

# POPULATION GEOGRAPHY

Volume 2

Numbers 1 and 2

June-December 1980

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# POPULATION GEOGRAPHY AND THE INTERNATIONAL GEOGRAPHICAL UNION

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Geographers have long recognized the importance of the population variable, and the discipline of population geography has impressive historical roots. Different interest groups as well as individual scholars have made their contribution to the development of this subject during the last several decades. The present paper focuses on the activities of one such group attached to the International Geographical Union (IGU). The IGU commissions and working groups reflect contemporary concerns of the international geographical community and since they operate on a relatively long term basis they can make a greater impact than the international geographical congresses held every four years. Not surprisingly, population has been the focus of attention of a number of commissions (IGU, 1972), some of which existed in the interwar period. Since 1956 there has always been an IGU Commission on Population though its name and membership have varied over the years (Table 1).

## 1891-1949

The earliest commission on population was apparently established by the 1891 International Geographical Congress in Bern—"Commission a la direction des emigrants"—to prepare a questionnaire and give

information on countries to which emigrants could be directed (Leconte, 1959). At the congress in Cambridge, 1928, the new "Commission pour l'etude du peuplement," chaired by M. Bierman of Switzerland, was set up. It was to present a report to the next congress in 1931 (Leconte, 1959). It is interesting to note that in her history of IGU Commissions J. Schneider mentioned four new commissions created in Cambridge, none of them devoted to population (Schneider in IGU, 1972). Nevertheless at a congress in Paris 1931, a number of papers on the subject was discussed. At a meeting on 22nd September 1931 the chairman H. J. Fleure suggested creation of an IGU Commission on Overpopulation. This proposal presented on behalf of R. Biasutti, Sten de Geer, A. Demangeon, H. J. Fleure, P. L. Michotte, T. Odauti and S. Pawlowski, was unanimously adopted by the Congress (UGI, 1932). The new Commission met in Paris in 1933 under the chairmanship of A. Demangeon to discuss plans for the future and establish a base for a world map of population density (Leconte, 1959). The International Geographical Congress in Warsaw, 1934 devoted considerable attention to the questions of population, and its proceedings

\*The author acknowledges helpful comments received from the past and present chairmen of the IGU Commission on Population Geography: R.M. Prothero and J.I. Clarke. However, the author resumes full responsibility for possible errors.

Table 1  
**Membership of the IGU Commissions  
 Concerning Population, 1956-1980**

| Commission on World<br>Population Map |                                | Commission on the<br>Geography and Cartography<br>of World Population |   | Commission on Population Geography |                                     |
|---------------------------------------|--------------------------------|---|---|------------------------------------|-------------------------------------|
| 1960-64                               |                                | 1964-68   |   | 1968-72                            |                                     |
| 1956-60                               |                                | 1964-68   |   | 1972-76                            |                                     |
| 1976-80                               |                                | 1964-68   |   | 1972-76                            |                                     |
| W. William-Olsson*<br>(Sweden)        | W. William-Olsson*<br>(Sweden) | R. M. Prothero*<br>(UK)   | R. M. Prothero*<br>(UK)                   | L. A. Kosinski*<br>(Canada)        | L. A. Kosinski*<br>(Canada)         |
| F. Burgdorfer 1956-59<br>(W. Germany) | K. Horstmann<br>(W. Germany)   | S. Kiuchi<br>(Japan)  | G. S. Gosal<br>(India)                    | J. I. Clarke<br>(UK)               | J. I. Clarke<br>(UK)                |
| K. Horstmann 1959-60<br>(W. Germany)  | S. Kiuchi<br>(Japan)           | L. A. Kosinski<br>(Poland)  | M. T. Gutierrez de<br>Mac Gregor (Mexico) | J. Chr. Hansen<br>(Norway)         | K. M. Elahi<br>(Bangladesh)         |
| S. Kiuchi<br>(Japan)                  | R. M. Prothero<br>(UK)         | V. V. Pokhishchevskii<br>(USSR)                                       | S. H. Ominde<br>(Kenya)                   | R. J. Pryor<br>(Australia)         | L. Herrera<br>(Panama-Mexico)       |
| R. M. Prothero 1958-60<br>(UK)        |                                | P. Sen-Gupta<br>(India)   | V. V. Vorobyev<br>(USSR)                  | R. K. Udo<br>(Nigeria)             | H. Kawabe<br>(Japan)                |
|                                       |                                | W. Zelinsky<br>(USA)  | W. Zelinsky<br>(USA)                      | J. W. Webb<br>(USA)                | A. Mondjannagni<br>(Benin-Cameroun) |
|                                       |                                |   |   |                                    | I. Sandru<br>(Romania)              |
|                                       |                                |   |   |                                    | J. W. Webb +<br>(USA)               |

\* Chairman

+ Vice-chairman



included at least fourteen relevant papers, most of which were presented to the Commission for the Study of Overpopulation in Relation to the Geographical and Regional Conditions (UGI, 1937). It is possible that these papers appeared separately as a reprint since they are mentioned as a separate publication in several sources but this cannot be identified. Two themes dominated the discussions. Apart from a number of case studies concerning overpopulation in different areas, the commission discussed several papers on population mapping. The Swedish geographer, A. Soderlund reiterated a proposal made earlier by Sten de Geer at the Paris meeting in 1933 to sponsor the production of a population map of the world. British geographers (C. B. Fawcett and H. St. Winterbotham) were very active in the debate and Fawcett suggested an extensive programme of preparatory work.

The number of IGU commissions was substantially reduced in Warsaw in 1934, and one of the survivors, the Commission on Population and Rural Settlements, combined these two topics. A. Demangeon continued as a chairman and H. J. Fleure served as a vice-chairman. At the Amsterdam Congress, the Commission met twice on 19th and 25th July under the chairmanship of C. Biermann (in the absence of both Demangeon and Fleure) and discussed a number of papers. Its report appeared in the congress proceedings (UGI, 1938). This part of the work of the Commission which concerned rural settlements was to be summarized in a final report. Two members, M. Czekalski and M. A. Lefevre, assumed this responsibility but the war prevented them from completing the project (Leconte, 1959).

In October 1947 some members of the Commission met in Brussels and subsequently a proposal for the future work was prepared by Messrs. Fleure and Gourou, chairman and secretary, respectively. The proposal was widely circulated (UGI, 1950).

#### 1949-1952

At the Lisbon Congress (1949) P. Gourou, the secretary of the Commission outlined a scheme for future work (William-Olsson, 1963). One of the items considered was a project of the world population map presented to the congress by A. G. Ogilvie (UGI, 1950). The General Assembly of the IGU meeting in Lisbon accepted the recommendations of a special Commission for scientific commissions and extended the life of the Commission under the name "Commission for the Study of Population Problems". It was recommended that the programme of work be reduced (UGI, 1950). The new Commission was chaired initially by C. B. Fawcett and after his resignation by A.G. Ogilvie (both UK). It included R. Biasutti, Italy; B. Brouillette, Canada; F. Milone—secretary, Italy and G.T. Trewartha, USA. Three Commission members met in Paris in 1951, and produced an Interim Report circulated to all national committees in the hope of generating papers on five themes: (i) sources for the study of population problems; (ii) cartographic representation of facts about population; (iii) rural population; (iv) urban population; and (v) migration. The response was disappointing and only population mapping was discussed at length. The final report based on submissions from various corresponding members (G. Chabot, France; A.L. Farley, USA;

W. Hartke, W. Germany; R.G. Marshall, USA; A.C. O'Dell, UK; M.S. Radovanovic, Yugoslavia; A. Soderlund, Sweden; W. Zelinsky, USA) was submitted to the Washington Congress (Ogilvie, 1952). It discussed various concepts and methods used in population mapping and recommended that two projects be considered for the future: an Atlas of World Population and more detailed population maps at the scale 1 : 1 mil. The detailed proposal for the latter project was contained in a paper presented by W. Zelinsky (IGU, 1952). The hope was expressed that the IGU will be able to demonstrate to the United Nations the practical importance of maps of population distribution and offer its expertise for the eventual implementation of a mapping project (Ogilvie, 1952).

#### 1956-1964

Contrary to expectations the Washington Congress, 1952 did not pursue these proposals and it was four years later at the Congress in Rio de Janeiro, 1956 that a new special commission was appointed under W. William-Olsson to investigate the questions of a world population map in conjunction with the approaching 1960 round of censuses (IGU Bulletin, 1957). The Commission was renewed at Stockholm congress in 1960 under the same chairman and with unchanged membership (IGU Bulletin, 1961).

The Commission met several times to discuss methodological aspects of population mapping and programmes of mapping in various parts of the world. Meetings were held in Zurich, Switzerland in 1958 with twelve persons attending (IGU Bulletin, 1958); Stockholm, Sweden in 1959 with 5 participants (IGU Bulletin, 1959) and 1960

with 2; London, England in 1960 with 4; West Kirkby England with 3 attending (IGU Bulletin, 1962), and Wiesbaden, F.R. Germany in 1962 with 10 participants (IGU Bulletin, 1963). The chairman maintained contacts with various individuals, including some seventy corresponding members, and agencies engaged in population mapping in various parts of the world. In some cases personal visitations were made, particularly in 1957 when Prof. William-Olsson visited London, Tokyo, Bangkok, Calcutta, Lahore, Baghdad and Istanbul (IGU Bulletin, 1958). Particularly close contacts were maintained with German scholars (William-Olsson, 1962-63).

The chairman used the opportunity of the International Statistical Institute meeting in Stockholm in 1957 in order to present an exhibit of population maps and acquaint the participants with the IGU plans. Experiments were organized at the Laboratory of Photography at the Royal Institute of Technology in Stockholm to investigate the possibility of making three-dimensional symbols for maps. Also a very useful co-operation was established with the Department of Psychology, University of Stockholm which carried out a series of psychological experiments on the perception of cartographic symbols (Ekman and Junge, 1960; Ekman, Lindman and William-Olsson, 1961).

During the International Geographical Congress in Stockholm in 1960 a major exhibit of population maps was arranged (SSE 1960) and the Commission presented a report on its activities. Another map exhibit was presented to the International Geographical Congress in London, 1964.

The work of the Commission terminated in 1964 (IGU Bulletin, 1964). Its results were contained in a major report including a summary of activities by the chairman and a number of additional contributions by various members and corresponding members (William-Olsson, 1963). The most important part of the report was a set of recommendations for compiling maps of population distribution. The Commission did not feel competent or have the resources to organize a programme of population mapping leaving the responsibility to national agencies and individual scholars. While recognizing the need for flexibility the Commission recommended that maps of distribution using dots and projections of spheres be compiled, preferably on the scale of 1 : 1 000 000.

In subsequent years a considerable number of maps was published, their authors in greater or lesser degree followed the recommendations of the Commission. Such maps appeared in Japan, France, Poland, Rumania, Yugoslavia, F.R. Germany, Nigeria to name just a few. Subsequently an International map exhibit and conference focused attention on accomplishments of the 1960s and a specialized bibliography was published (Hungary 1971).

#### 1964-68

The IGU General Assembly in London in 1964 set up a new Commission chaired by R.M. Prothero (U.K.) who was a member of the previous commission. Its tasks were formulated as follows :

(1) "To encourage and advance geographical studies of population, with particular reference to the relevance and application of these studies to practical problems.

(2) To continue and extend the work of the Commission on a World Population Map by encouraging further the production of maps of the distribution of population, and by advising on the development of techniques for mapping other kinds of population data" (IGU Bulletin, 1965).

Membership of the Commission was substantially changed, its altered name, Commission on the Geography and Cartography of World Population, reflected expanded terms of reference.

The first meeting of the Commission was held in Belgrade in 1965 to coincide with the UN World Population Conference at which the Commission arranged for an exhibit of maps (Prothero, 1965). The meeting organized locally by S. Radovanovic, was attended by fifteen persons, including five regular members, and plans for future work were discussed in great detail (IGU Bulletin, 1966). An outline of the new Soviet world population atlas submitted by V.V. Pokshishevski was circulated among the members and comments were collated by the chairman and returned to Moscow for consideration of the editorial board, of which Prof. Pokshishevski was a member. Apart from this early exchange of views there were no further contacts and the atlas, compiled by the Institute of Ethnography, Soviet Academy of Science, has not yet been published.

The Commission accepted the offer by S. Rado (who was an earlier candidate for the chairmanship of the Commission and later cooperated as a corresponding member) to entrust him with the compilation of the list of definitions used in population geography and a bibliography of population maps (IGU Bulletin, 1967). The



latter project came to fruition with the International Exhibition and a Conference on Population Maps organized in Hungary 1969. Over 500 maps from 35 countries were exhibited and the conference attracted 49 participants (including the chairman of the IGU Commission) who discussed 25 submitted papers (IGU Bulletin, 1970). The bibliography limited to dot population maps was released two years later (Hungary, 1971).

The major project of the Commission during the mid 1960s was a Symposium on the Geography of Population Pressure on Physical and Social Resources which was funded by the US National Science Foundation. A small task force consisting of the chairman and two members met in 1966 (Warsaw, Poland) and in 1967 (State College, USA) to prepare for the Symposium which took place in State College, USA, 17-23 September 1967. W. Zelinsky served as the main organizer and programme coordinator. Forty invited participants came from fifteen countries and represented various disciplines, besides geography. Attention was directed to both theoretical and practical aspects of population pressure and major regional examples were considered from the Indian sub-continent, West Africa and Middle America.

Selected papers from the Symposium were edited by members of the task force, who met at State College again in 1968, and major volume was published by the Oxford University Press, New York (Zelinsky, Kosinski and Prothero, 1970). The book was widely reviewed (25 reviews in print) and has been much quoted. In addition summary of the discussion at the meeting was published separately

(Zelinsky, Kosinski and Prothero, 1969). All authors agreed to forego the royalties which were used to establish a Population Geography Trust Fund which assisted the Commission in later activities.

The report of the Commission for 1964-68 was presented to the Congress in Delhi in 1968 (IGU Bulletin, 1968) and was published later in a separate brochure (Prothero 1972). In India there was a pre-Congress Symposium on population geography organized by late Miss P. Sen Gupta, a member of the Commission and the Commission participated in population Sessions at the Congress. There were no separate publications from these meetings.

#### 1968-72

The new Commission was set up by the General Assembly meeting in Delhi under the same chairman. Its tasks were formulated as follows :

- (1) "To further and develop the study of Population Geography ;
- (2) To continue, encourage, and support work initiated by the earlier Commissions on a World Population Map and on the Geography and cartography of World Population" (IGU Bulletin, 1969).

Membership of the Commission has changed considerably but former members continued to participate as corresponding members.

The Commission first met in London in 1969 concurrently with a conference sponsored by the International Union for the Scientific Study of Population and in which members actively participated. Eleven

persons, including five regular Commission members (some financed by the Commonwealth Foundation) reviewed the work of the past four years and discussed plans for the future (IGU Bulletin, 1970). It was decided to concentrate efforts on a survey of the "institutional aspects" of population geography and on an international symposium on internal migration.

This survey was delayed and was carried out much later (Udo, 1976). The symposium was held in Edmonton, Canada August 1-6, 1972 prior to the International Geographical Congress with L. Kosinski serving as programme coordinator and local organizer and with partial funding from the Population Council. It included six sessions organized by R. Lawton, G. Olsson and W. Zelinsky and a two-day fieldtrip to the northern region of Peace River. Forty participants from nineteen countries attended, including five regular members who also held business meetings of the Commission. The Symposium resulted in a major publication edited by the local organizer and the chairman (Kosinski and Prothero, 1975) and this generated at least eighteen reviews and has been widely quoted in literature. Proceedings of the symposium were made available in a limited number of copies (CPG, 1972).

The report of Commission activities appeared in the IGU Bulletin (1972), and for the years 1964-72 in a separate brochure (Prothero, 1972).

#### 1972-76

The IGU General Assembly meeting in Montreal in 1972 followed the recommendations of the retiring chairman and set up another Commission on Population

Geography under a new chairman L. A. Kosinski of Canada (IGU Bulletin, 1972). Membership was changed but continuity was assured by the enduring interest of the former chairman and more active members in the work of the new commission

The terms of reference were formulated as follows :

- "(1) To further and develop the study of population;
- (2) To continue, encourage and support work initiated by the Commission on a World Population Map and the Commission of the Geography and Cartography of World Population, especially in the field of population mapping;
- (3) To establish and maintain contact with governmental and other organizations dealing with population studies" (IGU Bulletin, 1973).

The first brief business meeting of the commission was held in Montreal during the International Geographical Congress with five members participating (IGU Bulletin, 1973). More important was a meeting held in Liege in 1973 in conjunction with the conference organized by the International Union for the Scientific Study of Population (IUSSP). A number of geographers actively participated in this conference and 25 of them joined with three members of the commission in developing plans for future work (IGU Bulletin, 1974). "Population and Scale" was adopted as a focal theme which was further developed during two subsequent symposia. The main issues of this project were identified as follows :



- (A) The influence of the territorial size of reference units on structural and dynamic aspects of population;
- (B) The ways in which scale of enquiry affects the results of population research;
- (C) Ensuing scale-linkage problems between macro- and micro-population analyses.

For the Liege meeting the Commission sponsored two projects resulting in a population map exhibit presented to the IUSSP Conference and two brochures distributed to the participants. The map exhibit including some 220 items was organized by I.B.F. Kormoss who also compiled a catalogue enclosed with a special brochure on population mapping (Kormoss and Kosinski, 1973). A survey on teaching and research in the field of population geography was carried out in 1972-73 and its results based on 32 replies from 29 countries were published in another brochure (Hansen and Kosinski, 1973).

Two other projects were also sponsored by the Commission during the 1972-76 term. A draft of the World Demographic Atlas was submitted by the UN Statistical Office for critical evaluation of the Commission. Eighteen geographers responded to a request for comment which were subsequently forwarded to the UN. The Atlas was to appear in the 1974 World Population Year. Its production was delayed and finally the project was abandoned by the UN in a fairly advanced stage in 1979.

R.K. Udo carried out a survey on applied aspects of population geography. Its aim was to collect information on geographers

employed in demographic research centres, census offices and national institutes for social and economic research. The questions concerned relevance of geographic training for their jobs and the prospects for greater participation of geographers in these agencies. The report based on 35 replies from 31 countries was published separately (Udo, 1976).

The major events during this term of tenure were two symposia held in New Zealand and USSR, respectively. The Symposium on Population at Microscale, organized by the Commission in Palmerston North, New Zealand, December 5-9, 1974 in conjunction with the IGU Regional Conference, attracted 70 persons from 11 countries, including 20 invited participants (IGU Bulletin, 1975). The programme was arranged by a committee including J. W. Webb, (chairman), M. Chapman, J. I. Clarke, L.A. Kosinski and R.J. Pryor. The last was also responsible for local arrangements. The symposium was funded by the Population Council, the United Nations Fund for Population Activities and the Population Geography Trust Fund.

Its principal themes were as follows :

- (A) Micro-demography and analysis of individual and small group spatial behaviour, with special concern for the following topics :
  - (a) problems of survey and data collection at the local level among families, households, small groups, and minorities;
  - (b) The behavioural approach to the study of populations (decisions on migration, to have or to limit a family, to change jobs, etc.);

- (c) Perception of the human and physical environment and how it relates to spatial population behaviour;
  - (d) Temporal-spatial models for the micro-study of populations;
  - (e) Normative, analytical, and descriptive models of small populations;
- (B) Analysis of small populations and population sub-units. In this theme a distinction was made between small populations within larger populations and populations of small areal units within larger areal units. Topics included :
- (a) Demographic distinctiveness of sub-populations, whether ethnic, cultural, or socio-economic;
  - (b) Demographic interaction between minorities and majorities;
  - (c) Demographic distinctiveness of small area populations, the effects and problems of areal aggregation of data;
  - (d) Theoretical study of population isolates and its relevance to work on isolated populations of all sizes;
  - (e) Demographic instability of small populations;
  - (f) Socio-economic spatial organization of small populations.

The proceedings of the symposium were published in a brochure (Kosinski and Webb, 1975) and a major volume based on selected materials presented at the symposium appeared at a later date (Kosinski and Webb, 1976). Distribution of this volume was not as good as the other books sponsored by the Commission and it generated only five reviews.

The Symposium on Perspectives on Macro-Populations was held at Minsk, July 22-26, 1976, prior to the 23rd International Geographical Congress. The programme was arranged by J.W. Webb. It consisted of three days of field-trips. Local Organization Committee included F.M. Ivanov, Y.I. Kozlov, B.S. Khorev, P.G. Lyutko, A.K. Legchilov and T. Baklanova. Two publications were prepared by the local organizers—abstracts of 40 papers and a guide to fieldtrips (Kozlov et al., 1976; Polskiy et al., 1976). The meeting was attended by 64 persons from 13 countries (including 41 from USSR). The Commission was unable to obtain and direct financial assistance. However, two participants were funded by the Population Geography Trust Fund.

The following major themes were suggested as foci for papers :

- (A) Metropolitan populations;
- (B) Regional populations;
- (C) Multi-national populations.

A variety of topics were discussed :

- (a) relationships between demographic processes and other variables analyzed from different disciplinary perspectives;
- (b) demographic regionalization;
- (c) spatial population forecasts for planners;
- (d) the use of behavioural approach in the study of reproductive attitudes and of migration;
- (e) trends in fertility and mortality in both urban and rural areas;
- (f) socio-economic consequences of aging;

- (g) employment trends among different groups of population ;
- (h) urbanization trends and metropolitan expansion;
- (i) migration processes.

The diversity of papers made it difficult to make use of them in a cohesive volume and consequently only a brochure of proceedings resulted from this meeting (Kosinski and Webb, 1977). The Soviet hosts were planning to publish full results of the meeting but the idea was subsequently abandoned.

