	6.63
South Asia	2
East Asia	2.59
Latin America and Caribbean	3.44
Europe, Middle East and North Africa	5.5
Industrialized countries	2.4

99.   While this indicator was found, during the first phase of the Housing Indicators Programme, to require a great deal of care in its construction and interpretation, it was also found to be a revealing and powerful measure of the overall performance of urban land markets.

100.   No comparable data have ever been collected and presented in statistical compendia related to the housing sector.

(b) *Findings*

101.   The mean reported value of the land development multiplier is 5.2, with a range from 1.1 to 20. The indicator generally declines with increasing economic development, suggesting that provision of serviced land is more responsive to demand in better-off countries. Even values of this indicator in its mid-range appear to indicate that there are premia associated with the provision of serviced urban land which are considerably higher than the actual cost of land servicing. The indicator reaches its highest values in sub-Saharan Africa, where demographic pressures of housing demand are great and infrastructure investment and housing production lag demand, and lowest in industrialized countries where demand is relatively quiescent and infrastructure supply systems are responsive to market forces. Within regions, there is considerable variability in the land development multiplier, in several instances by a factor of 6 or 7. This appears likely to be the result of differences in demand pressures on land development, in infrastructure shortfalls, in infrastructure standards, and in regulatory impediments to land development.

2. *Indicator 10: Infrastructure expenditures per capita*

102.   This is defined as the ratio of the total expenditures (operations, maintenance, and capital) by all levels of government on infrastructure services (roads, sewerage, drainage, water supply, electricity and garbage collection) during the current year, and the urban population.

Sub-Saharan Africa	15.07
South Asia	15
East Asia	48.49
Latin America and Caribbean	30.22
Europe, Middle East and North Africa	68
Industrialized countries	656

(a) Significance

103.   This indicator is an indirect measure of the supply of infrastructure for residential development. When adequate budgets are available for extending urban infrastructure, the land development multiplier should not be exceedingly large. Low levels of infrastructure expenditures result in land-supply bottle-necks and thus in higher prices for land and housing. They are alsoassociated with inadequate provision of residentialamenities, such as water, sewerage, drainage and electricity, and in subsequent traffic congestion, all of which have a direct effect on the quality of housing.
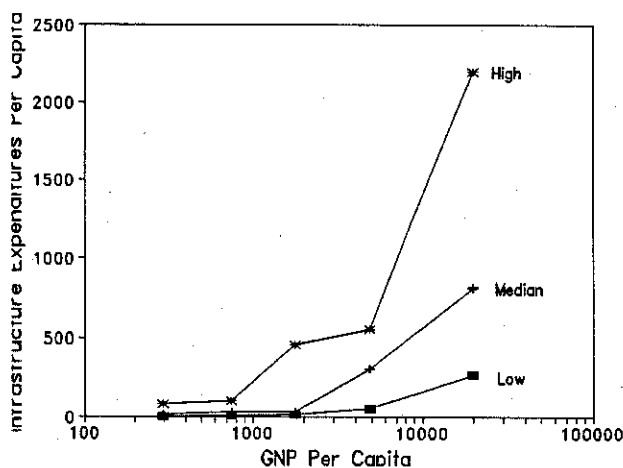
(b) Findings

104.   The mean reported level of infrastructure spending per capita is $US318 per annum, with a range

from $US0.98 to $US2201.00. Spending on infrastructure not only rises consistently with economic development, but shows the greatest degree of variation across income levels of practically any other housing indicator. The median reported value of the indicator for low-income countries is $US15, while for high-income countries it is $US814 - 54 times as high, roughly equivalent to the factor by which per capita incomes differ across income groups. Levels of infrastructure spending mirror income differences across regions, and are lowest in sub-Saharan Africa and South Asia, and highest in industrialized countries. Preliminary analysis suggests, as expected, that the level of infrastructure spending is negatively related to the land development multiplier. Among countries with similar income levels, infrastructure spending levels are also relatively lower in centrally-planned (or formerly planned) countries.

VII. THE USES OF THE KEY INDICATORS

105. The Global Strategy for Shelter to the Year 2000, adopted by the General Assembly of the United Nations in 1988, recognizes the important contribution of the private formal and informal sectors to housing, and focuses specifically on enabling the private sector to meet housing needs more effectively in the future. Making the concept of an enabling strategy concrete requires a better understanding of how the housing sector functions, and of the influence of policies on housing-sector performance. The 10 key indicators, by treating the housing sector as a whole, by viewing it as a market, and by focusing on its key aspects, will help governments focus their housing strategies on enabling the housing sector to work.