During the period 1972-76 the Commission maintained close contacts with a number of organisations, including the International Union for the Scientific Study of Population (particularly its committees on Urbanization and Population Redistribution headed successively by S. Goldstein and P.A. Morrison, and on Teaching of Demography and Training in Population headed by D.V. Glass); Committee for International Coordination of National Research in Demography (CICRED); UN Population Division; UNESCO; United Nations Fund for Population Activities (UNFPA); Population Council; Commonwealth Geographical Bureau and Population Geography Trust Fund. These contacts resulted in participation by Commission members in meetings and publications sponsored by these organizations, the exchange of publications and the funding Commission activities (IGU Bulletin, 1974, 1975 and 1976).

Information on different activities of the Commission appeared regularly in the IGU Bulletin (seven notes); internal communication within the Commission was assured

through Memos (fifteen) and Documents (thirteen). Corresponding members and other interested persons and agencies were kept informed by the Circulars (fifteen published). Five brochures and two books were published during this term of office. The final report appeared in a separate brochure (Kosinski, 1976) and in abbreviated form in the IGU Bulletin (1976).

#### 1976-1980

The General Assembly of the IGU meeting in Moscow in 1976 appointed a new commission under the same name and chairmanship (IGU Bulletin, 1977). In accordance with the new statutes adopted in Moscow the number of members has increased and a position of vice-chairman was created. Membership changed considerably.

The following tasks were outlined for the Commission :

- (1) "To further and develop the geographic study of population ;
- (2) Organize an international project on important aspects of applied population geography, specifically on population redistribution;
- (3) Co-operate with international organizations concerned with population studies" (IGU Bulletin, 1977).

Population redistribution and government policies influencing the spatial patterns of population became the main theme. The topic had been discussed at earlier meetings and it was not unexpected that more attention should now be paid to it (Pryor and Kosinski, 1978).

The first expanded meeting of the Commission in which 27 persons participated



(including four regular members) was held in Mexico City in August 1977 on the occasion of the Conference of the International Union for the Scientific Study of Population in which a number of geographers actively participated. The result of this meeting was a comprehensive plan of further activities (IGU Bulletin, 1978) and four major symposia.

A Symposium on Population Redistribution in Africa was held at Zaria, Nigeria from July 25-30, 1978 prior to the IGU Regional Conference in Lagos, Nigeria. J. I. Clarke was responsible for the programme and A.K. Medugbon in cooperation with M.J. Mortimore and J.M. Baba coordinated local arrangements. The symposium consisted of three days of meetings and one day of an expertly organized field trip to the Anchau resettlement scheme. After the termination of the symposium some participants chose to travel by bus from Zaria to Lagos, a distance over 1000 km. guided by M. J. Mortimore and K. Ologe.

The Commission was able to obtain generous financial support from the International Development Research Centre (IDRC), the United Nations Fund for Population Activities (UNFPA), U.K. Ministry of Overseas Development (ODM) and the Commonwealth Geographic Bureau and most of the 41 participants from 17 countries were fully or partially funded.

The sessions focused on four themes :

- (A) General problems of population redistribution and related policies;
- (B) Migration in Africa ;
- (C) Redistribution of population in Africa;

- (D) Redistribution of population in other parts of the world.

Proceedings of the conference have been published (Clarke and Kosinski, 1978) and major volume including a selection from 39 papers presented in Zaria as well as some additional contributions was submitted for commercial publication. It is expected to appear in 1981 (Clarke and Kosinski, 1981 ?).

During the Zaria symposium a special session was devoted to a debate on the desirability and feasibility of a major long-term research project on population redistribution in Africa. A small task force was established led by A. Mondjannagni (subsequently replaced by A. Adepaju) to enquire into the possibility of such a venture. The report of this task force is still pending.

The second Symposium on Policies of Population Redistribution in Developed Countries was organized in Oulu, Finland, from August 23-27, 1978, immediately before the IUSSP held its regional conference in Helsinki. It included three days of sessions and one day of fieldtrip to Tornio/Haparanda in the Finnish-Swedish border zone. J. W. Webb was the programme chairman and A. Naukkarinen served as a local organizer. The meeting was held simultaneously with the seminar of the IUSSP Committee on Urbanization and Population Redistribution. Forty-five participants from 22 countries were registered at both Oulu meetings.

Twenty two papers presented to the Commission symposium were divided in two categories - (a) theoretical constructs,

policies and policy instruments, and (b) population redistribution policies and their implementations - case studies. Most examples concerned the developed countries of Europe, North America and Australia.

A brochure of proceedings has been published (Kosinski, Naukkarinen and Webb, 1978) and a special volume based on selected papers is scheduled to appear in the near future (Webb, Naukkarinen and Kosinski, 1981 ?).

The third in the series of seminars was held in Karachi, Pakistan, from January 5-10, 1980 with the theme of Development and Population Redistribution in South Asia. The local organizing committee was headed by M. I. Siddiqi and K. M. Elahi served as programme chairman. The major topics for discussion were :

- (A) National, regional, and local policies of population redistribution;
- (B) Population redistribution aspects of national development plans;
- (C) Development projects and population redistribution;
- (D) Settlement of refugees.

In spite of political tension in the area caused by invasion of Afghanistan, 27 participants from 8 countries participated in the four-day meeting and two days of fieldtrips. All of the 29 papers submitted, concerned the five countries of the region-Bangladesh, India, Nepal, Pakistan and Sri Lanka. Thanks to the generosity of UNFPA and International Social Science Council (ISSC) nearly all participants were fully funded. The brochure of pro-

ceedings is available (Elahi, Kosinski and Siddiqi, 1980) and a major book based on papers submitted is also planned (Kosinski and Elahi, 1981).

A symposium on Migration and Population Redistribution in Asia and the Pacific was held in Nagoya, Japan between August 27-30, 1980 prior to the International Geographical Congress in Tokyo. It was organized by H. Kawabe with the assistance of S. Ogasawara. The meeting was attended by 34 participants from 18 countries. The major topics of discussion were as follows :

- (A) Changing patterns and urban concentration of population;
- (B) Migration and circulation;
- (C) Population redistribution aspects of national plans and development projects.

Some papers selected from 21 presented to the Symposium are expected to be published in a special issue of *Population Geography*.

The Commission has kept in touch with other organizations interested in policies of population redistribution and its chairman has participated in several relevant meetings : New Approaches to Migration in the Context of Urbanization-IUSSP Committee on Urbanization and Population Redistribution, Bellagio, Italy 1978 (IGU Bulletin, 1979); Redistribution of Population, Centro Latinoamericano de Demografia (CELADE), Santiago, Chile, 1978; Internal Migration and Development, Latin American Social Science Council (CLACSO) and EI Colegio de Mexico, Cuernavaca, Mexico, 1978 (IGU Bulletin,



1979); Planned Population Redistribution, UNFPA, Singapore, 1979; Impact of Current Population Trends on Europe's Cities and Regions, Council of Europe, Strasbourg, France, 1979 (IGU Bulletin, 1980).

In addition to population redistribution as the principal theme for the present term, the Commission embarked upon another project in cooperation with the IGU Commission on Geographical Education. Discussions with UNESCO indicated that there was a perceived need to increase the population content in teaching of various subjects, including geography. An ad hoc working group consisting of seven persons from both commissions met in Edmonton, Canada in November 1978 to "consider the feasibility of and plan projects on population education". The meeting was funded by UNESCO. Two projects proposed by the group met with the positive response of UNESCO in Paris but no funds were allotted to them. These projects called for an international effort which would result in development of (i) population education units for social studies (POPEDUSS) and/or (ii) population education posters (POPEDART). Further negotiations with UNFPA carried out by J. P. Stoltman, who has assumed the responsibility of a coordinator of an intercommission working group, resulted in a grant which will be used to sponsor further work in this area during 1981-82.

The Commission was also involved in a number of other exchanges and cooperative projects. Geographers connected with the Commission have participated actively in conferences and seminars organized by IUSSP (IGU Bulletin, 1978 and 1979),

Institute for Life (IGU Bulletin, 1980) and Council of Europe (IGU Bulletin, 1980).

Cooperation with other IGU bodies was not limited to the Commission on Geographical Education. Preparations began in 1978 to organize a symposium on the Northern Edge of the Ecumene: Historical Perspectives on Settling in Extreme Conditions, to be held in September 1981 in Canada. It will be cosponsored by the IGU Working Group on Historical changes in Spatial Organization with D. Wood as the local organizer.

The interest in terminology often expressed in the past has resulted in closer consultation with the IGU Commission on International Geographical Terminology on subjects related to terms on population study.

The Commission's system of internal communication introduced in previous term has been expanded. Twenty one Memos with thirty three Documents enclosed were sent to Commission members. In addition eight Newsletters were circulated among some 200 corresponding members, interested individuals and institutions. Seven brochures have been published by the Commission and three fully edited books submitted to the commercial publishers. The commission was frequently approached for its publications and the brochures are listed in standard bibliographic sources. The report of the Commission for 1976-80 has appeared in the IGU Bulletin (1980) and an expanded version has appeared in a separate brochure (Kosinski, 1980). Documents generated by the Commission during

1972-1980 have been deposited with the archives of the University of Alberta, Edmonton, Canada.

### Conclusions

The tenacious interest of geographers in population has resulted in special commissions of the IGU during most of the last five decades and continuously since 1956. There have been various major themes-world population map, population pressure upon resources in developing countries, internal migration, population and scale, redistribution of population and population education have been emphasized by the consecutive commissions.

Three different chairmen and 20 regular members participated in the work of commissions during the last twenty years, ensuring both continuity and necessary change (Table 2). Their involvement in various activities has varied over time (Table 3). The Commission was never able to recruit members whose interest and activity were comparable. Fortunately, in addition to regular members, there have been numerous corresponding members who have been very helpful and whose geographic distribution became more global.

The style of work has not only reflected the changing attitudes of chairmen and members but also responded to existing situations. In the 1950s and 1960s the emphasis was on meetings of relatively small groups of experts to discuss in great detail methodological and technical problems which would later result in sets of recommendations (William-Olsson, 1963). In the mid-1960s the Commission was able to obtain its first major grant to sponsor an international symposium and larger funded

meetings have become a dominant feature in the 1970s. Meetings and symposia have increasingly been held in the Third World countries. Publication activity has increased over time and during the last two terms included series of internal memos as well as an irregular Newsletter, brochures and books.

The Commission can initiate certain programmes and activities but their implementation depends on the interest of individual scholars and the means to sponsor them. Only rarely have grants been sufficient to support selected participants who could be requested to prepare specific contributions. More often the funds were allotted too late or were not available and the Commission has had to rely on voluntary contributions which understandably have been less focused. The late decisions of funding agencies and difficulties with transfers of funds have presented serious problems on two or three occasions, and have reduced the effectiveness of fairly large subsidies in the order \$20 - 40,000. Some cooperation was developed with other IGU Commissions and working groups. This partnership which concentrated on very specific themes is worth maintaining.

The Commission developed fruitful contacts with many international agencies. Working cooperation with the IUSSP Committee on Urbanization and Population Redistribution headed in turn by S. Goldstein and P.A. Morrison has been particularly fruitful. The commission became a member of the Committee for International Cooperation in National Research in Demography, located in Paris, and acquired access to their publications

Table 2

## Meetings and Symposia Organized by the Population Commissions during 1964-1980

| 1964-68   | 1968-72   | 1972-76   | 1976-80   |
|---|---|---|---|
| Meeting in Belgrade, Yugoslavia in August-September 1965  | Meeting in London, England in September, 1969   | Meeting in Montreal, Canada in August 1972  | Meeting in Mexico-City, Mexico in August, 1977  |
| *Meeting in Warsaw, Poland in May, 1966   | Meeting in Edmonton, Canada in July-August, 1972 and a Symposium on Internal Migration 0Δ | Meeting in Liege, Belgium in August, 1973++   | Meeting in Zaria, Nigeria in July, 1978 and a Symposium on Population Redistribution in Africa 0+Δ                              |
| *Meeting in State College, USA in November, 1966  |   | Meeting in Palmerston North, New Zealand in December, 1974 and a Symposium on Population at Micro-Scale 0+Δ | Meeting in Oulu, Finland in August, 1978 and a Symposium on Policies of Population Redistribution in Developed Countries 0+Δ    |
| Meeting in State College, USA in September, 1967 and a Symposium on Population Pressure on Physical and Social Resources in Developing Lands 0Δ |   | Meeting in Minsk, USSR in July, 1976 and a Symposium on Perspectives on Macropopulations 0++                | *Meeting in Edmonton, Canada in November, 1978 and a Conference of a Working Group on Population Education 0                    |
| *Meeting in State College, USA in April, 1968   |   |   | Meeting in Karachi, Pakistan in January, 1980 and a Symposium on Development and Population Redistribution in South Asia 0+Δ    |
|   |   |   | *Meeting in Durham, England in May, 1980  |
|   |   |   | Meeting in Nagoya, Japan in August 1980 and a Symposium, on Migration and Population Redistribution in Asia and the Pacific 0+Δ |

- Meetings of working teams consisting of some members of the commission only
- 0 Working papers were prepared for the meeting
- + Special brochures were published before or after the meeting
- Δ Major publication resulted from the symposium

Source: Archives of the IGU Commission on Population Geography

Table 3  
 Participation in Various Meetings, Symposia and Projects by the Members of the Commissions, 1964-80

| Members        | Meetings and projects |          | Belgrade 1965 | Warsaw 1966 | State College 1966 | State College 1967 | State College 1968 | London 1969 | Edmonton 1972 | Montreal 1972 | *World Atlas 1973 | *Pop. Geography 1973 | Liege 1973 | Palmerston N. 1974 | *Applied P.G. 1975 | Minsk 1976 | Mexico C. 1977 | Zaria 1978 | Oulu 1978 | Edmonton 1978 | Karachi 1980 | Durham 1980 | Nagoya 1980 |
|----------------|-----------------------|----------|---------------|-------------|--------------------|--------------------|--------------------|-------------|---------------|---------------|-------------------|----------------------|------------|--------------------|--------------------|------------|----------------|------------|-----------|---------------|--------------|-------------|-------------|
|                | Members               | projects |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Clarke         |                       |          | ✓             |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Elahi          |                       |          |               |             |                    | ✓                  |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Gosal          |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Gutierrez      |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Hansen         |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Herrera        |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Kawabe         |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Kiuchi         |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Kosinski       |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Mondjannagni   |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Ominde         |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Pokshishevskii |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Prothero       |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Pryor          |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Sandru         |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Sen Gupta      |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Udo            |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Vorobyev       |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Webb           |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |
| Zelinsky       |                       |          |               |             |                    |                    |                    |             |               |               |                   |                      |            |                    |                    |            |                |            |           |               |              |             |             |

Source : Archives of the IGU Commission on Population Geography  
 \* Projects carried out by correspondence



and programmes. Some symposia of the Commission were organized in conjunction with meetings by these organizations, particularly IUSSP. This practice increased the interdisciplinary visibility of our field and at the same time provided our members with an opportunity to participate in these major events.

In the mid-1970s two or three projects were carried out by correspondence. It seems that this type of activity could be fruitfully revived. The Commission has never developed training activities, successfully introduced by other IGU commissions, which under the category of technical assistance training programmes could attract international funds. This type of activity could consist of workshops, preparation of teaching units and teaching aids. The IGU Commission on Population Geography always acted as one body even if various activities were coordinated by individual members. No attempts have been made to develop a network of regional or national sub-commissions which have existed in other IGU Commissions.

Although the chairman and some members were involved in the IGU congresses, the cooperation between the Commission and organizers of the appropriate sessions of the main congresses or regional conferences could be closer. The Commission held special symposia during two recent regional meetings of the IGU (New Zealand and Nigeria). In either case our symposia were the largest of all events associated with these meetings and as such deeply appreciated by the organizers. This practice, which increases the profile of population geography among geographers, is worth maintaining.

These suggestions may be considered by those who guide the population activities of geographers in the future. Keeping in mind the importance of the problem and the keen interest of the world geographers there is no doubt that such activities will continue. The IGU General Assembly in Tokyo meeting in September 1980 followed the recommendations of the Executive committee and created another Commission on Population Geography headed by J.I. Clarke, U.K.

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# RURAL-URBAN DIFFERENTIAL IN SIZE OF THE HOUSEHOLD IN INDIA

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A household in the Indian census is a group of persons who commonly live together and would take their meals from a common kitchen unless the exigencies of work prevented them from doing so (Census of India, 1971): Based on the principle of co-residence, it is a demographic unit composed of related or unrelated persons who share some physically or socially defined space for everyday life (Curson, 1978). It must have a common kitchen as the nucleus as per requirements of the Indian census. A family, by comparison, is a social unit based on marriage and united by ties of kinship (Clarke, 1972). Although household is not necessarily a family but in the Indian context the two are almost the same. It is not surprising that a tendency to use words 'family and household' inter-changeably still persists in the Indian sociological literature (Shah, 1973).

Size and composition are the two dimensions of a household. The censuses normally provide data only on the size of the household. Information on composition of households (number of families/generations in the household, sex-age structure of

members of the household and relationship of each member to head of the household) is generally not given, particularly in the Indian census publications. Hence any study of the households based on census data has to confine itself to the aspect of size alone.

The present paper intends to examine the regional aspects of rural-urban differential in size of the Indian household. The 1971 census data for all the 356 districts in the country have been analysed for this purpose.

The Indian census is reputed for a high degree of accuracy and while working on data provided by it one is always on sure grounds. The household, being the primary unit of enumeration, should be subject to a minimum possible degree of error. A discrepancy may arise in a few cases where a joint family living in the same house may get split into two or more households but may get enumerated as one unit. This signifies that the actual number of households may be slightly more than the recorded and average size of the household marginally smaller than the computed.

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\* The authors are grateful to Professor Gurdev Singh Gosal, Chairman, Department of Geography, Panjab University, Chandigarh for his critical comments and useful suggestions for improvement of this paper. They also thank Mr. O. P. Sarna of the same department for his help in preparing the maps.



The rural and urban areas probably do not differ in this regard and the impact of this error on the differential may be negligible.

Urban family behaviour has always been somewhat different from rural and the difference is not to be found only in the modern era (Goode, 1963). The basic hypothesis is that the rural household would be distinctly larger than the urban household. This premise is based on the assumptions that the incidence of joint families would be greater in rural areas than in urban; rural population would be less keen on limiting their families than the urban; and formation rate of new small families through migration would be higher in urban places than in rural areas. It is also envisaged that proportion of the single married/unmarried persons living alone would be higher in urban areas than in the rural. Hence the factors of family organisation, fertility level, migration behaviour and marital status would work in a manner which makes the rural households bigger than the urban.

Rural-urban differential in size of the household can be construed as an index to the relative level of modernisation of traditional societies. A higher differential would indicate that the urban society has moved distinctly ahead of the rural in imbibing the modern trends in family formation and regulation. A small differential, on the other hand, would reflect that urban places of the region retain a high degree of rural life style. This hypothesis subsumes that the rate of change in urban places would be faster than that in rural areas of developing countries.

It is often suggested in the light of the

western experience that rural-urban differential historically tends to bear a close relation to the degree of urbanisation (Gibbs, 1961). It will be at its minimum during early stage of urbanisation, would get pronounced with acceleration in urbanisation and would again become low at a high level of urbanisation. Accordingly rural-urban differential in size of the household would be minimum at low as well as high level of urbanisation and would be maximum in the transitional phase.

Rural-urban differential would, of course, find a strong association with the nature of urbanisation defined in terms of its stage and economic base. Regions with rather traditional urbanisation, manifested in a high proportion of urban population in primary activities, household industries and trade, are likely to have large urban households comparable to those in rural areas. The resultant rural-urban differential would be small. On the other hand, regions with industry-based modern urbanisation would have relatively small urban households and consequently the differential would be large, notwithstanding some decrease in size of the rural household also under the impact of urbanisation.

Differences in family organisation within rural societies have their own bearing on differential. In areas with subsistence agricultural economies, joint ownership of land and close dependence on it help keep joint families. By comparison, in areas with commercial agriculture, economic basis for joint families is weakened and many of them split into nuclear making the average size of the rural household



small (Mandelbaum, 1972). This may not be accompanied by subdivision of agricultural land. The social household breaks but the economic household remains intact. Accordingly rural-urban differential in size of the household is likely to be larger in the former than in the latter type of areas.

As such, the differential would ultimately depend upon the combined effect of the nature of urbanisation and type of rural economy in different areas. In the context of developing countries, the differential would be small in regions characterised by traditional urbanisation and largely subsistence rural economy and large in areas experiencing rapid industrial urbanisation, accompanied by only a gradual change in rural economy.

#### **Size of the Household in India and other Countries**

Average size of the household in India, 5.46 persons in 1971, was one of the largest in the world (Krishan, 1980). The world average was 4.54 persons; 5.33 persons in developing countries and 3.54 persons in developed countries (United Nations, 1972). The average household size was less than 4 persons in practically all the developed countries and more than 5 in most of the developing countries. African countries made an exception with generally 4 to 5 persons per household. Within the developed world, northwestern Europe recorded the smallest, Anglo-America and Oceania moderate and southern and eastern Europe relatively large size of the household. In the developing realm, the Arab and east Asian countries recorded the largest, south Asian countries a moderate and Latin

American countries the smallest size of the household in a strictly comparative sense.

Regional pattern of rural-urban differential in size of the household did not conform to that of household size. The differential was the largest in the Latin American countries, relatively large in the developed realm, insignificant or even negative in the Muslim world and marginal in most of the remaining developing countries (Table 1).

#### **Rural-Urban Differential in India**

One of the salient revelations of the Indian census data was that there was not much to distinguish between the average size of the rural household (5.52 persons) and the urban household (5.23 persons). As many as 45.21 per cent of the households in India had 6 or more persons each. The figure for rural areas (45.51) was only marginally higher than that for urban areas (43.98 persons). Households with 2 persons each accounted for 8.62 per cent in rural areas and 9.90 per cent in urban areas. Likewise, the two areas differed only slightly in terms of percentage of households with 1, 3, 4 or 5 persons (Table 2). Size of the household in more than one-third of the cities (places with a population of at least 100,000) was larger than the average size of the rural household in India. It was an interesting commentary on the level of modernisation of big urban places in the country.

It seems that the incidence of joint families in urban areas was almost as high as in rural areas, an observation which has been earlier supported by several sample studies (Shah, 1973). Small joint family is

Table 1

**Average Size of Rural and Urban Households and Rural-Urban Differential in  
Size of the Household in Some Select Countries**

| Name of the country | Year        | Persons per household in |             |             | Rural-urban differential (in persons) |
|---------------------|-------------|--------------------------|-------------|-------------|---------------------------------------|
|                     |             | All areas                | Rural areas | Urban areas |                                       |
| Chile               | 1960        | 5.39                     | 5.97        | 5.16        | + 0.81                                |
| Argentina           | 1960        | 3.70                     | 4.26        | 3.54        | + 0.72                                |
| Japan               | 1965        | 3.96                     | 4.45        | 3.77        | + 0.68                                |
| Brazil              | 1960        | 5.13                     | 5.43        | 4.82        | + 0.61                                |
| Canada              | 1966        | 3.75                     | 4.14        | 3.62        | + 0.52                                |
| Panama              | 1960        | 4.68                     | 4.90        | 4.41        | + 0.49                                |
| Mexico              | 1962        | 5.51                     | 5.75        | 5.30        | + 0.45                                |
| Israel              | 1966        | 3.68                     | 4.04        | 3.61        | + 0.43                                |
| United States       | 1960        | 3.29                     | 3.57        | 3.18        | + 0.39                                |
| France              | 1962        | 3.11                     | 3.32        | 3.00        | + 0.32                                |
| Australia           | 1966        | 3.47                     | 3.72        | 3.42        | + 0.30                                |
| <b>India</b>        | <b>1971</b> | <b>5.46</b>              | <b>5.52</b> | <b>5.23</b> | <b>+ 0.29</b>                         |
| Sweden              | 1965        | 2.74                     | 2.97        | 2.69        | + 0.28                                |
| Republic of Korea   | 1960        | 5.56                     | 5.63        | 5.38        | + 0.25                                |
| Iran                | 1966        | 4.95                     | 4.98        | 4.92        | + 0.06                                |
| Pakistan            | 1960        | 5.39                     | 5.38        | 5.48        | - 0.10                                |
| Syria               | 1961        | 5.93                     | 5.87        | 6.04        | - 0.17                                |

Source : Calculated from United Nations, *Demographic Year Book 1968*, Department of Economic and Social Affairs, New York, pp. 323-330.



Table 2

## India : Distribution of the Households by Number of Persons, 1971

| Type of area | Percentage of households with |           |           |           |           |                    |                               |
|--------------|-------------------------------|-----------|-----------|-----------|-----------|--------------------|-------------------------------|
|              | 1 person                      | 2 persons | 3 persons | 4 persons | 5 persons | 6 and more persons | Unspecified number of persons |
| All areas    | 5.50                          | 8.87      | 11.24     | 14.11     | 14.98     | 45.21              | 0.09                          |
| Rural areas  | 5.15                          | 8.62      | 11.20     | 14.22     | 15.24     | 45.51              | 0.06                          |
| Urban areas  | 6.92                          | 9.90      | 11.40     | 13.69     | 13.93     | 43.98              | 0.18                          |

Source : Census of India, 1971, *Housing Tables, India, Part IV B*, Registrar General and Census Commissioner, New Delhi, p. 225.

now the most typical form of family life amongst the middle and upper middle urban classes in India (Ross, 1973). Some change is, of course, taking place and the gap between size of the rural and urban households has been widening. The differential was 0.20 persons in 1951, 0.24 in 1961 and 0.29 in 1971.

### Spatial Patterns

In spite of a small differential in average size of the rural and urban households in India, there were striking regional variations in this regard. Among 341 districts (the remaining 15 districts out of 356 in all were either entirely rural or urban and data for Sikkim were not available), 28 districts had their rural household size bigger than the urban by 1+persons, 68 districts recorded a difference of 0.50 to 0.99 persons and 135 districts of less than 0.50 persons. The urban household was bigger than the rural in no less than 110 districts.

The differential ranged from +1.97 persons in Mandi district (rural household

5.45 persons and urban household 3.48 persons) of Himachal Pradesh to -1.11 persons in Bahraich district (rural household 4.68 persons and urban household 5.79 persons) of Uttar Pradesh. The construction of a large new town of Sundernagar in the former district and recent agricultural colonisation of a part of the latter explained the unusual smallness of the urban households in Mandi district and of rural households in Bahraich district. The scatter of the differential was obviously large. Keeping in view the national average of 0.29 persons, different parts of India were grouped into the following three categories (Map 1) :

- A. Areas with distinctly larger rural households than urban households (differential 0.5 persons and above)
- B. Areas with marginally larger rural households than urban households (differential less than 0.5 persons)
- C. Areas with larger urban households than rural households.

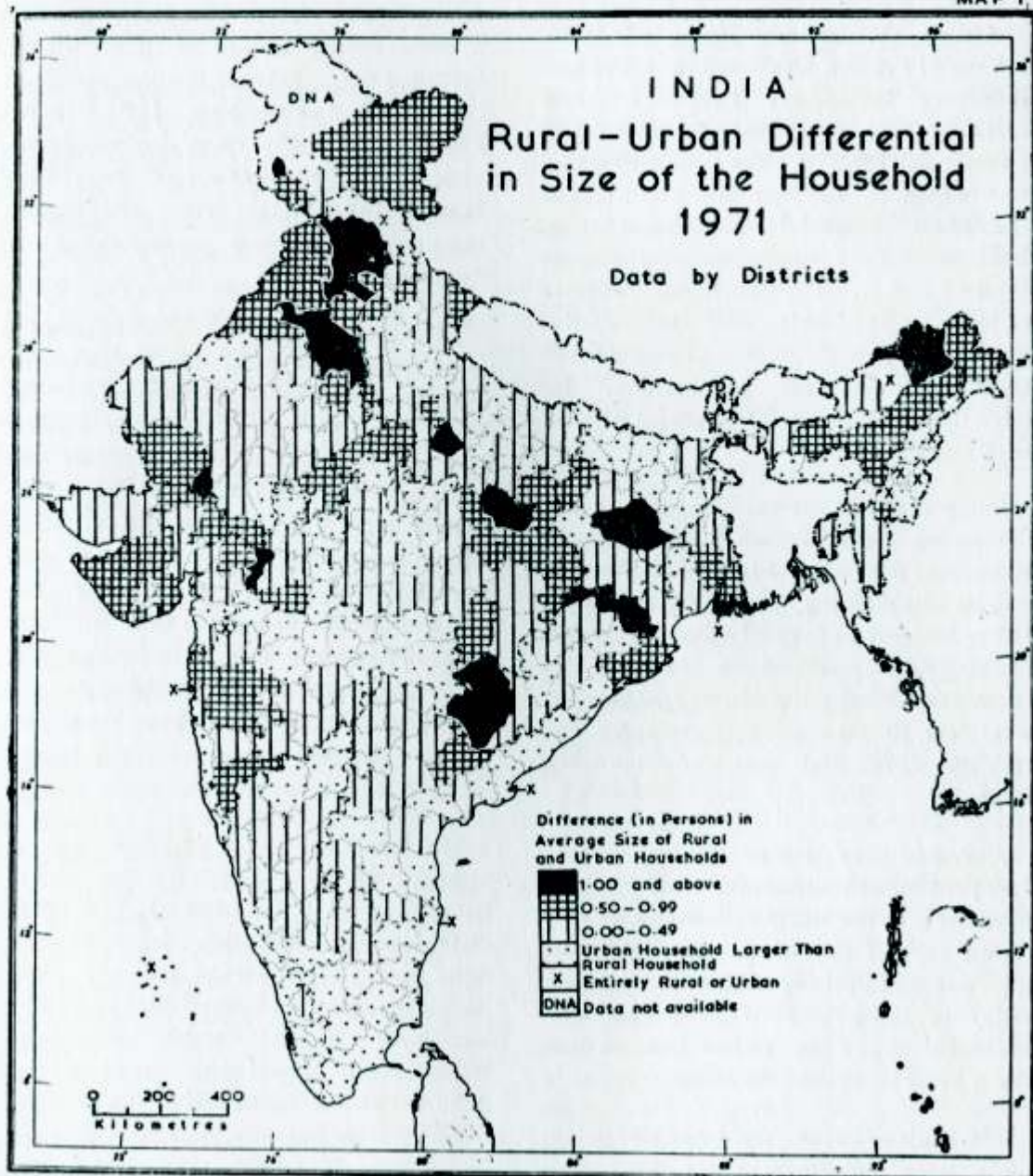
Table 3  
**India : Average Size and Rural-Urban Differential in Size of the Household by States, 1971**

| Name of the state/<br>union territory | Number of persons per household in |                |                | Rural-urban<br>differential<br>(in persons) |
|---------------------------------------|------------------------------------|----------------|----------------|---|
|                                       | All<br>areas                       | Rural<br>areas | Urban<br>areas |   |
| <b>States</b>                         |                                    |                |                |   |
| Himachal Pradesh                      | 5.29                               | 5.42           | 4.03           | +1.39                                       |
| Haryana                               | 6.29                               | 6.54           | 5.32           | +1.22                                       |
| Punjab                                | 5.87                               | 6.07           | 5.31           | +0.76                                       |
| West Bengal                           | 5.50                               | 5.65           | 5.10           | +0.55                                       |
| Assam                                 | 5.96                               | 6.01           | 5.49           | +0.52                                       |
| Maharashtra                           | 5.34                               | 5.51           | 5.02           | +0.49                                       |
| Orissa                                | 5.24                               | 5.28           | 4.85           | +0.43                                       |
| Bihar                                 | 5.73                               | 5.76           | 5.44           | +0.32                                       |
| Gujarat                               | 5.70                               | 5.78           | 5.49           | +0.29                                       |
| Madhya Pradesh                        | 5.38                               | 5.43           | 5.16           | +0.27                                       |
| Uttar Pradesh                         | 5.56                               | 5.59           | 5.37           | +0.22                                       |
| Rajasthan                             | 5.72                               | 5.76           | 5.56           | +0.20                                       |
| Karnataka                             | 5.59                               | 5.63           | 5.45           | +0.18                                       |
| Tripura                               | 5.70                               | 5.71           | 5.67           | +0.04                                       |
| Meghalaya                             | 4.90                               | 4.90           | 4.94           | -0.04                                       |
| Andhra Pradesh                        | 4.90                               | 4.89           | 4.97           | -0.08                                       |
| Nagaland                              | 4.96                               | 4.95           | 5.09           | -0.14                                       |
| Tamil Nadu                            | 4.79                               | 4.70           | 5.02           | -0.32                                       |
| Jammu and Kashmir                     | 6.05                               | 5.98           | 6.37           | -0.39                                       |
| Kerala                                | 6.03                               | 5.96           | 6.39           | -0.43                                       |
| Manipur                               | 5.88                               | 5.81           | 6.31           | -0.50                                       |
| Sikkim                                | Data not available                 |                |                |   |
| <b>Union Territories</b>              |                                    |                |                |   |
| Delhi                                 | 5.10                               | 6.08           | 5.00           | +1.08                                       |
| Arunachal Pradesh                     | 4.94                               | 4.98           | 4.13           | +0.85                                       |
| Chandigarh                            | 4.31                               | 4.66           | 4.27           | +0.39                                       |
| Andaman and Nicobar Islands           | 4.84                               | 4.93           | 4.58           | +0.35                                       |
| Mizoram                               | 6.52                               | 6.55           | 6.33           | +0.22                                       |
| Goa, Daman and Diu                    | 5.17                               | 5.11           | 5.37           | -0.26                                       |
| Pondicherry                           | 5.19                               | 4.98           | 5.51           | -0.53                                       |
| Lakshadweep                           | 5.99                               | 5.99           | —              | —   |
| Dadra and Nagar Haveli                | 5.49                               | 5.49           | —              | —   |

Source : Census of India, 1971 *General Population Tables, Series I — India Part V-A (i)*, Registrar General and Census Commissioner, New Delhi, p. 51.



MAP 1



### A. Areas with distinctly larger rural households than urban households

Among the various states of India, Himachal Pradesh was noted for the largest difference in average size of its rural (5.42 persons) and urban (4.03 persons) households (Table 3). The large differential was related to an unusually small size of the urban household; size of rural household being close to the national average (Maps 2 and 3). The functional structure of towns, most of which were administrative centres, along with recency of migration to them explained this phenomenon. Immigration was largely of educated persons with small families.

Immigration to towns in the newly developing areas of the Chambal valley in Rajasthan, Baghelkhand in Madhya Pradesh and its neighbouring areas in Uttar Pradesh led to formation of small urban households of about 4.50 persons on an average. Size of the rural household, about 5.50 persons, was close to the national average. The resultant differential was understandably large.

A disparity in size of the rural (over 5.50 persons) and urban (about 5 persons) households in the highly urbanised Calcutta region as well as in the Bombay-Poona tract was not surprising. Likewise, Damodar valley in Bihar and West Bengal and Mahanadi valley in Orissa had smaller urban households than the rural.

The Punjab-Haryana plain was also noted for a large differential in size of the rural (over 6 persons) and urban (about 5.30 persons) households. The difference in this case was associated more with a

distinctly large size of the rural household explained by a strong tradition of joint family system which historically has been a more salient feature of joint villages (with a joint tenure of land) as previously typical of northwestern India (Baden Powell, 1972). The region's urban community, with predominance of the Punjabi Hindus in service, trade and modern industry, had a lower proportion of joint families.

Saurashtra in Gujarat also recorded a larger size of its rural households (over 6 persons) than that of the urban (5.50 to 6 persons). This was again an area where both the rural and urban households were relatively large but the former were particularly big. The hold of joint family system here was comparable to that in the Punjab-Haryana plain. The northeastern districts of Gujarat as well as their adjoining areas in Rajasthan were also characterized by a large differential mainly due to relatively small size of urban households (about 5 persons) caused by considerable male-selective outmigration.

The Assam valley fell in line by distinguishing itself by a relatively large size of its both rural (6.01 persons) and urban (5.49 persons) households. It experienced rapid growth of population due to a sharp decline in death rate accompanied by a stable high birth rate and sizeable immigration. With a mean annual birth rate of 44.1 per thousand and a death rate of 14.7, Assam recorded a natural increase rate of 29.4 per cent during 1961-70 as compared to 22.2 per cent in India with its mean annual birth of 40.0 per thousand and a death rate of 17.8 during the same period (Mitra, 1978).



A direct consequence of this exceptionally high rate of natural increase was an enlargement of size of the household, more in rural areas than in the urban.

Thus, the areas with large differential in size of the household could be grouped into two categories: (i) those marked by small size of the urban household and (ii) those characterized by distinctly large size of rural household. The first group of areas was distinguished by either recency of urbanisation or by modern urbanisation with emphasis on services and industry. The second group of areas was marked for an exceptionally strong hold of joint family system. Average size of the household was bigger in the former group of areas than in the latter group.

#### **B. Areas with marginally larger rural households than urban households**

The rural household (5 to 6 persons) was only marginally bigger than the urban (5 to 5.50 persons) in most of the interior peninsula, including Telangana, south-western Maharashtra and a large part of Karnataka. The endogamous system of marriages between close kins and within the locality was typical of these areas. Such a marriage pattern mitigated the conflict between mother-in-law and daughter-in-law and thereby strengthened the patrilineal joint family (Gazetteer of India, 1973).

Rural-urban differential in size of the household was small also in large parts of Madhya Pradesh, Rajasthan and Uttar Pradesh where rural households averaged 5 to more than 6 persons and urban households 5 to 6 persons. A traditional

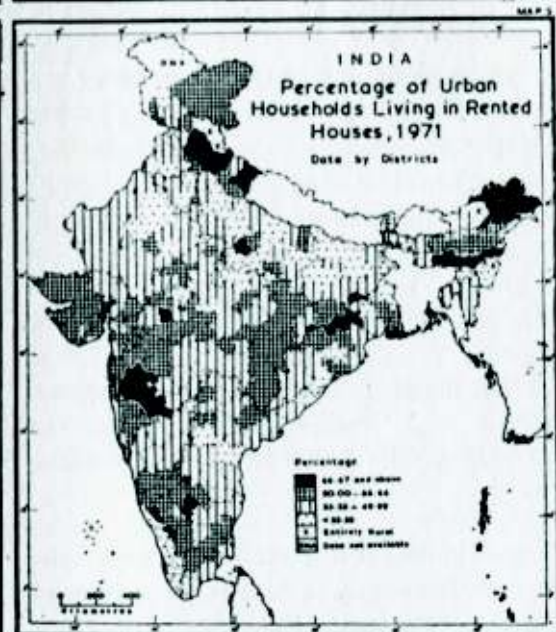
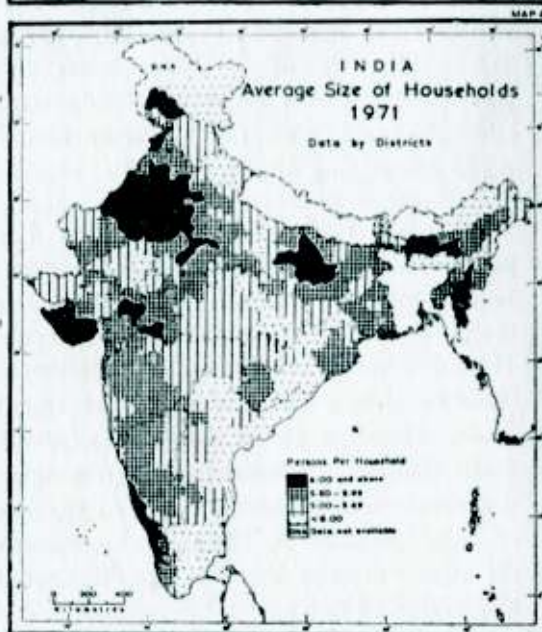
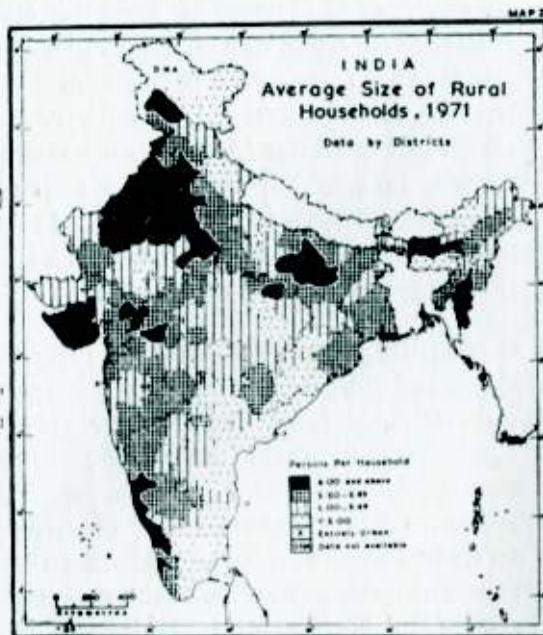
life style, including a premium on joint family system, was common to most of the towns in these regions. Migration to towns was nominal. Hardly one-fourth of the urban households here lived in rented houses. It may be added that in the context of Indian urbanisation, the percentage of urban households living in rented houses was found as a reliable index to incidence of immigration and to relative proportion of nuclear families.

The tribal districts in Madhya Pradesh, Orissa and Bihar too recorded only a small differential. Size of both the rural (about 5 persons) and urban (less than 5 persons) households was smaller than the national average. The predominance of single families among the tribals, coupled with a high mortality rate, explained the small size of the households in their predominantly rural habitats (Vidyarthi, 1977). The smaller size of the urban households was associated with recency of immigration stimulated mainly by growth of their service, trade and mining functions.

Likewise, both the rural (about 4.50 persons) and urban (less than 4 to 5 persons) households were small and showed a marginal difference in the hill districts of Uttar Pradesh. Towns here had experienced sizeable immigration during the recent years, resulting in an addition of many small families. Simultaneously outmigration from rural areas had depleted the size of rural households. Thus, it was under the impact of migration that the differential had narrowed down.

The northern districts of West Bengal, where both the rural (5.50 to 6 persons) and the urban (5 to 6 persons) households







were relatively large, constituted another area of small differential. Towns in this region had retained rural character to a significant degree. They were small in size, with a high proportion of their workers in primary activities, household industries and trade. Not even a single city (a place with a population of at least 100,000) was found over this vast area.

While all the areas discussed above were at a low level of development, the Gujarat plain presented an exception by being relatively developed and simultaneously showing a small difference in size of its rural (about 5.50 persons) and urban (5 to 5.50 persons) households. Size of the household, both rural and urban, was close to the national average. Evidently hold of the tradition, including its stress on joint families, remained strong on the Gujarati community in spite of its economic advancement (Shah, 1973).

It follows that a small differential in size of the rural and urban households was generally typical of the areas at a low level of development. These areas differed among themselves in terms of average size of the household; it being relatively small in tribal regions and moderate to large in other areas with predominantly rural and agricultural populations. The level of urbanisation was low and towns were generally small in size.

### **C. Areas with larger urban households than rural households**

Contrary to the usual, size of the urban households was bigger than the rural in as many as 110 districts. The frequency of such districts was greater in south India

where local endogamy was common in contrast to exogamy in north India (Karve, 1953). Endogamy, as noted earlier, was conducive to persistence of joint family system.

Kerala distinguished itself not only by one of the largest households (6.03 persons) in India but also by bigger size of the urban households (6.39 persons) than that of rural households (5.96 persons). The state has been exceptional in matters of family and kinship. The Nayars and some other castes of this region were matrilineal, and the joint family of several married sisters, their children, their mother and her sisters, occasionally with sojourning husbands, was the common type in both urban and rural areas (Mandelbaum, 1972). The comparatively small size of the rural households was associated with some outmigration.