106. Furthermore, the collection and dissemination of a set of key indicators which present a broad view of the housing sector will help broaden the institutional base for managing the housing sector, moving it further away from housing agencies with agenda limited to the provision and management of public housing. It will instead help build and strengthen institutions which can oversee and manage the housing sector as a whole, bringing together all the major public agencies which affect housing-sector performance, as well as private-sector and NGO representatives; and ensuring that, to the extent possible, policies, programmes, and regulations benefit the poor.

107. The introduction of housing indicators into global reports, specifically the *Global Report on Human Settlements*, the *Human Development Report*, and the *World Development Report* on a regular basis will focus needed attention on the importance of the housing sector in national economies. It will also lend impetus to new housing research aimed at exploring the reasons for differences in housing outcomes between countries and within countries. It will enable countries to compare their housing-sector performance with that of other countries, particularly with other countries with similar characteristics. A preliminary evaluation of differences among countries in key housing indicators suggests that even for countries at the same level of economic development, housing quality and quantity varies considerably. This suggests that resources are being translated into better-quality housing at very different rates, and that poor-quality housing is likely to be as much the result of housing policy as of poverty *per se*. A comparison of a number of specific housing attributes (floor space, permanent structures, tenure security, and affordability) in East Asia, for example, finds that, despite having lower incomes, households in certain cities enjoy better housing on average than do those in cities with higher incomes. Some countries, generally those with effective housing policies and efficient delivery systems, realize many of the same quality and quantity outcomes as countries with levels of per-capita income up to five times higher.

108. Comparing values of key indicators will enable governments to learn more from the policies and strategies employed in other countries. Many of the differences in housing quality and quantity outcomes appear to be the result of wide variations in the relative cost of housing, as measured by either rents or housing prices. These variations, in turn, appear to be heavily influenced by housing policies. Urban households in Hong Kong and Athens, for example, have similar incomes but very different housing conditions and prices. In 1990, median dwellings in Hong Kong and Athens had 26 and 70 square metres of floor area, and were valued at $US112,000 and $US54,000 respectively.

Comparison of selected indicators in three cities, 1990

Indicator	Tokyo	Paris	Washington, D.C.
Floor area per person (m²)	15.8	32.4	68.7
Construction cost (per m²) ($US)	2604	990	500
Developed land price (per m²) ($US)	2977	108	72
GDP growth rate (1980-1989) (percentage)	4.1	2.4	1.7
Effective property tax rate (percentage)	0.4	4.0	1.3

Differences in costs are attributable to differences in both land and construction costs, both of which are higher in Hong Kong than in Athens. These differences, in turn, are the result of both demand and supply factors, but particularly the latter, where a combination of policies regarding land use, zoning, tax, and competition in the building industry have brought about a relatively unresponsive system of land and housing supply in Hong Kong compared with Athens. Focusing attention on such differences in outcomes should encourage governments to explore new policies and strategies found to be successful in other countries.

109. By examining the supply and demand factors which are likely to influence housing-sector outcomes, productive areas for policy reform can be identified. A simple example is provided in the table below comparing floor-area per person in Tokyo, Paris, and Washington D.C., where incomes are relatively comparable. The table strongly suggests that the much lower value for Tokyo is the result of high prices of land and construction, rather than of income differences. These in turn may be influenced by constraints on land supply, coupled with lower property tax rates, which facilitate

holding vacant land for extended periods. They may also be influenced by the higher demand for housing, which is in turn affected by higher rates of income growth. Supply-side policies which heavily regulate land development, while encouraging land purchases but not land development, have in turn affected land prices and thus the amount of floor-area per person. Opposite patterns can be seen in Washington, D.C., while the results for Paris fall between those for Tokyo and Washington, D.C.

110. Finally, the collection of these key indicators on a regular basis will allow governments to begin to monitor the shelter sector on a regular basis, to detect whether progress is being made in attaining housing objectives, and to examine the effects of changes in shelter strategies on housing outcomes. These key indicators will form the core of a global monitoring strategy for the shelter sector, which can then be expanded and refined by individual governments to meet their own specific needs and aspirations.

NOTES

1.   Other actors may be important in different institutional settings. Among the most important of those are non-government and community-based organizations, State-owned enterprises and firms involved in real-estate brokerage. A more detailed breakdown will also need to take into account the different perspectives of specific government agencies, such as the land department or the fire department, and various agents in the formal and informal housing delivery system.