Tamil Nadu was similar to Kerala in having larger urban households (5.02 persons) than rural households (4.70 persons) but conspicuously differed in having notably smaller households in both rural and urban areas. The high castes and groups in urban places tended to have a larger proportion of joint families and displayed a greater amount of family solidarity (Aiyappan, 1955). By comparison, low castes, among whom nuclear family was a norm, made a high proportion in rural areas and that explained the smallness of the household size there. Rural outmigration was an additional factor contributing to the same. Similarly, the coastal tract and Rayalaseema region in the adjoining Andhra Pradesh had small households on an average and bigger households in urban areas than in the rural.



The northern districts of Maharashtra and Karnataka recorded a larger size of urban households (5 to 5.50 persons) than that of the rural (about 5 persons). A high proportion of rural households here was in agricultural labour who for the most part remained elementary units (Epstein, 1973). At the same time, a relatively high proportion of the Muslim population, living usually in joint families, in towns enlarged the size of urban households. The Muslims were found to be slightly more conservative in respect of joint family living than the non-Muslims even if income, education and other socio-economic variables were controlled and this difference was more noticeable in urban areas than in the rural (Conklin, 1972). Thus, the peculiar composition of rural and urban communities of these areas was responsible for making the urban household bigger than the rural.

Among the north Indian areas, the Kashmir valley was exceptional in having a larger size of the urban household (6 to 7 persons) than of the rural (6 to 6.50 persons). The valley had a predominance of the Muslim population among whom joint family system was strong. The larger size of the urban household than of the rural was explained partly by a higher rate of natural increase in towns and partly by some outmigration from villages.

Northwestern as well as central Uttar Pradesh and north Bihar plain also recorded a larger size of the urban households (5.50 to 6 persons) than of the rural (5 to 6 persons). Many of the towns in these areas were overgrown villages characterised by large households associated

with a high proportion of joint families while outmigration from the countryside caused reduction in size of the rural households. A considerable number of the Muslim families in towns was also responsible for making the urban household large.

Some of the tribal territories like Meghalaya, Nagaland, and Manipur were also noted for a larger size of their urban households over that of the rural. The prevalence of nuclear family system in rural areas kept their households small (about 5 to over 5.50 persons) while the frequency of institutional households, such as defence establishments, convents and boarding houses, raised the urban household size (5 to 6 persons). In Nagaland, for example, nearly one-fourth of the urban population was living in institutional households having about 19 persons on an average. On the whole, these areas were noted for relatively small households.

It follows that urban households were larger than the rural in several parts of south India, Kashmir valley, parts of Ganga plain and some of the tribal territories. Local endogamy was characteristic of many of these areas. Most of them showed considerable concentration of the Muslim population, more in urban than in rural areas. They were also noted for sizeable outmigration from their rural parts.

### Conclusions

Contrary to the popular notion, the urban household in India was only marginally smaller than the rural suggesting a virtual continuation of the traditional family



patterns in urban India as well. Ryan's assertion that urban atomization theory in regard of kinship has proven incorrect seems to be true in case of India (Ryan, 1975). The relative proportion of joint families in urban and rural areas differed only slightly although there were striking regional variations in this regard.

A startling discovery was that size of the urban household was bigger than that of the rural in almost one-third of the districts in India. A majority of these districts was in south India, particularly Kerala, Tamil Nadu and coastal Andhra. The Muslim predominant valley of Kashmir, some of the tribal territories, and areas of sizeable rural outmigration, as in parts of Ganga plain, were also noted for a larger size of the urban household than of the rural. Many of these areas were marked by local endogamy.

By comparison, rural household was distinctly larger than the urban in Punjab-Haryana plain, Assam valley and Saurashtra in Gujarat where the strong hold of joint family system in rural areas contrasted with its weakening in urban places. Urban household was smaller than the rural also in the hill state of Himachal Pradesh, industrially developed regions like Calcutta and Bombay, and some of the newly developing areas including Chambal valley in Rajasthan and Baghelkhand in Madhya Pradesh where migration to towns was usually in small families. Notably the

ethnic composition of urban places in all these areas made some significant departure from that of their rural counterparts.

Several parts of India, such as interior peninsula, large segments of Madhya Pradesh, Rajasthan and Uttar Pradesh and the tribal districts in central India, were noted for only a nominal difference in size of the rural and urban households. Most of these areas were underdeveloped. Not only was the level of their urbanisation low but also the nature of urbanisation was traditional with towns retaining a number of rural attributes.

Rural-urban differential did not show any consistent relationship with size of the household. It was determined more by variations in the urban household size than those in the rural since the regional differences in the former were pronounced. Gibb's hypothesis envisaging low rural-urban differential at both extreme levels of urbanisation and a high differential in the transitional phase was not validated. The nature of urbanisation was found as rather more critical. The differential was high in areas with predominance of manufacturing towns and was low in those with a high frequency of primary activity or artisan towns. Broadly speaking, rural-urban differential was distinctly positive in relatively developed areas, marginal in backward regions with traditional urbanisation and negative in areas marked by local endogamy, irrespective of the level of their development.



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# THE THAI COMMUNITY IN PENINSULAR MALAYSIA\*

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One of the most outstanding features of Peninsular Malaysia's demographic composition is its plurality.<sup>1</sup> This has encouraged considerable study of the Peninsular's component ethnic groups. Such studies, however, have concentrated on the three major ethnic communities, the Malays, Chinese and Indians which in 1970 comprised 99.21 per cent of the total population.<sup>2</sup> With the exception of the Eurasian and the Europeans, other minor Malaysian communities have been relatively infrequently studied.<sup>3</sup> This short article seeks to help redress this oversight by focussing attention on the Malaysian Thai community. The only readily available sources of empirical data on the Thais in Malaysia are the Malayan population censuses. This article utilizes the three censuses conducted since World War II, and

as a consequence the scope of the analysis has been necessarily limited to the data presented in these. The article is, therefore, intended to be primarily introductory, describing the changing characteristics, both demographic and spatial, of the Thai population in Peninsular Malaysia over the past three decades.

## The Malaysian Thais : A Non-Malay Indigenous Community

In Peninsular Malaysia, the Malay community (together with the *Orang Asli*, the Peninsula's aborigines) is officially recognized as being *indigenous*. The other communities in the country are designated as non-indigenous, they having come in large numbers from other parts of Asia, primarily China and India, over the past century and a half.<sup>4</sup> Malaysia's Federal

\* An analysis based on census data, 1947-1970.

1. The 1970 Malaysian Population Census identified some 32 different community groups in Peninsular Malaysia, which for convenience are usually grouped into four broad categories : The Malays, Chinese, Indians and Others.
2. Unless otherwise indicated all data used in this article are from the population censuses of 1947 (del Tufo), 1957 (Fell) and 1970 (Chander).
3. The heterogenous composition of Malaysia's population is such that no single community dominates in terms of numbers. The authors feel that the adjectives 'majority' and 'minority' are inappropriate to describe any community, and so to distinguish the larger from the smaller communities the terms 'major' and 'minor' shall be used in this article.
4. It should, however, be noted that small Chinese and Indian communities have lived continuously in Peninsular Malaysia, primarily Malacca State, since the 15th century when the port of Malacca served, first under the Malacca Sultanate and then the Portuguese, as the region's great entrepot port. Conversely, large numbers of Malays are relatively recent migrants from Indonesia.



Constitution accords special status to the indigenous Malay :

"It shall be the responsibility of the Yang di-Pertuan Agong to safeguard the special position of the Malays . . ." (Article 153, Section 1).

This "special position" for the Malays gives them constitutionally-guaranteed rights to land reservations, quotas in government service and the armed forces, and advantages in respect of religion (their religion Islam is the national religion) and language (*Bahasa Melayu* is the national language). These special rights accrue to them because they are officially recognized as the original inhabitants of the Peninsula.

The Thai community in Peninsular Malaysia is unique in respect of this indigenous-nonindigenous dichotomy. The Thais are indigenous to Southeast Asia, their national territory (present day Thailand) sharing a common boundary with Peninsular Malaysia. Historically the Thais have had long social, cultural, economic and political contacts with the Malays living in the Peninsula. Indeed as recently as the year 1909, the Thais had administrative jurisdiction over three northern States of Peninsular Malaysia: Kelantan, Trengganu and Kedah/Perlis.<sup>5</sup> In that year, under the provisions of the Anglo-Thai Treaty, they gave up this political control and agreed on an international boundary which, however, left a large number of Malays living

in the southern half of the Kra Isthmus which remains to this day in Thai national territory. A number of Thais living on the Peninsular Malaysian side of the newly demarcated international border were similarly "stranded".<sup>6</sup> These, together with their descendants and more recent immigrants from Thailand, comprise Peninsular Malaysia's Thai community.

The Malaysian Thais live interspersed among Malay *kampung* (village) primarily in the districts close to the Thai-Malaysia boundary. Thai settlements usually cluster around a Thai-Buddhist temple complex which serves as an institution integrating and sustaining the Thai community. These temple complexes have recently been described as "brokers of morality" in that they as centres of "a separate ethnic group.....are able to offer social institutions which complement those of their [Malay and Chinese] neighbours" (Golomb, 1978). Gambling, religious services and welfare are among the many services these complexes offer non-Thai Malaysians.

The Malaysian Thais find themselves in an unenviable position. They are indigenous to Southeast Asia. They are physically similar to the Malays. They speak the local Malay dialects fluently but only as a second language. And their Buddhist-Hindu culture has had a major impact on traditional Malay music and dance dramas. Yet by virtue of their mother-tongue (Thai) and religion (Buddhism) they cannot be counted as

5. As a historical gesture the Japanese during their occupation of Malaya from 1941-45 transferred the states of Kelantan, Trengganu, Kedah and Perlis back to Thai jurisdiction. Since World War II, however, Thai jurisdiction over what is now independent Peninsular Malaysia has never been an issue.
6. For a study of the Thai-Malaysian border which examines the many problems which have arisen as a direct consequence of the "arbitrary" drawing of the boundary, see Rachagan and Dorall (1976).



"indigenous" because the Malaysian Constitution specifically identifies the Malay-language speaking and Moslem Malays (Article 153) and the *Orang Asli* (Article 8, Section 5c) as communities to whom special privileges are due.

The Malaysian Thai, therefore, has no recourse to special privilege. He lost that when the colonial-inspired division of territory in 1909 placed him on the "wrong" side of the border. The dilemma facing the Malaysian Thai has been well summarized by anthropologist Golomb (1978) when he wrote :

"Although some of their villages surely date back several centuries and even antedate the founding of many Malay settlements in the area, they are not regarded.....as a fully indigenous people. The Thai villages.....have internalized this alien image in rationalizing their inferior legal status, for they frequently refer to themselves as "outsiders." To a certain degree, their way of life does reflect the "linguistic-religious-moral culture" of the Thai peoples to the north, but there is no evidence that their communal identity derives significantly from association with Thailand as a policy."

### A Minor Community

The Thais comprised just 0.31 per cent of the Peninsular Malaysia's total population in 1970, down sharply from 0.41 per cent two and a half decades earlier (Table 1). The community is, therefore, steadily declining in importance relative to the other Malaysian communities.

Although the Thais comprised some 39 per cent of the "Others" category in

the 1970 Population Census, their 27,114, while out-numbering nearly two to one the European (13,918) and Eurasian (14,007) communities, is not reflected in their social, economic, or even political roles in Malaysia as a whole vis-a-vis these two other minor communities. The reason for this is that while the European, and to lesser extent the Eurasian communities are prominent in the urban, commercial and administrative sectors, the Thais, being overwhelmingly rural and engaged in subsistence farming, maintain as a consequence a very low profile at the national level.

An examination of the Thai community at the state and district levels (Table 1 and Maps A, B, C and D), however, reveals that the community does at the local level achieve some degree of numerical importance. In 1970, the Thais comprised at least one per cent of the total population in the three northern states of Perlis, Kedah and Kelantan which share common boundaries with Thailand. At the district level the local importance of the community becomes more marked. In the three border districts, Sik (6.6 per cent) and Padang Terap (7.8 per cent) in Kedah, and Tumpat (6.0 per cent) in Kelantan, the community becomes a numerically significant minority. In these districts where the ruling Malay political party (United Malay National Organization) and the main Malay opposition (Partai Islam) bitterly contest each other for political ascendancy, the electoral support of the Thai community could mean the difference between victory and defeat.

In general, however, the community's small numbers, and since 1947 decreasing

## PENINSULAR MALAYSIA DISTRIBUTION OF THE THAI COMMUNITY (Data by Districts)

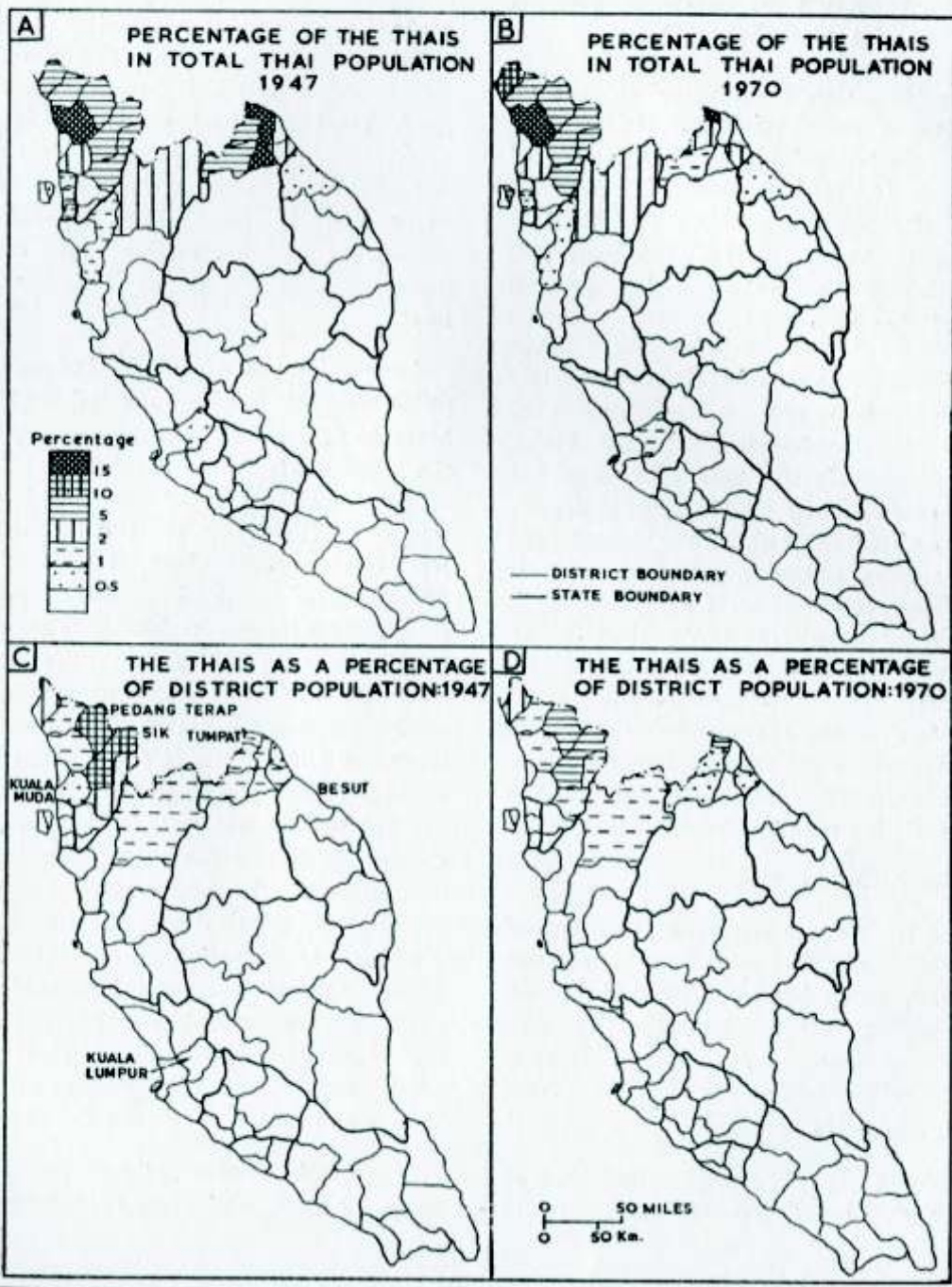




Table I

## Peninsular Malaysia : Distribution of the Thai Population by States, 1947 and 1970

| STATE                  | 1947   |        |      | 1970   |        |      |
|------------------------|--------|--------|------|--------|--------|------|
|                        | (a)    | (b)    | (c)  | (a)    | (b)    | (c)  |
| Johor                  | 36     | 0.18   | *    | 23     | 0.08   | *    |
| Kedah                  | 9,161  | 45.93  | 1.65 | 13,805 | 50.91  | 1.45 |
| Kelantan               | 7,092  | 35.55  | 1.58 | 6,937  | 25.58  | 1.02 |
| Malacca                | 18     | 0.09   | 0.01 | 15     | 0.06   | *    |
| N. Sembilan            | 42     | 0.21   | 0.02 | 30     | 0.11   | 0.01 |
| Pahang                 | 21     | 0.10   | 0.01 | 42     | 0.15   | 0.01 |
| Penang                 | 584    | 2.93   | 0.13 | 1,471  | 5.43   | 0.19 |
| Perak                  | 973    | 4.88   | 0.10 | 1,338  | 4.93   | 0.09 |
| Perlis                 | 1,730  | 8.67   | 2.45 | 2,903  | 10.71  | 2.40 |
| Selangor               | 151    | 0.76   | 0.05 | 385    | 1.42   | 0.02 |
| Trengganu              | 139    | 0.70   | 0.06 | 165    | 0.61   | 0.04 |
| Peninsular<br>Malaysia | 19,947 | 100.00 | 0.41 | 27,114 | 100.00 | 0.31 |

(a) Number of Thais (b) "a" as per cent of total Thai population

(c) "a" as per cent of total State population \* negligible

Sources : del Tufo (1949), Fell (1959) and Chander (1972).

relative importance at both the district and state levels, help explain its general neglect over the years despite a sustained government sponsored programme of rural economic development. In Malaysia, population size is the important determinant of political bargaining power, and an insufficiency of numbers often results in the overlooking of minor communities as

the major groups compete for government attention and a share of the nation's economic wealth. Thai villagers have been described 'politically apathetic and uninformed as to current issues' (Golomb, 1978), and recent attempts within the community to organize themselves into a formal interest group have not had notable success.

Of particular concern then to the Thai community in Malaysia is this trend towards a declining proportion of Thai to total population at the national, state and even district levels in the post-war period. At the state level the community gained relative to total population only in Penang. The reasons for this overall decline in the relative importance of the Thai to other Malaysian communities will now be discussed.

#### Growth : 1947-1970

One of the most striking features of the Malaysian Thai community has been its low rates of population increase when compared to that of the rest of the population. Over the period 1947-1970 the community averaged an annual rate of increase of only 1.43 per cent, compared to a rate of 2.58 per cent for the population as a whole. Although the community's population growth rate has picked up in the 1960's (1.92 per cent per annum) compared to that in the 1950's (0.60 per cent), this great disparity in the growth rates explains why the community is steadily declining in relative importance in Malaysia's plural society framework.

When it is noted that in the same post-war period the population of Thailand increased at an annual rate of 2.96 per cent (National Statistical Office, 1970-1971), two reasons may be considered in explaining the low Thai population growth rates in Peninsular Malaysia. A markedly unbalanced sex ratio is one contributing factor in explaining a low rate of natural increase (Table 2). Over the past two decades the trend has been towards a more balanced sex ratio and though the com-

munity's rate of population growth has improved yet it still remains relatively low.

Table 2

#### Comparative Sex Ratios (Males per 1000 Females)

|                     | 1947 | 1957 | 1970 |
|---------------------|------|------|------|
| Peninsular Malaysia | 990  | 1065 | 1018 |
| Thailand            | 1000 | 1003 | 991  |
| Malaysian Thais     | 941  | 944  | 1027 |

Source : del Tufo (1949), Fell (1959), Chander (1972), and National Statistical Office (1970-71)

The second reason is population out-migration, primarily to neighbouring Thailand. The Thai community in Peninsular Malaysia is primarily located along the Malaysia-Thai border. Religious social and language ties with Thailand, the relative ease of travel across the international boundary, together with the fact that members of this predominantly rural community have difficulty finding employment in Malaysia outside their own villages, combine to encourage emigration of young men in particular to Thailand. Golomb (1978) writes in reference to the Thais living in Kelantan State :

"With the severe shortage of land in the Kelantan Delta area and local Malay Reserve land laws which prohibit the sale of agricultural land to non-Malays, Thai villages..... can no longer support their rapidly growing populations by traditional agricultural means alone. Emigration once an adventurous quest



for better hunting and paddy land, is becoming a matter of economic necessity....."

Thai government land settlement schemes in Southern Thailand have attracted many Malaysian Thai male youths, their immigration being officially actively encouraged. This out-migration trend was particularly strong in the 1950's but the population loss eased marginally in the 1960's because of the deteriorating economic and security situation in South Thailand. The out-migration of young Thais from Peninsular Malaysia's border regions to Thailand continues albeit at a slower pace, and is likely to continue so long as the comparative neglect of the community in Malaysia's Malay-Oriented rural development programme persists.

#### A Spatial Analysis

The distribution of the Thai community in Peninsular Malaysia is characterized by extreme localization. In 1970, over 90 per cent of the Thais lived in the border states, and at the district level this marked preference for those districts contiguous to the border is clearly indicated. These districts, together with those in the southernmost region of Thailand, comprise a zone of overlap between the Thai and Malay populations. The Thais have a long history of subsistence agriculture settlement in those districts. Under the conditions of close juxtaposition one would

expect a considerable degree of social mixing but in the case of Thai-Malay interaction this is not so. "Almost all overt interaction with out group neighbours," writes Golomb (1978), "takes place in contexts where business is being transacted." His study shows that both groups used the same rice milling facilities and hired the same tractors to plough their fields, but "people generally go about their chores, preferring not to linger in chatter" (Golomb, 1978). Religion has been the major barrier which has prevented the Buddhist Thais from assimilating into the Muslim Malay majority. Islam, as practised in Peninsular Malaysia, would require that the Thai spouse becomes a Muslim upon marriage because Islamic laws forbid marriage to persons professing religions other than Islam, Christianity and Judaism. As a result, apart from some marriages contracted between Thai women and Chinese and Indian men, the Thai community has been able because of strongly held Buddhist religious principles to maintain their distinctive ethno-cultural identity.

With minor exceptions, the pattern of Thai population distribution between 1947-1970 has remained relatively stable. Over this period the coefficient of redistribution (calculated using states as the basic unit of measurement) was only 0.10, and that for districts was only marginally greater (0.11).<sup>7</sup> Extreme locational stability is therefore indicated.

7. The coefficient of redistribution is given by the formula :  $\sum_{i=1}^n f_i 100$ ,

where  $\sum f_i$  is the sum of either the positive or negative deviations when the regional percentage population distributions over two periods of time are compared. The coefficient has a range from zero (no redistribution) to one (complete redistribution)



Significant increases in the Thai population suggesting inmigration occurred in only two states, Penang and Selangor. Both states are not traditional areas of Thai border settlement. Here particularly in the period 1957-1970, the foci of attraction was the major cities of Kuala Lumpur and George Town. In the former, the establishment of diplomatic and trading relationships between Thailand and Malaysia were the major factors explaining the recorded inmigration. In Penang, on the other hand, where between 1947-1970 the Thai population more than doubled, the increase has been primarily due to the influx of Thais from Thailand taking advantage of the state's proximity, its free-port status (only recently revoked) and its excellent educational facilities.

Standing in sharp contrast to these increases in the Thai urban population are the continued low rates of increase, and in some cases of numerical decline, in the Thai rural population in the traditional areas of settlement along the Thai-Malaysia border<sup>8</sup>. The heaviest loss was recorded in the state of Kelantan. Its Thai population declined 5.1 per cent between 1947-1957. Shortage of agricultural land in the densely settled Kelantan delta and the inability of Thais to purchase such land, almost all of which is reserved for the Kelantan Malay, was the major factor contributing to this loss. Although the state's Thai community reversed this absolute decrease in numbers in the 1957-1970 period, the very low rate of increase of just 0.24 per cent per annum

is indicative of continued out migration from the state. As a result of Kelantan's losses from among its Thai population, Kedah and Perlis have emerged as the major areas of Thai settlement in Peninsular Malaysia, and Kedah, where in the districts along the border virgin land is still available for agriculture, has emerged as the major state of Thai migration. Indicative of this recent trend in Kedah are the districts of Padang Terap and Baling which, in the period 1957-1970, sharply reversed the trend towards population decline which had characterized the 1950's. The population decline in the early 1950's was a direct result of the law and order problem experienced in these districts through much of the Malayan Emergency (1948-1960), which saw the communists using these districts with impunity. In the 1960's a much improved security situation helped encourage an inflow of Thais into the two districts. It is likely that the reversal in the Thai population trend in the Kuala Muda district experienced in the 1960's is directly related to this easing of tensions, and subsequent repopulation of these two border districts.

The available data also reveal that the southern half of the Peninsula generally experienced an inflow of Thais during 1957-1970. The southern districts of Pahang and those of northern Johore, both pioneer agricultural regions at the time, were the primary recipients of this flow. The chief feature of this movement was that it was rural to rural. The Peninsula's main

8. To estimate population in and out-migration, Thailand's rate of population increase in the two periods under study was used as a crude measure of the rate at which the Malaysian Thai population could be expected to increase under conditions of locational stability. A rate in excess of the expected would suggest in-migration, and a rate less than the expected would suggest out-migration.



cities, Kuala Lumpur and George Town, recorded such low rates of increase of the Thais that out-migration is indicated. During 1957-1970, however, the pattern of in-migration changed, and these two West Coast urban centres, together with the states in which they are located, emerged as major destinations for migrating Thais.<sup>9</sup> Kuala Lumpur district qualifies as a primary area of Thai settlement in this period. All Peninsular Malaysia's states, with the prominent exception of Selangor and Penang, recorded Thai population out-migration in the 1957-1970 period. This is largely the consequence of the problems the traditionally rural Malaysian Thais have had to face because rural development planning is Malay-based. The Thais have been forced to migrate to seek a better life either in Thailand or in the Peninsula's major urban centres.

Population loss from the traditional areas of Thai rural settlement in the Thai-Malaysia border region has been the main feature of the post-war period. A rural to rural drift has been converted in recent years to a rural-urban movement, but the numbers moving into the main cities cannot account for the total loss experienced in many of the Thai settlement areas. Immigration to Thailand is strongly suggested.

### Conclusions

This short analysis of the Malaysian Thai community suggests that there is a continuing stream of out-migration of Malaysian Thais living in the border districts of Peninsular Malaysia to neighbouring Thailand.

Because the Malaysian Thai was trapped on the "wrong-side" of the border when it was demarcated in 1909 he lost the many privileges which would have been his as an indigenous Thai. A distance of only a few miles made the world of difference in many instances. Not enjoying indigenous status in rural Malaysia, and living among Malays who do enjoy the "special privileges" which come with this status has aggravated the marginality of the Thai community. Now not only are the Thais politically, socially marginal but also as the neighbouring Malays benefit from Malaysia's aggressive rural development programmes, they have become increasingly marginal in the economic sense too. And lacking a strong urban presence, something which the European and Eurasian minor communities in Malaysia have, has further hampered their well-being.

As a result of emigration, the relative numerical importance of the Malaysian Thai community in Malaysia's plural society is diminishing. There are indications of a slowly developing trend towards a wider distribution of Thais in Peninsular Malaysia outside their traditional settlement areas. A movement towards the major urban centres is suggested but it seems likely that this movement has been swelled in census statistics by recent arrivals of traders and diplomats, from Thailand. The Malaysian Thai may, however, be expected to remain overwhelmingly rural and concentrated in the border areas of northern Peninsular Malaysia in the foreseeable future.

9. Trengganu seems to emerge as a major region of Thai rural in-migration but on closer examination of the figures involved it is realized that in the districts south of Besut the total number of Thais was only 29 in 1957. Because of the very small numbers involved no significance can yet be attached to the observed trend. Similarly, the patterns observed in other areas of secondary Thai settlement should be treated with caution.

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# THE COLOMBIAN STRATEGY OF URBANISATION : POTENTIAL EFFECTS ON FERTILITY

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Between 1971 and 1974 a unique development strategy was implemented in Colombia. Alone among developing countries, with the possible exception of Singapore, Colombia accepted urban growth as inevitable and even beneficial. Through the construction sector urban employment was generated and rural-urban migration encouraged. Such a strategy was contrary to the advice of the International Labour Office (ILO) which advocated rural development and land fragmentation as a means of retaining labour in the countryside. Since the Colombian strategy ran counter to this recent emphasis on rural development, it did not receive the attention it merits. No definitive evaluation has been made of an urban-oriented strategy for development.

The aim of this paper is to examine one aspect only of the Colombian strategy—its impact on fertility rates. Insufficient data since 1974 preclude vigorous testing but using cross-sectional data for other countries and time series data for Colombia, the paper argues that the Colombian urbanisation strategy should result in a decline in fertility rates. By focussing on one positive externality of urbanisation this paper may prompt a more comprehensive assessment of Colombia's innovative

strategy. Alternative strategies, particularly those that emphasise rural development, tend to be short-run and therefore ignore the fertility issue (Schutjer, 1978)

The point of departure of the paper is a description of the strategy in the context of Colombian urban growth. The second section examines the theoretical and empirical relationship between urbanisation and fertility rates while the third section suggests policy implications.

## 1. Colombian Urbanisation and Metropolitanisation

Like other countries of Latin America, Colombia faces explosive urban growth. With a large population (24 million), a high proportion still to be urbanised (38 per cent were rural in 1975) and a population projected to reach 37 million by the turn of the century, urban growth in Colombia has been classified as "unstable" (United Nations, 1973).

As a basic premise the Colombian strategy of 1971-1974 assumed that urbanisation and urban growth could not be stopped. Its pessimism with respect to the inevitability of rural-urban migration in a "free society" is supported by the

\*The author thanks Dr. Lauchlin Currie for his assistance, and the Canada Council for financial support.

data for Colombia. In 1960, 47 per cent of the Colombia population was urbanised, by 1975 the proportion was 62 per cent, and the drift to the cities appears to be accelerating. The urban population growth rate is almost double of the overall population growth rate. Earlier in the century perhaps one-third of the natural increase in rural population left the countryside, now it is approximately 100 per cent (Berry, 1978). Those who left apparently have benefited from their move. With better education and more urban job opportunities, rural-urban migration should continue to accelerate. One study for Brazil estimates the elasticity of migration at 2.3 (Todaro, 1976).

As a consequence of rapid growth of the larger centres, metropolitanisation appears inevitable (Shaw, 1978). Colombia is fortunate in having an urban structure that approximates the rank-size-rule; thus unlike most Latin American countries it is not dominated by any primate city. Yet Bogota had a population of three hundred thousand in 1938, by 1964 it had grown to more than one and a half million and is projected to reach eight million by 1990. On the average, urban centres over one hundred thousand grew at the annual rate of 8 per cent between 1938 and 1964 compared with 2 per cent for the semi-rural "cabeceras" (Departamento Administrativo Nacional de Estadistics, 1973). The larger centres (those of more than fifty thousand) continued growing faster than small centres, and by 1973 two-thirds of the urban population lived in centres of more than fifty thousand. Less than a quarter of the urban population lived in small centres with a population of less than 20,000 each.

As a second premise the strategy assumed

Table 1

**Colombia : Distribution of Urban Population (in percentage) by Size Category of Urban Centres, 1938—1973**

| Centres by population | 1938  | 1951  | 1964  | 1973  |
|-----------------------|-------|-------|-------|-------|
| Less than 20,000      | 59.2  | 42.3  | 30.5  | 24.7  |
| 20,000-49,999         | 10.4  | 10.7  | 8.4   | 8.8   |
| 50,000 and over       | 30.4  | 47.0  | 61.1  | 66.5  |
| Total                 | 100.0 | 100.0 | 100.0 | 100.0 |

Source : Currie, L. *Resources, Population and Growth*, Bogota, 1978 (mimeo).

that urbanisation could be beneficial to development. It was realised that rural-urban migration could not be stopped and should not be stopped. Among the benefits of urbanisation are land consolidation and large scale farming with its potential technological efficiency. Large farms can take advantage of mechanised agricultural techniques, such as tractorisation, and they can also supply technology which is non-mechanised, such as improved seeds and fertilisers. The result is that labour productivity varies directly with farm size; on large farms is almost ten times that on sub-family farms (World Bank, 1972). A corollary is the higher wage rate on large farms.

Urbanisation has other benefits. It may reduce population growth (since fertility appears to be inversely related to urbanisation) and may stimulate technical innovations. A further benefit is lowering of costs through agglomeration economics. Urban



growth does incur costs but to minimise these costs the strategy envisaged relatively self-contained new high density urban areas on the skirts of the existing major cities. Called "cities within cities" they are designed to benefit from urbanisation economies that accrue to a major metropolis; and yet being self-sufficient to reduce diseconomies, such as traffic congestion. A unique feature is the proposal that all land be publicly owned and all accommodation rented. This is to ensure that capital gains accrue to the government as land-owner. One "city within cities" of 2,000 hectares for half a million inhabitants has been planned and costed for Bogota although it has yet to be fully implemented.

For labour migrating to urban centres the government sought to provide employment in construction. Modern manufacturing does not absorb sufficient labour, and traditional manufacturing and service employment tend to result in under employment and low productivity. The alternative is construction, which is an obvious leading sector. The multipliers are considerable, ranging from a minimum of two for high-income housing to six for low-income housing (Strassman, 1976). Import coefficients are low at less than 25 per cent, and increased income and price elasticity of demand for housing offer the prospect for productivity and higher wages. Moreover construction is labour intensive and requires little skill or education. Other sectors could have been leading sectors, for example car assembly as in Brazil, but their output would not have been as socially desirable as housing (Currie, 1971 and 1974).

The success of the strategy in generating employment (estimated by the ILO at 25

per cent of the urban labour force) and in providing housing (a shortage estimated at half a million units) was considerable. Construction employment in 1973 grew by 18 per cent over 1972 and a further 21 per cent in 1974 (Sintesis Economico, 1977). Throughout 1970-1974 the economy saw almost a million jobs created, a surplus of 160,000 over the increase in the labour force. The rate of unemployment fell from 11.3 per cent in 1969 to 6.8 per cent in 1973. Similarly housing supply increased as 1973 saw the greatest increase in building activity in the history of Colombia. The growth of the construction sector (12 per cent) in 1973 was almost double of the national growth rate (7 per cent). The supply of housing increased by 33 per cent (DANE, 1975 a). Unfortunately the strategy over-estimated supply elasticities of construction materials and food, thereby exacerbated the inflationary impact of the 1973 energy "crisis" (Ridler, forthcoming).

## 2. Urbanisation, Metropolitanisation and Fertility Rates

As in other developing countries, Colombia's population and labour force is growing rapidly. With a population doubling every twenty five years and a labour force every twenty years, Colombia faces one of the highest population growth rates among the developing countries and the authorities have actively sought to reduce its population growth rate. In 1965, birth control programmes were established in the country by the private sector, and two years later were extended when the Ministry of Health officially took control of the programmes (Potter *et al*, 1976). Now there are almost one thousand

government health units providing family planning services, and the number of new acceptors has increased annually. Approximately 1.2 million acceptors have been recruited by the organised sector alone, and this has perhaps doubled again when the commercial sector is included. A study in 1974 showed that over 50 per cent of the married women in Bogota were practising contraception.

This growth in contraceptive usage, concomitantly with the rapid decline in fertility since 1964, can partially be attributed to urbanisation. For the growing usage of contraception (and abortion), in spite of cultural and religious taboos, is explicable only by changes in motivation to have children, and as noted below one of the more important variables in explaining motivational changes is urbanisation, and particularly metropolitanisation (the impact of the largest centres).

The change in motivation to have children can be explained by the socio-economic theory which attributes children with many of the characteristics of consumer and producer goods. Parents "produce" and "consume" children if their benefits to parents exceed costs. Not all benefits and costs are explicitly delineated or quantified, instead they may be fused in an overall decision whether or not to have a child. In that respect the decision-making process is similar to that of other consumer durables such as car or house purchases, and can be represented by supply and demand curves. Of course the decision by parents whether to have a child is different from the decision whether to acquire a house. In the first place there

is greater uncertainty. Parents are not able to see their children before buying, nor can unsatisfactory children be returned or resold. In the second place not all children are planned. Yet for planned children the socio-economic theory appears a plausible explanation of fertility behaviour. Empirically, cross-sectional studies have confirmed the association between socio-economic variables and fertility rates (Schultz, 1976).

The impact of urbanisation on the supply and demand curves for children would be to shift both curves to the left, producing an unambiguous decline in planned fertility rates. This would explain the inverse relationship between urbanisation and fertility rates. Among the variables that would cause a shift to the left of the demand curve are prices of substitutes and complements, and tastes. For example, children's labour on the farm has few urban counterparts, which reduce the benefits of children in an urban environment. A further variable is the price of substitutes for children. Relatively the cost of automobiles and of housing may have increased less rapidly than the cost of child-rearing, and to the extent that these are viewed as substitutes for children, the effect would be to reduce fertility rates. Coincidentally the taste for children may have fallen as potential parents recognise the sacrifices foregone (as for example an automobile or a house).

On the supply side a shift to the left reflects higher costs. Both direct and indirect costs can be expected to increase in an urban rather than a rural environment. Direct costs of child-rearing will increase



in an urban area because accommodation, food and transport all tend to be higher here than in the countryside. Indirect costs reflect the income foregone by the principal child-rearer (usually the woman), if the latter must stay at home. Since access to education in Colombia is greater in cities than in the countryside, and given a direct relationship between income and education, the income foregone will be greatest for the well-educated (and therefore urbanised). Similarly, in an urban area women have greater access to wage employment, further raising indirect costs of child-rearing. Thus access to education and to wage employment in urban areas will tend to supplement the higher direct costs of child-rearing. The result, as families urbanise, will be a leftward shift in the supply curve for children.

Empirically the relationship between urbanisation and fertility rates has seldom been tested. This is partly because urbanisation is correlated with other variables, such as education and knowledge of contraception, and thus the independent influence of urbanisation is difficult to isolate. However, by comparing women of the same educational background, and by attitudinal surveys asking women how many children they want (thus divorcing the issue from contraception), a relationship between fertility and urbanisation can be found. One study for Taiwan used multivariate analysis and found a consistently inverse relationship between urbanisation and ideal number of children (Hermalin, 1976). The ideal number of children varied from as high as 4.1 for rural areas to a low of 3.3 for large cities, with urban townships and small cities having intermediate values.

Thus city women expect fewer children than rural women, although the difference largely disappears for older women. A cross-sectional study of three countries, Morocco, Taiwan and Turkey, also confirmed the inverse relationship between urbanisation and ideal number of children (Bhattacharyya, 1977). In this study the difference did not disappear with the age of the women; the mean ideal number of children for Taiwanese women between 40-44 years ranged from 4.5 for rural residents to 4.0 for urban residents, the same ratio as for women aged 20 to 24. The implication of these studies is that urbanisation is correlated with a substantial reduction in desired fertility rates. This provides some confirmation of the leftward shift of the supply and/or demand curves.

The actual number of children bears a close relationship to the ideal number of children, and here too the rural-urban fertility differential appears. Data from Morocco, Taiwan and Turkey show the actual number of children per woman residing in urban areas below that of their rural counterparts. In Colombia also the differential exists. During the present century until the early 1960s fertility in Colombia remained almost constant, but between the intercensal years of 1964 and 1973 total fertility rates declined sharply, from 7.0 to 4.36. The differential between rural-urban residence appears to have widened. Between 1962 and 1968, for example, while the rural fertility rates decreased only 6 per cent the urban fertility rates decreased by 24 per cent. By 1973 the fertility rate for women residing in rural areas was 6.30, compared with 4.06 for women residing in semi-urban areas.

This differential was confirmed by a 1976 study which found that in Santander the crude birth rate in the rural areas was 71 per cent higher than the urban birth rate (Currie, 1978). The State of Bolivar showed a rural-urban differential almost as large.

Moreover the size of urban area appears to be inversely related to fertility rates. The 1973 census showed a rural fertility rate of 6.30, a semi-urban rate of 4.06 and a metropolitan rate of 3.06. This is indicated in Table 2 where capitals of the department are equivalent to metropolitan

**Table 2**  
**Colombia : Fertility by Size of Urban Centres, 1973**

| Population size     | Number of capitals | Birth rate per thousand women |
|---------------------|--------------------|-------------------------------|
| Higher than 500,000 | 4                  | 26                            |
| 100,000-499,999     | 10                 | 27                            |
| 50,000-99,999       | 6                  | 31                            |
| Less than 50,000    | 2                  | 35                            |
| Total capitals      | 22                 | 27                            |
| Total Urban         |                    | 29                            |
| Total Rural         |                    | 38                            |
| Total for Colombia  |                    | 33                            |

Sources : Departamento Administrativo Nacional de Estadísticas (DANE) *Boletín Mensual de Estadística*, 1976 and Currie, L. *Resources, Population and Growth*, Bogota, 1978.

centres. There is a consistent decline in birth rate with an increase in population size of the urban centres Capitals with more than half a million people have a birth rate one third less than the smaller capitals, and almost 50 per cent less than rural areas. Metropolitanisation appears to affect fertility rates by regions also. The eastern region, which has the highest proportion of its inhabitants living in metropolitan areas, also has the lowest fertility. Other countries also show an inverse relationship between size of urban centres and fertility rates.

Empirically therefore the data appear to confirm the theoretical model of household behaviour. Where multicollinearity can be avoided, the evidence suggests that urbanisation alone is inversely correlated with fertility. Both planned and actual number of children decrease with urbanisation, and the rural-urban differential can be significant. Moreover fertility appears to be related to the size of the urban centre.

### 3. Policy Implications

The policy implications of the Currie strategy follow from the inverse relationship between urbanisation and fertility. By induced migration into urban centres the strategy should indirectly lower fertility rates. This hypothesis is strengthened by studies which show that rural immigrants tend to adopt the fertility norms of the urban areas, in fact that immigrants into urban areas have fertility rates below those of native-born residents. The hypothesis is strengthened if there is metropolitanisation, and if, as apparently in Colombia, migration is by direct and fill-in movements rather than by step migration (Gilbert, 1974).



Concomitantly with urbanisation, education, use of contraception, and participation rates also influence fertility rates, and these variables are directly related to urbanisation and metropolitanisation. Thus a strategy of urbanisation also influences fertility through providing access to education, contraception and employment opportunities. All studies show a consistently inverse relationship between the level of education and fertility rates; estimates of elasticity of fertility with respect to women's education go as high as -1.1, and while rural educational facilities in Colombia have improved they still lag far behind those of urban areas. The level of education of women is considerably lower in rural than in urban areas (DANE, 1975 b). Similarly knowledge, approval and usage of contraception varies directly with urbanisation and also with metropolitanisation. A third variable is the employment opportunities for women; women working outside the house tend to have lower fertility rates. According to the Encuesta Nacional de Fecundidad, the urban fertility rate of working women was lower than that of non-working women by some 50 per cent, and urbanisation appears to influence participation rates. In 1973/1974, for example, the Colombian national participation rate for females aged 20-44 was 27 per cent; in the four largest cities the equivalent rate was 50 per cent.

Given these rural-urban inequalities in educational levels, in contraception usage and in employment opportunities, it is plausible to assume that the Colombian fertility rate should decline as an externality of the urbanisation strategy. Theoretically,

urbanisation and female education and employment should reduce the motivation of having children, empirically as noted these variables appear to have the expected result. Urbanisation by itself appears inversely related to fertility, while female education and employment increase with urbanisation/metropolitanisation and also show an inverse relationship with fertility. Knowledge and usage of contraception increase with urbanisation, and should align the actual number of children with the ideal number.