2.   The annex lists the cities and countries included in the Extensive Survey.

3.   Such forums already exist in several developing countries, notably Jamaica and Thailand.

4.   This effort is now under way in Australia, Brazil, Hungary, India and the Philippines.

5.   The use of indicators as diagnostic measures in sector reviews and in loan negotiations is already under way in the World Bank, e.g., in Algeria.

6.   Two of the key indicators are not very useful for developed countries -- Permanent structures and Authorized housing. Both reach their limits of 100 per cent, for moderate levels of GNP per capita.

7.   Preliminary analysis from the Housing Indicators Programme, however, indicates that measures of overall housing-sector performance, e.g., median values of housing prices and physical outcomes, are consistently very highly correlated with outcomes throughout the income distribution.

8.   The graphs are based on data processed as of 1 October 1992, and are subject to change.

9.   In several developed countries, where nearly all housing is formally built, data on housing starts, an alternative "activity indicator", are easily collected and are used extensively in both popular discussions of the state of the housing sector and in sophisticated macro-economic modelling efforts. In countries with an important informal housing sector, where much of the housing construction activity is officially unrecorded, housing starts data are difficult to collect, but housing completions can be ascertained using either sample surveys or aerial photography.

10.   Data on the size of the housing stock and households are commonly available from censuses of population and housing, and may be combined with housing production data to produce measures of the adequacy of current production to accommodate growing populations.

Annex

Countries in the Extensive Survey[a]

City	Country	GNP per capita	Income group	Region
Dar es Salaam	United Republic of Tanzania	130.00	1	Africa
Lilongwe	Malawi	180.00	1	Africa
Dhaka	Bangladesh	180.00	1	South Africa
Antananarivo	Madagascar	230.00	1	Africa
Ibadan	Nigeria	250.00	1	Africa
New Delhi	India	340.00	1	South Africa
Beijing	China	350.00	1	East Asia
Nairobi	Kenya	360.00	1	Africa
Karachi	Pakistan	370.00	1	South Africa
Accra	Ghana	390.00	1	Africa
Jakarta	Indonesia	500.00	2	East Asia
Cairo	Egypt	640.00	2	EMENA[b]
Dakar	Senegal	650.00	2	Africa
Harare	Zimbambwe	650.00	2	Africa
Manila	Philippines	710.00	2	East Asia
Abidjan	Côte d'Ivore	790.00	2	Africa
Rabat	Morocco	880.00	2	EMENA
Quito	Ecuador	1020.00	2	LAC[c]
Santafé de Bogotá	Colombia	1200.00	2	LAC
Bangkok	Thailand	1220.00	2	East Asia
Kingston	Jamaica	1260.00	3	LAC
Tunis	Tunisia	1260.00	3	EMENA
Istanbul	Turkey	1370.00	3	EMENA
Amman	Jordan	1640.00	3	EMENA
Santiago	Chile	1770.00	3	LAC
Warsaw	Poland	1790.00	3	EMENA
Monterrey	Mexico	2010.00	3	LAC
Kuala Lumpur	Malaysia	2160.00	3	East Asia
Algiers	Algeria	2230.00	3	EMENA
Caracas	Venezuela	2450.00	3	LAC
Johannesburg	South Africa	2470.00	4	Africa
Rio de Janeiro	Brazil	2540.00	4	LAC
Budapest	Hungary	2590.00	4	EMENA
Bratislava	Czechoslovakia	3450.00	4	EMENA
Seoul	Republic of Korea	4400.00	4	East Asia
Athens	Greece	5350.00	4	EMENA
Madrid	Spain	9330.00	4	Industrialized
Tel Aviv	Israel	9790.00	4	Industrialized
Hong Kong	Hong Kong	10350.00	4	Industrialized
Singapore	Singapore	10450.00	4	East Asia
Melbourne	Australia	14360.00	5	Industrialized
London	United Kingdom	14610.00	5	Industrialized
Amsterdam	The Netherlands	15920.00	5	Industrialized
Vienna	Austria	17300.00	5	Industrialized
Paris	France	17820.00	5	Industrialized
Toronto	Canada	19030.00	5	Industrialized
Munich	Germany	20440.00	5	Industrialized
Washington, D.C.	United States	20910.00	5	Industrialized
Stockholm	Sweden	21570.00	5	Industrialized
Helsinki	Finland	22120.00	5	Industrialized
Oslo	Norway	22290.00	5	Industrialized
Tokyo	Japan	23810.00	5	Industrialized

[a]   Arranged by GNP per capita.
[b]   Europe, Middle East and North Africa, as defined in section VI.A of the report.
[c]   Latin America and the Caribbean.