Of course the ILO strategy with its emphasis on rural development might also influence fertility rates. Rural school children could receive an equal per capita funding for education; at the present time approximately 10 per cent of the primary school budget goes to rural areas even though primary school children in rural areas account for 40 per cent of total enrolment (Berry, 1978). Similarly rural-urban income inequality may have an influence on fertility. The greater the inequality the more impeded will be the trickling down effect of urban values to rural areas, and the slower will rural fertility decline. According to one measure of rural-urban inequality, Colombia's index of 0.71 is high, an indication that modernisation values will percolate very slowly to rural areas. The ILO strategy has the potential of influencing fertility rates by a rural development program designed to lower rural-urban inequalities. This is particularly so in non-frontier areas of Colombia (Merrick, 1978). However differences in employment opportunities mean that the opportunity cost of children in rural areas will be less than in urban

areas, coincidental with the greater benefit of children in rural than urban areas. Thus a rural development program will not lower the desired fertility rate in rural areas to that in urban areas, and the difference in usage of contraception will maintain a differential in actual fertility rates. Thus while a rural development program can lower rural fertility rates it is doubtful if the program can lower the overall fertility rate to that of urban and particularly metropolitan centres. Even in Taiwan, where rural-urban incomes are almost equal, the ideal and the actual number of children is higher in rural than in urban areas.

### Conclusions

Between 1971 and 1974 Colombia undertook an innovative development strategy that encouraged urbanisation. This paper suggests that one of the positive externalities accruing from that strategy should be a reduction in fertility rates (and of population and labour force growth rates), although there is insufficient data since 1974 to confirm the expected result. However inter-country and Colombian time series data show a clear inverse relationship between urbanisation and fertility rates. Thus it is plausible to assume that one of the externalities of the Colombian strategy will be decline in fertility rates.

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# SPATIAL PATTERNS OF SEX RATIO IN SOUTH KONKAN (MAHARASHTRA) 1951 AND 1971

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South Konkan, consisting of the districts of Kolaba and Ratnagiri, lies to the south of Bombay. It has frequently been referred to as a traditional area of outmigration to Bombay (Sita, 1978). Since migration is sex and age selective, it has affected the demographic characteristics of the area. One of the most striking features about South Konkan is the inequality in the number of males and females as is indicated by the fact that the sex ratios (females per thousand males) in Kolaba and Ratnagiri districts are the highest in Maharashtra, 1056 and 1244 respectively. The only other district having a sex ratio of over 1000 is Satara. All other districts have a sex ratio of below 1000. Hence in contrast to the general tendency for male dominance in Maharashtra, females outnumber the males in South Konkan.

Though a high sex ratio is characteristic of South Konkan as a whole, there are bound to be intra-regional variations. Hence an indepth analysis of the spatial variations of sex ratio in South Konkan was undertaken on the basis of the data for all the settlements, three thousand in the region. The analysis was carried out for the census years of 1951 and 1971 for the following reasons :

(i) This would enable one to see if there were some continuing spatial patterns of sex ratio in the area.

(ii) It would also enable an identification of changes, which would throw light on the processes operating in different parts of the region.

(iii) The analysis would help to identify settlements which have consistently high sex ratios. Such settlements could then be taken up for a more detailed study of the socio-economic implications of high sex ratios. Moreover, as Soulsby (1972) has pointed out, there are a number of studies of sex ratios at the national level (Franklin, 1956; Saville, 1957; Clarke, 1960; Gosal, 1961) but very few at the sub-national level (Chandna, 1971; Soulsby, 1972; Krishan and Chandna, 1973). The present study would be in the nature of microregional analysis.

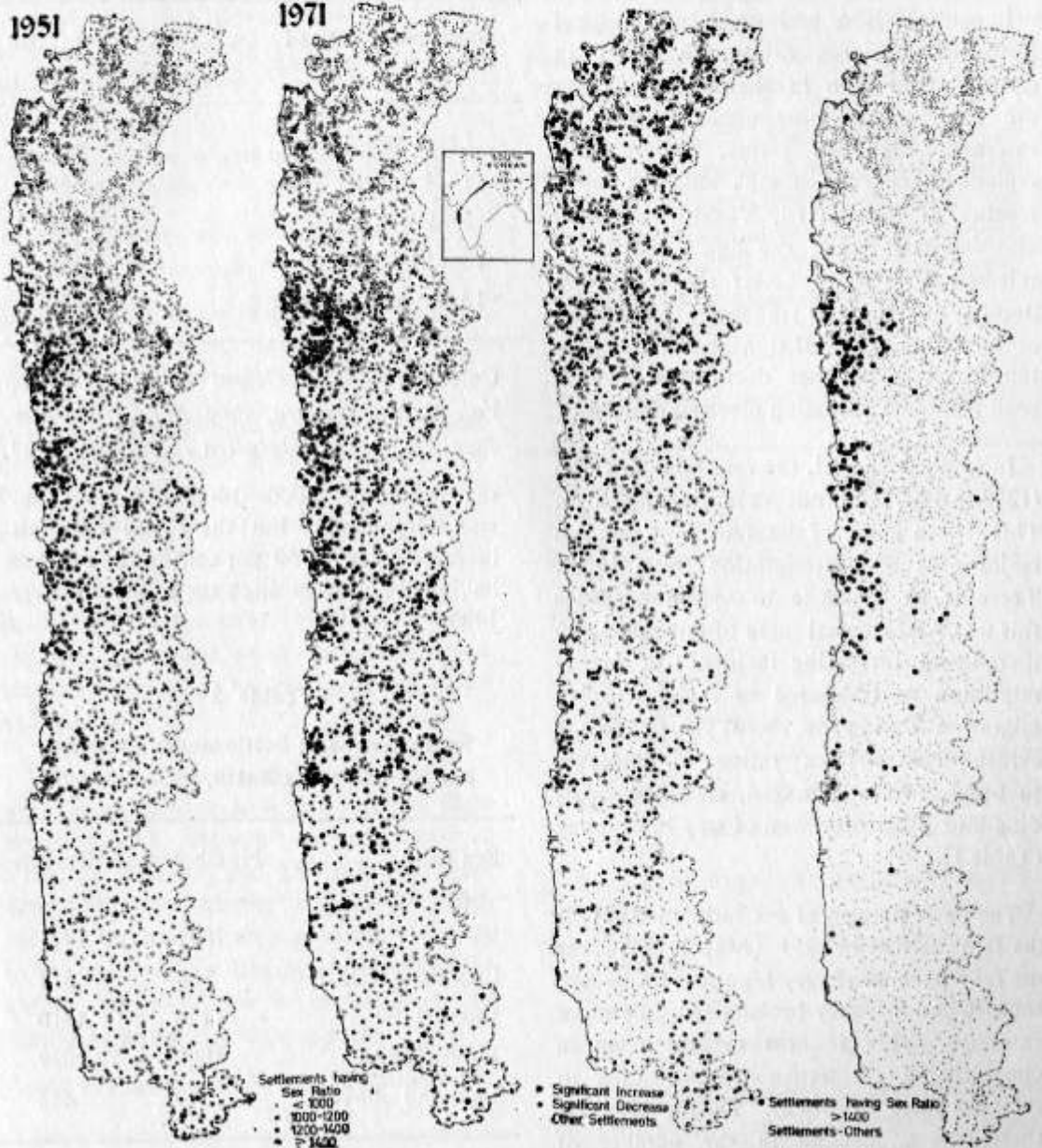
## **Spatial Patterns of Sex Ratio : 1951 & 1971**

In respect of spatial pattern of sex ratio in 1951 a clear difference is evident between north Kolaba and the rest of the region (Map 1). While the sex ratios in north Kolaba are generally low (less than 1000) or medium (1000 to 1200), they are generally high and very high in the rest of the



# SOUTH KONKAN

MAP 1 SEX RATIO OF SETTLEMENTS    MAP 2 CHANGES IN THE SEX RATIO DURING THE PERIOD 1951-1971    MAP 3 SETTLEMENTS HAVING A CONSISTENTLY HIGH SEX RATIO 1951 AND 1971



region. This is because north Kolaba, receives male selective inflow associated with spill-over of industries from Bombay (Sita, 1978).

In south Kolaba and north and central Ratnagiri, the sex ratios are higher in coastal areas than in the interior. There are four clearly pronounced pockets of extremely high sex ratios. These four regions lie near the mouths and the lower reaches of the Savitri, Vashishti, Shastri and Vaghotan rivers; the high sex ratios in this belt are due to better accessibility to Bombay by coastal transport, facilitating outmigration. Coastal transport was important formerly but has declined now with road transport becoming more significant.

In south Ratnagiri, the sex ratios are high (1200 to 1400) but not exceptionally high. This is in spite of the fact that this is a major area of out-migration (Sita, 1980). There is an evidence to suggest that since this was a traditional area of out-migration there is an increasing incidence of family migration as compared to male selective migration during the recent years. This is evident from the sex ratios of migrants to Bombay from Ratnagiri, classified according to their duration of stay in Bombay (Table 1).

The basic pattern of sex ratio in 1971 is the same as that in 1951 (Map 1) However the four pockets of very high sex ratios are accentuated as they become spatially more extensive. This is also evident from a classification of settlements according to their sex ratio (Table 2). During 1951-71, there was a decline in the number of settlements having a sex ratio of less than 1000. The number of settlements having

Table 1  
Sex Ratio of Migrants from  
Ratnagiri to Bombay

| Duration of stay of migrants in Bombay | Sex ratio |
|--|-----------|
| Less than 1 year                       | 869       |
| 1—4 years                              | 639       |
| 5—9 years                              | 558       |
| 10—14 years                            | 458       |
| 15 years and above                     | 439       |

Calculated from *Census of India, 1961, Vol. X, Maharashtra, Part X(I-C), Greater Bombay, Special Migration Tables*, pp. 28-29.

sex ratios of 1000—1400 did not substantially change but there has been an increase of over 50 per cent in the number having abnormally high sex ratios of over 1400.

Table 2  
South Konkan : Settlements Classified  
according to Sex Ratio, 1951 and 1971

| Sex ratio      | Number of settlements |      |
|----------------|-----------------------|------|
|                | 1951                  | 1971 |
| Less than 1000 | 704                   | 572  |
| 1000—1199      | 1226                  | 1210 |
| 1200—1399      | 1060                  | 1039 |
| 1400 and above | 279                   | 448  |

Source : *District Census Handbooks of Kolaba and Ratnagiri for 1951 & 1971*.



**Variation in Sex Ratios : 1951-71**

In order to study the spatial patterns of variation in the sex ratio, the settlements were divided into three groups based on nature and magnitude of change in sex ratio during the period 1951-71. The three groups were :

- (i) Settlements which experienced an increase of sex ratio by 50 or more;
- (ii) Settlements which experienced a decrease of sex ratio by 50 or more; and
- (iii) Settlements in which the sex ratio did not change much, the variation being by a magnitude of less than 50.

The spatial distribution of the settlements distinguished on this basis is indicated in Map 2. It is clear that in north Kolaba many settlements experienced a decline in sex ratio and quite a large number had no appreciable change in sex ratio during the period; only a few experienced an increase. On the other hand, in south Kolaba, there was an increase in sex ratio of most of the settlements.

In Ratnagiri district, the general tendency was for an increase in sex ratio, but there are exceptions. Around Ratnagiri and in Vengurla, Malwan and Devgad, there are extensive areas having settlements which did not experience an appreciable change in sex ratio. This finding corroborates the earlier one that this is probably due to family migration from these areas.

**Areas of Consistently High Sex Ratio**

Based on the above analysis, settlements which consistently had abnormally high sex ratios of over 1400 in both 1951 and 1971 were identified (Map 3). The distribution

of these settlements shows clearly the concentration in the coastal belt, especially near river mouths and along the lower courses of the rivers. The four pockets of settlements near the river mouths, to which reference has been made earlier, stand out very clearly.

An analysis of the demographic and occupational characteristics of the settlements having consistently very high sex ratios brought out some interesting features. The sex ratios in 1971 were abnormally high in many settlements (Table 3).

Table 3

**Sex ratio of Selected Settlements**

| Sex ratio      | Number of settlements |
|----------------|-----------------------|
| 1400 — 1499    | 58                    |
| 1500 — 1599    | 40                    |
| 1600 — 1699    | 33                    |
| 1700 and above | 49                    |

Source : *District Census Handbooks of Kolaba and Ratnagiri, 1971.*

The percentage of workers generally ranged between 30 and 50 per cent. In over two-thirds of these settlements, the proportion of female workers to the total workers is more than 50 per cent and in 22 of the settlements, it is more than 70 per cent.

The analysis brought out that in over 50 per cent of the settlements, 90 to 100 per cent of the workers are engaged in agriculture and the percentage of area cultivated is generally less than 40 per cent. The

density of population is generally less than 0.5 persons per acre and rises to 2 to 3 persons per acre of cultivated land.

### Conclusions

The analysis revealed that the basic features of South Konkan's spatial pattern of sex ratios in 1951 and 1971 were the same; relatively low sex ratios in north Kolaba, high sex ratios in the coastal belt with four areas at river mouths standing out prominently, and medium sex ratios

in south Ratnagiri. The areas of high sex ratio were spatially more extensive in 1971 than in 1951.

The analysis of the change indicated that sex ratios were decreasing in north Kolaba, suggesting in-migration into the area, while there was an increase in sex ratio in south Kolaba in association with male excessive out migration. Surprisingly sex ratios were not increasing in south Ratnagiri, suggesting more of family out-migration from that area.

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# SOME HYPOTHESES ON URBAN GROWTH IN INDIA

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India's urban population increased from 78.9 million in 1961 to 109.1 million in 1971 representing a growth rate of 38.2 per cent. An absolute increase of 30.2 million during 1961-71 was the biggest urban gain for any decade since 1901. Among 2,636 towns/urban agglomerations, two-fifths had recorded, during 1961-71, a rapid growth rate of 30+ per cent and one-sixth a sluggish rate of less than 15 per cent. Towns, individually or as a group, differed distinctly in their growth behaviour.

Several studies (Bose, 1959, 1973 ; Hoselitz, 1959 ; Ahmed, 1965 ; Lall 1965 ; Brush, 1968 ; Lall and Thirtha, 1971 ; Munshi, 1975 ; Chandna, 1976 ; Noble and Dutt, 1977 ; Mishra, 1978 ; Pathak, 1980) have been conducted on Indian urbanisation. These deal with spatial patterns of and trends in Indian urbanisation and also take a note of characteristics of a particular group of urban places, such as cities. None of these attempts a statistical analysis of the explanatory variables of growth towns in India as a whole or in of its various parts. The present paper takes up this task. It hypothesizes that growth behaviour of towns is associated with their size, administrative status, functions, location in respect of road and rail accessibility and distance from the city. It also envisages that growth pattern of towns is related to

level of urbanisation, spacing of towns and agricultural productivity of areas of their location.

In actual discussion the various hypotheses were arranged under the following heads : 1 Size and Urban Growth ; 2 Administrative Status and Urban Growth ; 3 Functions and Urban Growth ; 4 Rail Accessibility and Urban Growth ; 5 Road Accessibility and Urban Growth ; 6 Distance from the City and Urban Growth ; 7 Degree and Rate of Urbanisation ; 8 Density of Towns and Urban Growth ; 9 Agricultural Productivity and Urban Growth.

Data by individual towns and districts were used in working out the relationships. Results were obtained separately for India and its twenty one states. Data for Sikkim state were not available. Nine union territories were treated as one group. The hypotheses were tested for the latest intercensal period of 1961-71.

## 1 Size and Urban Growth

A positive relationship between the size and growth rate of a town was hypothesized. Bigger the town, faster the growth rate. The underlying assumption was that functional growth, of a town, which results in its increased population size, was a self-propelling process.



### Methodology

Places, which enjoyed urban status both in 1961 and 1971, were listed and their population noted for both the censuses. The relationship between size and growth rate was worked out by grouping the towns (on the basis of their population in 1971) in two ways: (a) Towns with a population of 5,000 and less; towns with a population of 10,000 and less; towns with a population of 15,000 and less; and so on. Population of towns in each group was summed up separately for 1971 and 1961 and growth rate calculated to get moving growth rates by size groups of towns (Table 1); (b) Towns with a population of 5,000 and less; towns with a population of 5,001 to 10,000; towns with a population of 10,001 to 15,000; and so on. Population of towns in each group was summed up separately for 1971 and 1961 and growth rate calculated. This gave cumulative growth rates of towns belonging to different size groups (Table 2).

### Discussion

The hypothesis was fully supported by the results. Growth rate increased with an increase in size of town. No sharp break was observed in the town-size after which growth rate suddenly jumped. Rise in growth rates was gradual (Tables 1 and 2). The different states revealed slightly varying patterns. In the more urbanised states like Tamil Nadu, Maharashtra, Karnataka and Gujarat, urban growth rates increased at a decelerating pace with an increase in the size of towns.

An opposite pattern was noted in moderately urbanised states like Punjab, Haryana, Kerala, Assam and Andhra Pradesh where differences in growth rates accelerated with increase in the size of the towns. In less urbanised states like Uttar Pradesh and Bihar, size and growth rate were positively related in the case of towns upto the size of 50,000 after which the relationship became rather erratic. On the whole, the hypothesis stood validated strongly.

### 2 Administrative Status and Urban Growth

It was hypothesized that administrative status and growth rate of towns were positively related: national capital would grow faster than the district headquarters and so on. The assumption was that towns accumulate service, industrial, commercial, transportation and other functions in accordance with their administrative status. Consequently, higher the administrative status, faster the growth.

### Methodology

All the towns were classified into the following five categories on the basis of their administrative status in 1971: (a) national capital, (b) state capitals (c) districts headquarters, (d) tehsil headquarters, and (e) others<sup>1</sup>. The administrative status of a town in 1961 was taken the same as in 1971. A town was designated by its highest administrative status only. If a town was both a district and a tehsil headquarter,

1 Others included towns that had no administrative status or had a status lower than that of a tehsil headquarter.

Table 1

## India : Growth Rate of Towns by Cumulative Population Size Groups, 1961-1971

| Size group<br>(towns with<br>a population<br>of) | Percentage growth rate in |                   |       |       |         |                     |                     |                     |                |        |                   |                  |        |        |                |               |                  |                |
|--|---------------------------|-------------------|-------|-------|---------|---------------------|---------------------|---------------------|----------------|--------|-------------------|------------------|--------|--------|----------------|---------------|------------------|----------------|
|  | India                     | Andhra<br>Pradesh | Assam | Bihar | Gujarat | Jammu               |                     |                     | Karna-<br>taka | Kerala | Madhya<br>Pradesh | Mahara-<br>shtra | Orissa | Punjab | Rajas-<br>than | Tamil<br>Nadu | Uttar<br>Pradesh | West<br>Bengal |
|  |                           |                   |       |       |         | Himachal<br>Pradesh | Himachal<br>Pradesh | Himachal<br>Pradesh |                |        |                   |                  |        |        |                |               |                  |                |
| 1. 0-5,000                                       | 3.2                       | 21.4              | 8.5   | -50.4 | -14.3   | 23.6                | -8.5                | 38.9                | 22.3           | 66.1   | -28.5             | 18.5             | 1.3    | -21.8  | 14.7           | 2.6           | 149.0            | 18.1           |
| 2. 0-10,000                                      | 22.7                      | 25.4              | 32.0  | 15.1  | 17.1    | 26.5                | 1.0                 | 43.5                | 23.0           | 13.3   | 28.6              | 24.0             | 8.2    | 9.5    | 20.4           | 16.8          | 31.5             | 30.5           |
| 3. 0-15,000                                      | 22.9                      | 26.9              | 33.4  | 20.2  | 21.3    | 27.7                | 6.4                 | 40.7                | 23.8           | 0.6    | 28.9              | 15.4             | 21.9   | 12.5   | 24.5           | 19.8          | 29.3             | 27.7           |
| 4. 0-20,000                                      | 25.2                      | 27.8              | 30.6  | 23.9  | 24.7    | 32.7                | 9.0                 | 45.8                | 24.4           | 3.7    | 30.2              | 19.3             | 27.9   | 14.8   | 25.2           | 23.2          | 30.1             | 33.8           |
| 5. 0-25,000                                      | 26.6                      | 27.9              | 40.5  | 26.0  | 25.7    | 34.4                | 24.5                | 42.5                | 25.0           | 15.6   | 31.0              | 20.9             | 35.4   | 12.6   | 25.8           | 24.5          | 29.6             | 31.7           |
| 6. 0-30,000                                      | 27.1                      | 28.0              | 40.0  | 26.6  | 25.2    | 37.9                | —                   | —                   | 26.5           | 14.4   | 31.8              | 23.5             | 37.7   | 14.1   | 25.5           | 25.0          | 29.6             | 30.3           |
| 7. 0-35,000                                      | 28.1                      | 28.4              | 40.8  | 26.1  | 25.3    | 37.6                | —                   | —                   | 27.7           | 18.7   | 36.0              | 24.6             | 39.4   | 13.8   | 26.4           | 28.2          | 29.4             | 30.8           |
| 8. 0-40,000                                      | 28.7                      | 29.3              | 42.1  | 26.6  | 25.4    | 36.1                | 29.5                | —                   | 27.6           | 21.8   | 36.7              | 25.2             | 41.1   | 14.4   | 27.4           | 30.1          | 29.3             | 30.6           |
| 9. 0-45,000                                      | 28.9                      | 30.0              | —     | 25.5  | 25.6    | 34.0                | —                   | —                   | 27.9           | 21.5   | 37.3              | 25.6             | 41.9   | 13.4   | 28.4           | 30.0          | 29.4             | 28.7           |
| 10. 0-50,000                                     | 29.1                      | 30.9              | 43.3  | 25.4  | —       | 34.4                | —                   | —                   | 27.9           | 21.5   | 37.6              | 25.9             | 41.6   | 13.7   | 28.9           | 30.2          | 29.2             | 29.5           |
| 11. 0-55,000                                     | 29.4                      | 30.1              | 44.7  | 25.6  | 26.8    | —                   | —                   | —                   | 29.1           | 21.1   | 38.4              | 25.8             | —      | 13.5   | 28.9           | 29.6          | 29.4             | 30.5           |
| 12. 0-60,000                                     | 29.6                      | 30.5              | 44.9  | 25.5  | 27.1    | 35.4                | 29.6                | —                   | —              | —      | 37.9              | 25.6             | —      | 14.8   | 28.8           | 31.3          | 29.5             | 29.6           |
| 13. 0-65,000                                     | 29.7                      | 30.9              | —     | 24.9  | —       | 35.4                | —                   | —                   | —              | 22.3   | 38.2              | 26.4             | —      | 15.3   | —              | 30.8          | 29.6             | 29.0           |
| 14. 0-70,000                                     | 29.9                      | 30.3              | —     | 24.6  | 27.4    | —                   | —                   | —                   | 29.0           | 21.3   | 38.6              | 26.7             | —      | 15.7   | 29.0           | 30.9          | 29.3             | 30.9           |
| 15. 0-75,000                                     | 30.2                      | —                 | 50.6  | —     | —       | 35.0                | —                   | —                   | 30.6           | —      | —                 | 27.3             | 39.6   | —      | 29.3           | 30.8          | 29.0             | 29.9           |
| 16. 0-80,000                                     | 30.1                      | —                 | —     | 24.6  | 27.2    | —                   | —                   | —                   | 30.5           | —      | —                 | 28.3             | —      | 17.7   | —              | 30.7          | 29.0             | 29.7           |
| 17. 0-85,000                                     | 30.3                      | 30.1              | 49.4  | —     | 27.2    | 38.9                | —                   | —                   | —              | —      | —                 | —                | —      | —      | 30.7           | —             | 28.9             | 29.4           |
| 18. 0-90,000                                     | 30.3                      | 29.7              | —     | 24.5  | —       | 38.9                | —                   | —                   | —              | —      | —                 | 29.0             | —      | —      | —              | 29.9          | 28.7             | 30.2           |
| 19. 0-95,000                                     | 30.4                      | 29.8              | —     | —     | 27.2    | 38.2                | —                   | —                   | —              | —      | —                 | 29.1             | —      | —      | 31.0           | 30.6          | —                | 30.9           |
| 20. 0-100,000                                    | 30.4                      | 30.3              | —     | 24.2  | 27.2    | 38.2                | —                   | —                   | 30.3           | 21.4   | —                 | —                | —      | —      | —              | —             | —                | —              |
| 21. 0-125,000                                    | 30.4                      | 30.4              | —     | 24.4  | 27.9    | 34.9                | —                   | —                   | 29.7           | 22.3   | 38.2              | 29.3             | 49.8   | —      | 31.3           | 29.3          | 27.9             | 30.9           |
| 22. 0-150,000                                    | 30.3                      | —                 | —     | 24.1  | —       | —                   | —                   | —                   | 30.8           | —      | 38.6              | 30.0             | —      | —      | —              | 29.6          | 25.5             | —              |
| 23. 0-175,000                                    | 30.9                      | 33.7              | —     | 23.9  | —       | —                   | —                   | 46.0                | —              | 21.7   | 38.9              | 31.3             | 53.7   | 17.9   | 32.0           | 30.9          | 25.3             | —              |
| 24. 0-200,000                                    | 31.2                      | —                 | —     | —     | —       | 41.3                | —                   | —                   | —              | —      | —                 | 32.4             | —      | —      | —              | 31.2          | 25.0             | 36.8           |
| 25. 0-225,000                                    | 32.1                      | —                 | 49.0  | —     | —       | —                   | —                   | —                   | 31.2           | —      | 39.6              | 34.5             | 51.9   | —      | 33.8           | —             | 25.2             | 37.2           |
| 26. 0-250,000                                    | 32.5                      | —                 | —     | 32.5  | 28.7    | —                   | —                   | —                   | —              | —      | 41.4              | —                | —      | —      | —              | —             | 25.2             | —              |
| 27. 0-500,000                                    | 32.8                      | —                 | —     | —     | 13.4    | —                   | —                   | 45.5                | 33.1           | 33.8   | 42.7              | 34.4             | —      | 23.2   | 32.8           | 32.9          | 27.6             | —              |
| 28. 0-1,000,000                                  | 32.6                      | —                 | —     | —     | —       | —                   | —                   | —                   | —              | —      | 42.9              | 34.5             | —      | —      | 35.6           | 30.0          | 27.2             | —              |
| 29. All towns<br>(including 'million' cities)    | 33.2                      | 35.8              | —     | —     | 19.7    | —                   | —                   | —                   | 34.2           | —      | —                 | 37.1             | —      | —      | —              | 37.3          | 27.6             | 27.3           |

Data for Sikkim were not available.

Table - 2

## India : Growth Rate of Towns by Population Size Groups, 1961-1971

| Size groups<br>(towns with a<br>population of) | Percentage growth rate in |                   |       |       |         |         |                              |                         |                |        |                   |                  |        |        |                |               |                  |               |
|--|---------------------------|-------------------|-------|-------|---------|---------|------------------------------|-------------------------|----------------|--------|-------------------|------------------|--------|--------|----------------|---------------|------------------|---------------|
|  | India                     | Andhra<br>Pradesh | Assam | Bihar | Gujarat | Haryana | Jammu<br>Himachal<br>Pradesh | Jammu<br>and<br>Kashmir | Karna-<br>taka | Kerala | Madhya<br>Pradesh | Maha-<br>rashtra | Orissa | Punjab | Rajas-<br>than | Tamil<br>Nadu | Uttar<br>Pradesh | West<br>Benga |
| 1. 0-5,000                                     | 3.2                       | 21.4              | 8.5   | -50.4 | -14.3   | 23.6    | -8.5                         | 38.9                    | 22.3           | 66.1   | -28.5             | 18.5             | 1.3    | -21.8  | 14.7           | 2.6           | 149.0            | 18.1          |
| 2. 5,001-10,000                                | 3.8                       | 25.4              | 8.5   | -50.4 | -14.3   | 23.6    | -8.5                         | 38.6                    | 22.3           | 66.1   | -28.5             | 28.5             | 1.3    | -21.8  | 14.7           | 2.6           | 149.0            | 18.1          |
| 3. 10,001-15,000                               | 25.1                      | 25.4              | 38.2  | 22.6  | 19.7    | 26.9    | 6.3                          | 45.7                    | 23.2           | 8.4    | 32.9              | 23.7             | 8.4    | 20.2   | 20.8           | 18.0          | 30.1             | 31.4          |
| 4. 15,001-20,000                               | 23.0                      | 28.3              | 34.6  | 22.9  | 23.7    | 29.3    | 29.3                         | 17.5                    | 24.3           | -2.9   | 29.1              | 11.1             | 37.3   | 15.4   | 27.4           | 21.6          | 27.8             | 25.6          |
| 5. 20,001-25,000                               | 30.1                      | 30.9              | 26.0  | 29.5  | 29.8    | 42.7    | 29.3                         | 69.8                    | 25.8           | 8.2    | 35.1              | 27.4             | 46.5   | 24.4   | 26.4           | 28.1          | 31.7             | 46.4          |
| 6. 25,001-30,000                               | 32.9                      | 28.8              | 140.5 | 31.8  | 34.5    | 41.8    | 115.1                        | —                       | 29.0           | 31.5   | 36.8              | 27.5             | 53.9   | -6.8   | 29.4           | 30.5          | 27.9             | 24.3          |
| 7. 30,001-35,000                               | 29.8                      | 28.3              | 37.4  | 31.4  | 23.1    | 74.0    | —                            | 36.3                    | 33.8           | 12.2   | 40.8              | 34.2             | 47.6   | 26.1   | 23.6           | 29.2          | 29.4             | 26.3          |
| 8. 35,001-40,000                               | 35.2                      | 28.6              | 47.5  | 22.5  | 26.1    | 33.0    | —                            | —                       | 41.3           | 47.3   | 76.5              | 35.8             | 59.4   | 12.9   | 32.9           | 57.6          | 28.4             | 36.1          |
| 9. 40,001-45,000                               | 34.9                      | 46.6              | 65.0  | 30.4  | 26.6    | 29.2    | 57.6                         | —                       | 26.4           | 55.0   | 43.0              | 35.7             | 91.5   | 20.7   | 37.2           | 40.1          | 27.5             | 23.2          |
| 10. 45,001-50,000                              | 29.6                      | 13.4              | —     | 16.6  | 26.7    | 20.2    | —                            | —                       | 33.6           | 29.7   | 44.1              | 29.9             | 60.1   | -10.3  | 106.6          | 29.5          | 30.8             | 17.0          |
| 11. 50,001-55,000                              | 33.9                      | 36.6              | 60.8  | 25.6  | —       | 37.7    | —                            | —                       | —              | 14.6   | 41.0              | 51.1             | 36.3   | 23.5   | 49.6           | 32.4          | 25.2             | 39.8          |
| 12. 55,001-60,000                              | 35.1                      | 58.6              | 54.6  | 30.7  | 47.9    | 50.9    | —                            | —                       | 48.0           | 22.1   | 55.4              | 23.3             | —      | 8.6    | 27.4           | 21.5          | 32.0             | 50.0          |
| 13. 60,001-65,000                              | 34.2                      | 39.9              | 46.5  | 19.5  | 33.8    | 36.0    | —                            | —                       | —              | 16.3   | 29.7              | 18.3             | —      | 26.6   | 28.7           | 55.4          | 34.7             | 16.5          |
| 14. 65,001-70,000                              | 31.0                      | 49.2              | —     | 8.2   | 27.2    | —       | —                            | —                       | —              | —      | 46.3              | 42.2             | —      | 29.0   | —              | 27.1          | 33.7             | 25.5          |
| 15. 70,001-75,000                              | 36.4                      | 39.9              | —     | 15.1  | 32.6    | —       | 30.0                         | —                       | —              | 22.4   | 53.6              | 60.6             | 33.0   | —      | 25.0           | 31.1          | 32.1             | 73.7          |
| 16. 75,001-80,000                              | 37.8                      | 8.3               | 183.2 | 32.9  | —       | 32.6    | —                            | —                       | 76.9           | —      | —                 | 71.5             | 19.5   | —      | 40.2           | 29.2          | 23.3             | 14.8          |
| 17. 80,001-85,000                              | 29.6                      | 53.1              | —     | —     | 24.1    | —       | —                            | —                       | 26.0           | 4.4    | —                 | 49.7             | —      | —      | —              | 24.1          | 32.2             | 26.3          |
| 18. 85,001-90,000                              | 34.4                      | 17.1              | 37.9  | 21.0  | 26.8    | —       | —                            | —                       | —              | —      | —                 | —                | —      | —      | —              | 88.9          | —                | 22.0          |
| 19. 90,001-95,000                              | 32.0                      | —                 | —     | —     | —       | 57.5    | —                            | —                       | —              | —      | —                 | 38.7             | 72.1   | —      | —              | —             | 17.7             | 39.0          |
| 20. 95,001-100,000                             | 36.7                      | —                 | —     | 20.3  | 25.3    | 28.7    | —                            | —                       | —              | —      | —                 | 35.6             | —      | —      | 41.0           | 72.6          | —                | 55.3          |
| 21. 100,001-125,000                            | 31.2                      | 27.8              | —     | 26.6  | 28.8    | —       | —                            | —                       | 24.5           | 23.4   | —                 | —                | —      | —      | —              | —             | —                | —             |
| 22. 125,001-150,000                            | 30.6                      | 25.8              | —     | 19.7  | 39.6    | 17.3    | —                            | —                       | 26.4           | 36.5   | 32.4              | 32.6             | 89.9   | —      | 38.0           | 17.2          | 19.1             | 32.4          |
| 23. 150,001-175,000                            | 27.3                      | 33.6              | —     | 19.0  | —       | —       | —                            | —                       | 48.2           | —      | 50.8              | 37.8             | —      | —      | —              | 35.4          | 6.6              | —             |
| 24. 175,001-200,000                            | 46.7                      | 45.2              | —     | —     | —       | —       | —                            | 51.7                    | —              | 15.4   | —                 | 56.3             | 91.0   | 20.3   | 45.1           | 59.4          | 19.2             | —             |
| 25. 200,001-225,000                            | 42.5                      | 32.9              | —     | —     | —       | —       | —                            | —                       | —              | —      | 47.9              | 45.7             | —      | —      | —              | 35.6          | 16.7             | —             |
| 26. 225,001-250,000                            | 53.2                      | —                 | 47.1  | —     | —       | —       | —                            | —                       | 35.3           | —      | 46.0              | 73.0             | 40.6   | —      | 46.9           | —             | 30.1             | —             |
| 27. 250,001-500,000                            | 47.8                      | 54.4              | —     | 56.8  | 35.1    | —       | —                            | —                       | —              | —      | 84.0              | —                | —      | —      | —              | —             | 24.8             | 395.6         |
| 28. 500,001-1,000,000                          | 34.6                      | —                 | —     | —     | -18.1   | —       | —                            | 45.0                    | 46.3           | 60.1   | 51.1              | 34.2             | —      | 33.6   | 27.6           | 43.1          | 43.4             | 43.3          |
| 29. 1,000,000 and<br>over                      | 37.2                      | 43.8              | —     | —     | 44.4    | —       | —                            | —                       | 37.8           | —      | 43.8              | 43.7             | —      | —      | 55.2           | 39.9          | 28.6             | 22.6          |

Note : Data for Sikkim were not available



it was listed as a district headquarter. Taking into account all those towns that existed both in 1961 and 1971, growth rates were calculated for each of the five categories of towns (Table 3).

### Discussion

The hypothesis was fully supported by the findings. The national capital recorded a growth rate of 54.6 per cent, state capitals of 39.9 per cent, district headquarters of 34.2 per cent, tahsil headquarters of 31.1 per cent and others of 27.9 per cent. The difference between the growth rate of national capital and that of state capitals was bigger than the difference between growth rates of state capitals and of district headquarters. Similarly, the difference in the growth rate of state capitals and district headquarters was more than that between growth rates of district and tahsil headquarters. It signifies that growth rate accelerated with a rise in administrative status of towns. The validity of the hypothesis was substantiated equally by the results obtained for various states. The only notable exceptions were Uttar Pradesh and West Bengal, where growth rate of towns did not conform to their administrative status. In West Bengal most of the fast growing industrial centres were without any administrative status. In Uttar Pradesh, the relatively fast growth of hill towns, cantonments and new industrial towns having no administrative status, was responsible for the results contrary to hypothesis.

### 3 Functions and Urban Growth

The Indian census classifies the popu-

lation in any locality into two categories: workers and non-workers. Workers are further grouped into the nine industrial categories which may be rearranged into the following three classes<sup>2</sup>:

| Workers in             | Industrial categories |
|------------------------|-----------------------|
| A Primary Activities   | I, II, III and IV     |
| B Secondary Activities | V(a), V(b) and VI     |
| C Tertiary Activities  | VII, VIII and IX      |

#### A Primary Activities and Urban Growth

In regard of industrial categories grouped as primary activities, it was hypothesized that growth rate of a town was related negatively to percentage of workers in cultivation, agricultural labour, livestock, forestry, fishing and plantations, orchards and allied activities, and positively to percentage of workers in mining and quarrying.

Primary activities, barring mining, provided a little scope for expansion of employment opportunities in towns. There was hardly any incentive for in-migration to towns dominated by primary activities. Rather these towns generally experienced out-migration resulting in a slow growth.

#### B Secondary Activities and Urban Growth

It was hypothesized in this respect that growth rate of a town was related positively to the percentage of workers in manufacturing (other than household industry) and construction, and negatively

2 These included I Cultivators, II Agricultural labourers, III Workers in livestock, forestry, fishing and plantation, orchards and allied activities, IV Workers in mining and quarrying, V Workers in manufacturing, processing, servicing and repairs: (a) Household industry (b) Other than household industry (mainly manufacturing), VI Workers in construction, VII Workers in trade and commerce, VIII Workers in transport, storage and communication, IX Workers in other services.

Table 3

## India : Growth Rate of Towns by Administrative Status, 1961-1971

| India/states/<br>union territories | Growth rate (in percentage) of |                   |                               |                            |        |
|------------------------------------|--------------------------------|-------------------|-------------------------------|----------------------------|--------|
|                                    | National<br>capital            | State<br>capitals | Districts<br>head<br>quarters | Tehsil<br>head<br>quarters | Others |
| India                              | 54.6                           | 39.9              | 34.2                          | 31.1                       | 27.9   |
| Andhra Pradesh                     |                                | 43.8              | 40.2                          | 29.7                       | 33.5   |
| Assam                              |                                | 47.1              | 57.8                          | 42.9                       | 37.3   |
| Bihar                              |                                | 30.4              | 43.8                          | 24.8                       | 31.7   |
| Gujarat                            |                                | *                 | 50.0                          | 26.6                       | 26.6   |
| Haryana                            |                                | 134.7**           | 62.1                          | 32.3                       | 33.2   |
| Himachal Pradesh                   |                                | 30.0              | 26.4                          | 46.4                       | -14.5  |
| Jammu and Kashmir                  |                                | 46.8              | 40.8                          | 40.5                       | 45.6   |
| Karnataka                          |                                | 37.8              | 37.0                          | 32.1                       | 14.6   |
| Kerala                             |                                | 70.8              | 32.2                          | 33.7                       | 21.6   |
| Madhya Pradesh                     |                                | 72.6              | 45.8                          | 31.4                       | 39.9   |
| Maharashtra                        |                                | 43.8              | 41.5                          | 34.4                       | 18.4   |
| Manipur                            |                                | 48.2              | x                             | x                          | x      |
| Meghalaya                          |                                | 19.9              | 61.9                          | x                          | x      |
| Nagaland                           |                                | 197.3             | 182.9                         | 116.0                      | x      |
| Orissa                             |                                | 176.1             | 49.6                          | 33.9                       | 68.4   |
| Punjab                             |                                | 134.7**           | 28.9                          | 26.3                       | 10.3   |
| Rajasthan                          |                                | 55.2              | 39.1                          | 28.5                       | 19.9   |
| Tamil Nadu                         |                                | 63.0              | 33.4                          | 26.4                       | 30.4   |
| Tripura                            |                                | 82.7              | 23.6                          | 22.1                       | 58.6   |
| Uttar Pradesh                      |                                | 24.1              | 29.2                          | 20.8                       | 32.2   |
| West Bengal                        |                                | 22.6              | 30.9                          | 40.5                       | 34.4   |
| Union Territories                  | 54.6                           | 135.2             | 32.2                          | 268.5                      | 123.8  |

\* Gandhinagar, the new capital of Gujarat, emerged as a town in 1971 for the first time.

\*\* Chandigarh, functioned as the capital of both Haryana and Punjab apart from being the headquarters of its own territory.

x No town in this group.

/ Data for Sikkim were not available.

to the percentage of workers in household industries.

Manufacturing industries and construction not only themselves absorb a large number of workers but also generate additional employment in related activities. They are powerful agents in stimulating migration of skilled and unskilled labourers to towns. By contrast, household industries generally fail to create new employment. Many of the household industry workers are rather forced to seek new avenues of employment due to decline in the demand for their products in face of increasing competition from manufactured goods.

### C Tertiary Activities and Urban Growth

It was hypothesized in this respect that Growth rate of a town was related negatively to percentage of workers engaged in trade and commerce, and a positive relationship existed between growth rate of a town and percentage of workers in transport, storage and communication and in other services.

The capacity of trade and commerce to create additional avenues of employment is limited. The opposite holds good in the case of transport and other services, such as administration, education and health, that give rise to many ancilliary activities as well.

### Methodology

The data on industrial classification of workers in each and every town were noted from the *General Population Tables* of various states and union territories. The percentage of workers in different industrial categories to total workers was calculated for every town. The

growth rates of towns were correlated with percentage of workers in individual industrial categories. Table 4 presents the results obtained.

### Discussion : Primary Activities and Urban Growth

The growth rate of towns was found related negatively to percentage of workers in cultivation, agricultural labour, and livestock, fishing, forestry, etc., and positively to percentage of workers in mining and quarrying. Thus, all the hypotheses framed in this regard were validated. The same was supported by the results obtained for various states. A positive relationship between growth rate of a town and percentage of workers in plantation, fishing, forestry, etc. in Kerala, Karnataka, Andhra Pradesh and Jammu and Kashmir, was understandable in the context of importance of these activities in the functional growth of many towns in these states. Likewise the relationship between growth of a town and percentage of workers in mining was positive only in states like Bihar, Madhya Pradesh, Karnataka, Orissa, Tamil Nadu, Kerala and Assam which at least had some mining towns.

### Secondary Activities and Urban Growth

The growth of towns was found having a positive relationship with percentage of workers in manufacturing and in construction while it was related negatively to the percentage of workers in household industries. This confirmed the hypotheses. The same pattern was observed in most of the states. Some exceptions may also be noted :

(a) In less industrialised states of Uttar Pradesh, Rajasthan, Bihar and Assam, the



urban growth was related negatively to percentage of workers in manufacturing. In their case, factors other than industrialization were responsible for the recent urban growth. (b) In less developed states of Bihar, Madhya Pradesh and Rajasthan, a negative relationship was discovered between urban growth and percentage of workers in construction. (c) In states like Himachal Pradesh, Jammu and Kashmir, Punjab and Tripura, a positive relationship was observed between urban growth and percentage of workers in household industries.

#### Tertiary Activities and Urban Growth

In conformity with the hypothesis the growth of a town was found related negatively to percentage of workers in trade and commerce and positively to percentage of workers in transport and other services. Results by states generally supported the findings for the country as a whole.

The following exceptions were outstanding

(a) A positive relationship existed between urban growth and percentage of workers in trade and commerce in agriculturally progressive states like Punjab, Haryana, Kerala, Assam and Andhra Pradesh where agro-based industries came up in many a market town.

(b) A negative relationship existed between urban growth and percentage of workers in transport in less developed states like Jammu and Kashmir, Himachal Pradesh and Bihar. (c) Likewise, a negative rela-

tionship was observed between urban growth and percentage of workers in other services in some of the backward states like Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh and Rajasthan.

Broadly speaking, urban growth was related negatively to percentage of workers in various primary activities, and positively to workers in secondary and tertiary activities. Among the primary activities, mining was exceptional by way of having a positive relationship with urban growth. The secondary activity of household industries and the tertiary activity of trade and commerce showed a negative relationship with urban growth. The efficacy of different economic activities in stimulating urban growth depended on their capacity to generate additional employment and in-migration. The role of services, transport and construction was found more critical than that of manufacturing in promoting urbanisation. Dominance of agriculture or household industries in a town was responsible for its stagnation.

#### 4 Rail Accessibility and Urban Growth

The hypothesis under study may be stated in two parts : towns located on rail routes grew faster than those without links<sup>3</sup>, and towns located on trunk rail lines<sup>4</sup> grew still faster than those on other rail lines. The assumption was that towns on rail routes would enjoy greater

3 Information on rail accessibility of each town was noted from the National Atlas Organisation, *Tourist Atlas of India*, Calcutta, 1974 and *All India Railway Time Table*, April 1971 issue.

4 Railways linking the four dominant metropolitan cities of Bombay, Delhi, Calcutta and Madras with each were adopted as trunk rail lines.

Table 4

India : Relationship between Percentage of Workers in Primary, Secondary and Tertiary Activities and Urban Growth Rate, 1961-1971

| India/states/union territories | Coefficient of correlation in respect of percentage of workers in |                             |  |                                 |                       |   |                   |                          |   |                   |
|--------------------------------|---|-----------------------------|--|---------------------------------|-----------------------|---|-------------------|--------------------------|---|-------------------|
|                                | Culti-<br>vation  | Agricul-<br>tural<br>labour | Livestock,<br>fishing,<br>forestry,<br>planta-<br>tion, etc. | Mining<br>and<br>quarry-<br>ing | Household<br>industry | other than<br>household<br>industry<br>(manufac-<br>turing) | Const-<br>ruction | Trade<br>and<br>commerce | Transport,<br>storage<br>and<br>communi-<br>cations | Other<br>services |
|                                | Primary activities  |                             |  |                                 | Secondary activities  |   |                   | Tertiary activities      |   |                   |
| <b>India</b>                   | -.07*   | -.11*                       | -.02*  | +.09*                           | -.08*                 | -.04*   | +.15*             | -.03*                    | +.10*   | +.06*             |
| Andhra Pradesh                 | -.30*   | -.33*                       | +.01   | -.02                            | -.17*                 | +.11  | +.63*             | +.13                     | +.13  | +.25*             |
| Assam                          | +.10  | -.12                        | -.07   | +.06                            | -.19                  | -.11  | +.09              | +.08                     | +.07  | +.03              |
| Bihar                          | +.06  | -.08                        | .00  | +.04                            | -.06                  | .00   | -.01              | -.03                     | -.04  | +.04              |
| Gujarat                        | -.25*   | -.16*                       | -.11   | -.08                            | -.13                  | +.27*   | +.08              | -.06                     | +.18*   | +.07              |
| Haryana                        | -.29*   | -.21                        | -.28   | -.01                            | -.21                  | +.38  | +.03              | +.06                     | -.13  | +.11              |
| Himachal Pradesh               | +.07  | .00                         | -.04   | -.15                            | +.07                  | -.17  | +.75*             | -.28                     | -.05  | -.55*             |
| Jammu and Kashmir              | -.04  | -.08                        | +.20   | -.06                            | +.37*                 | -.05  | +.08              | -.10                     | -.11  | -.04              |
| Karnataka                      | -.27*   | -.17*                       | .00  | +.12                            | -.13                  | +.41*   | +.10              | +.18*                    | +.25*   | +.10              |
| Kerala                         | -.07  | -.04                        | +.07   | +.16                            | -.16                  | -.08  | +.03              | -.04                     | +.01  | +.06              |
| Madhya Pradesh                 | -.17*   | -.22*                       | -.21*  | +.43*                           | -.14*                 | +.06  | .00               | -.04                     | +.01  | +.02              |
| Maharashtra                    | -.31*   | -.17*                       | -.05   | -.23*                           | -.18*                 | +.22*   | +.23*             | +.19*                    | +.06  | +.29*             |
| Manipur                        | —   | —                           | —  | —                               | —                     | —   | —                 | —                        | —   | —                 |
| Meghalaya                      | +.90*   | -.65                        | -.77   | -.84                            | -.07                  | -.76  | -.21              | -.02                     | -.97*   | +.60              |
| Nagaland                       | +.87  | +.55                        | -1.00*   | -.99*                           | -1.00*                | -.95*   | -.92*             | -.99*                    | -.99*   | +.98*             |
| Orissa                         | +.01  | -.13                        | -.27*  | +.04                            | -.20                  | +.16  | +.14              | -.30*                    | +.22  | +.08              |
| Punjab                         | -.08  | -.07                        | -.10   | -.14                            | +.11                  | +.20*   | +.11              | +.10                     | -.01  | -.16*             |
| Rajasthan                      | +.12  | -.13                        | .00  | -.05                            | -.07                  | -.06  | .00               | -.13                     | -.03  | -.02              |
| Tamil Nadu                     | -.13  | -.14*                       | -.07   | +.79*                           | -.12                  | +.06  | +.05              | -.10                     | +.07  | +.15*             |
| Tripura                        | -.75*   | -.21                        | +.05   | —                               | -.35                  | +.48  | +.84*             | -.21                     | +.36  | +.54              |
| Uttar Pradesh                  | -.06  | -.01                        | -.04   | -.05                            | -.04                  | -.01  | +.19*             | .00                      | +.03  | +.04              |
| West Bengal                    | -.03  | -.01                        | -.02   | -.04                            | -.12                  | +.11  | +.17*             | -.05                     | +.02  | +.03              |
| Union Territories              | -.16  | -.24                        | -.18   | -.02                            | -.26                  | +.15  | -.01              | -.10                     | +.80*   | -.26              |

\* Significant at 95 percent level of confidence.

Data for Sikkim were not available.

Table 5

## India : Growth Rate of Towns by Rail Accessibility Road Accessibility and Distance from a City, 1961-1971

| India/states/<br>union territories | Growth rate (in percentage) of towns |                                   |                        |                                    |                                 |                              | Towns<br>within 50<br>kms. from<br>a city | Towns<br>within 50<br>to 100<br>kms. from<br>a city | Towns<br>more<br>than<br>100 kms.<br>from a<br>city |       |
|------------------------------------|--------------------------------------|-----------------------------------|------------------------|------------------------------------|---------------------------------|------------------------------|---|---|---|-------|
|                                    | Located<br>on trunk<br>rail lines    | Located<br>on other<br>rail lines | Without a<br>rail link | located<br>on national<br>highways | located<br>on state<br>highways | located<br>on other<br>roads |   |   |   |       |
|                                    | Rail accessibility                   |                                   | Road accessibility     |                                    |                                 | Distance from a city         |   |   |   |       |
| India                              | 54.7                                 | 41.0                              | 29.0                   | 52.1                               | 33.1                            | 28.1                         | 47.3                                      | 30.9  | 29.0  | 38.5  |
| Andhra Pradesh                     | 30.5                                 | 40.5                              | 31.6                   | 40.5                               | 31.7                            | 27.0                         | 41.8                                      | 25.8  | 32.0  | 33.6  |
| Assam                              | x                                    | 51.4                              | 39.5                   | 50.4                               | 55.1                            | 38.4                         | 47.1                                      | 24.7  | 45.4  | 52.8  |
| Bihar                              | 40.4                                 | 28.0                              | 26.9                   | 43.3                               | 22.6                            | 21.9                         | 33.3                                      | 40.6  | 25.9  | 26.6  |
| Gujarat                            | 44.7                                 | 24.9                              | 13.6                   | 28.6                               | 25.1                            | 14.4                         | 53.6                                      | 28.7  | 26.5  | 29.0  |
| Haryana                            | 77.7                                 | 38.7                              | 35.0                   | 46.1                               | 34.2                            | 29.4                         | 17.3                                      | 58.6  | 30.9  | 52.1  |
| Himachal Pradesh                   | x                                    | 19.4                              | 28.2                   | 34.5                               | 31.0                            | 08.4                         | —   | 22.7  | 21.8  | 29.0  |
| Jammu and Kashmir                  | x                                    | 54.0                              | 43.3                   | 45.2                               | 50.2                            | 44.6                         | 46.8                                      | 43.8  | 35.6  | 109.2 |
| Karnataka                          | 38.2                                 | 37.5                              | 26.9                   | 38.2                               | 37.1                            | 26.1                         | 41.0                                      | 35.3  | 23.9  | 33.6  |
| Kerala                             | x                                    | 43.4                              | 14.6                   | 40.4                               | 14.1                            | 24.1                         | 51.5                                      | 20.7  | 22.6  | 27.0  |
| Madhya Pradesh                     | 46.7                                 | 43.3                              | 34.1                   | 48.1                               | 40.3                            | 34.7                         | 48.0                                      | 37.8  | 34.1  | 45.8  |
| Maharashtra                        | 41.6                                 | 38.5                              | 27.2                   | 40.4                               | 36.4                            | 27.6                         | 43.1                                      | 23.5  | 31.6  | 38.6  |
| Manipur                            | x                                    | 00.0                              | 48.2                   | 48.2                               | 00.0                            | 00.0                         | 48.2                                      | —   | —   | —     |
| Meghalaya                          | x                                    | 00.0                              | 25.3                   | 21.2                               | 00.0                            | 74.3                         | —   | —   | 21.3  | 74.3  |
| Nagaland                           | x                                    | 116.0                             | 190.7                  | 116.0                              | 197.3                           | 182.9                        | —   | —   | —   | 168.3 |
| Orissa                             | 63.2                                 | 54.0                              | 28.8                   | 62.0                               | 34.9                            | 41.2                         | 71.0                                      | 39.5  | 26.2  | 52.9  |
| Punjab                             | x                                    | 24.0                              | 14.7                   | 27.7                               | 19.9                            | 11.9                         | 31.9                                      | 16.6  | 17.7  | 19.6  |
| Rajasthan                          | 56.2                                 | 35.1                              | 26.2                   | 36.5                               | 40.8                            | 25.4                         | 42.2                                      | 29.3  | 31.0  | 31.7  |
| Tamil Nadu                         | 62.4                                 | 31.7                              | 26.0                   | 42.3                               | 29.7                            | 31.1                         | 42.6                                      | 33.7  | 28.6  | 52.5  |
| Tripura                            | x                                    | 00.0                              | 57.6                   | 00.0                               | 82.7                            | 29.0                         | 57.6                                      | —   | —   | —     |
| Uttar Pradesh                      | 24.8                                 | 28.5                              | 34.3                   | 25.4                               | 32.9                            | 26.9                         | 26.6                                      | 31.8  | 26.2  | 34.8  |
| West Bengal                        | 25.4                                 | 32.1                              | 38.3                   | 26.6                               | 30.5                            | 31.5                         | 25.9                                      | 26.9  | 28.9  | 37.2  |
| Union Territories                  | 54.6                                 | 150.3                             | 66.8                   | 60.6                               | 76.1                            | 110.3                        | 57.8                                      | —   | 125.0   | 87.1  |

x No trunk rail line passed through these states

Data for Sikkim were not available.



connectivity with other areas, and those on trunk rail routes benefit all the more from their direct links with the metropolitan cities.

### Methodology

Towns were grouped into the following three categories : (a) located on trunk rail lines, (b) located on other rail lines, and (c) without link. The cumulative growth rates of towns belonging to three respective categories were calculated. The results are presented in Table 5.

### Discussion

The hypothesis was strongly supported by the findings at national level. Towns on trunk rail routes grew by 54.7 percent, those on other railway routes by 41.0 per cent and those without any rail link by 29.2 per cent. Difference in the growth rates of towns on the trunk lines and of those on other lines was greater than that between the growth rates of towns located on other rail lines and of those without a rail link. Location on a trunk route was crucial to rapid growth of a town. Results at state level also supported the hypotheses by and large. Uttar Pradesh and West Bengal were the two major exceptions. The faster growth of towns without a rail link in Himachal Pradesh and Nagaland was fortuitous since number of rail linked towns was only seven in the former and hardly one in the latter. Differences in growth rate of three categories of towns were small in Maharashtra, Karnataka and Madhya Pradesh where factors other than rail accessibility were more critical in

causing inter-town differences in growth rate.

### 5 Road Accessibility and Urban Growth

A positive relationship was hypothesized between the growth rate of a town and the importance of a road on which it was located. Towns located on national highways, grew faster than those on state highways and the latter faster than those on district or other roads. National highways, maintained by the central government, served as inter-state links. State highways were the arterial roads within a state linking its different parts with each other. Other roads primarily served the areas within a district. Towns located on national highways had greater chances of developing spatial links at national level, those on state highways at state level, and the rest at local level. The potentiality to accumulate functions differed accordingly and so did the rate of their growth.

### Methodology

All the towns were classified on the basis of their road accessibility into the following three categories : (a) located on national highways, (b) located on state highways, and (c) located on other roads. The road accessibility of each town was identified from the *Tourist Atlas of India*. Growth rate of the three groups of towns were computed (Table 5).

### Discussion

The hypothesis was supported by the results obtained for India as a whole.

Towns on national highways recorded the fastest growth rate of 52.1 per cent, followed by towns on state highways that grew by 33.1 per cent. Growth rate of towns on other roads by 28.1 per cent was the lowest. Difference in growth rates of towns in the first and second categories was far greater than that between the growth rates of second and third categories. The same was confirmed by the results obtained at the state level, with the exceptions of Assam, Rajasthan and Jammu and Kashmir where national highways were oriented more to defence rather than to economic needs of the areas. Though growth rate of towns on state highways was generally faster than that of towns on other roads yet Orissa, Kerala and Tamil Nadu were exceptions to it. Towns on other roads grew faster in these states. All the three categories of towns were marked by exceptionally rapid growth in all the union territories taken together. Towns on the national highways grew by 60.6 percent, on state highways by 76.1 percent, and on other roads by 110.3 percent. This was the opposite to the general pattern and reflects a high degree of decentralization of development activities. (Differences in growth rates of the three types of towns were the minimum in the case of relatively urbanised states of Maharashtra, Gujarat, West Bengal and Karnataka.)

Thus, the hierarchical order of a road on which a town was located was one of the determinants of its growth. The efficacy of this factor was less potent in relatively more urbanised areas.

## 6 Distance from a City and Urban Growth

It was hypothesized that the growth rate of relatively small towns was related positively to their distance from a city<sup>5</sup>. Towns in the proximity of cities suffered in their growth due to the urban shadow effect of the latter. On the other hand, the distantly located towns grew comparatively free and fast.

### Methodology

On the map showing the location of each and every town in 1971, 148 cities were marked out. Taking cities as a centre, two concentric circles with a radius of 50 kms and 100 kms (on the scale of the map) were drawn around each of them. It gave three types of areas : (a) within 50 kms from a city; (b) 50 to 100 kms from a city and (c) more than 100 kms from a city. Towns falling in each type of area were noted and their cumulative growth rates calculated for the decade 1961-1971. Growth rates of cities in various states were also worked out. The results are presented in Table 5.

### Discussion

It was found that towns in the zone upto 50 kms from cities grew by 30.9 percent, those in the second zone of 50 to 100 kms by 29.4 percent, and the remaining in the third zone of more than 100 kms by 38.5 percent. The first zone coincided practically with the commuters' zone of the cities and did not

5. A city is a town with a population of at least 100,000.

experience out-migration on any significant scale. Rather it gained from development of satellite towns especially in the case of big cities like Delhi, Bombay and Madras. The urban growth rate in the second zone was only a slightly lower than that in the first zone. Towns in the third zone grew the fastest since they were not subject to competition from cities. The picture with regard to different states was not consistent. Although some states conformed to the all India pattern yet the number of exceptions was not small. On the whole, the hypothesis was not substantiated.

### 7. Degree of Urbanisation and Urban Growth

Degree and rate of urbanisation were hypothesized as having a positive relationship with each other. Higher the percentage of urban population in the total, faster the growth rate of urban population. It was envisaged that urbanisation in a developing country like India normally had a centralizing tendency.

#### Methodology

The percentage of the urban population in the total population was calculated for all the districts of India. These percentage values were correlated with the growth rate of urban population in respective districts. The results, thus obtained, are presented in Table 6.

#### Discussion

(i) The hypothesis stood rejected by the results. A negative correlation was discovered between the degree and rate of urbanisation in India as well as in majority of states. The less urbanised states

like Rajasthan, Madhya Pradesh and Assam, where new developmental activities in the fields of mining, power and transport stimulated the growth of towns in remote areas, were prominent for a strong negative relationship in this regard.

Decentralisation of industries in the relatively urbanised states of West Bengal, Maharashtra, Gujarat and Karnataka also produced a similar pattern. On the contrary, the degree and rate of urbanisation were positively correlated in Bihar and Orissa, where urban growth was faster in mining-industrial districts; Kerala, where industrial-urban development got concentrated in more urbanised districts of Ernakulam and Trivandrum; Punjab, where pace of urbanisation was rapid in the industrial-belt along the Grand Trunk Road; and in Andhra Pradesh, where towns grew fast in the coastal plain with agro-industrial economy.

It follows that the degree and rate of urbanisation had a negative relationship with each other. It pointed to a healthy tendency toward decentralization of urbanisation process.

### 8 Density of Towns and Urban Growth

The density of towns and urban growth rate were hypothesized as negatively related to each other. The assumption was that closely spaced towns competed with each other in attracting migrants. In case towns were widely spaced, each faced less competition from its neighbours.

#### Methodology

The density of towns per 1000 sq kms. of area was calculated for all the



districts of India in 1971. The districtwise growth rate of urban population during 1961-1971 was also noted. The two were correlated with each other. The results are presented in Table 6.

### Discussion

The negative values of correlation for the country as a whole as well as for a number of states confirmed the validity of the hypothesis. The relationship was inverse particularly in the less urbanised states like Assam, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh.

On the contrary, a negative relationship was observed between density and growth of towns in Tamil Nadu and Maharashtra. This was attributed to fast growth of towns in the Madras-Coimbatore and Bombay-Poona industrial belts with already high density of towns.

Likewise, fast growth of closely spaced mining-industrial towns in the Chota Nagpur plateau, and of agro-industrial towns in Andhra coastal districts was represented by a positive relationship between town density and urban growth in Bihar and Andhra Pradesh.

The postulated hypothesis was validated to a great extent. A tendency toward decentralization of urbanisation was discerned as a more characteristic feature of less urbanised areas.

### 9. Agricultural Productivity and Urban Growth

It was hypothesized that urban growth

was related positively with agricultural productivity. Agriculturally productive areas would provide conditions conducive to growth of agricultural markets and agro-based industries that stimulate urbanisation. On the contrary, the less productive areas would be characterised by subsistence nature of economy and slow pace of urbanisation.

### Methodology

The agricultural productivity index values for all the districts were obtained from the monograph *Economic and Socio-Cultural Dimension of Regionalisation* published by the Census of India. (Sharma, 1972). Districtwise index values of agricultural productivity and growth rates of urban population were correlated. The results are presented in Table 6.

### Discussion

The relationship between the two variables was found as rather indifferent. They showed an insignificant negative correlation of  $-0.02$  at the country level. The results at state level were also not consistent.

(ii) A negative relationship between agricultural productivity and urban growth rate was discovered in three southern states of Kerala, Tamil Nadu and Karnataka where industrialization based on minerals and plantation crops took place in areas with relatively low degree of agricultural productivity. A negative relationship was observed also in Haryana where considerable urban development took place in newly reclaimed and not so productive agricultural lands.

Table 6

**India : Relationship of Percentage of Urban Population, Density of Towns and Index of Agricultural Productivity with Urban Growth Rate, 1961-1971**

| India/states      | Coefficient of correlation with |                  |                                    |
|-------------------|---------------------------------|------------------|------------------------------------|
|                   | Percentage of urban population  | Density of towns | Index of agricultural productivity |
| India             | -.11*                           | -.08             | -.02                               |
| Andhra Pradesh    | +.13                            | +.29             | +.05                               |
| Assam             | -.39                            | -.11             | +.05                               |
| Bihar             | +.62*                           | +.58*            | +.50*                              |
| Gujarat           | -.15                            | -.39             | +.15                               |
| Haryana           | -.64                            | -.24             | -.52                               |
| Jammu and Kashmir | -.28                            | -.08             | -.07                               |
| Karnataka         | -.18                            | -.17             | -.29                               |
| Kerala            | +.38                            | +.03             | -.28                               |
| Madhya Pradesh    | -.24                            | -.36*            | +.38*                              |
| Maharashtra       | -.02                            | +.13             | +.11                               |
| Orissa            | +.22                            | -.09             | -.18                               |
| Punjab            | +.29                            | -.05             | +.07                               |
| Rajasthan         | -.21                            | -.29             | +.21                               |
| Tamil Nadu        | +.23                            | +.56*            | -.17                               |
| Uttar Pradesh     | -.23                            | -.22             | +.11                               |
| West Bengal       | -.29                            | -.26             | +.28                               |

\* Significant at 95 per cent level of confidence.

The results were not computed for Tripura, Himachal Pradesh, Nagaland, Manipur, Meghalaya and union territories in view of very small number of areal units involved in each case.

Data for Sikkim were not available.

In states like Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan, with predominantly agricultural economy and meagre industrial base, the relationship between agricultural productivity and urban growth was positive. The same relationship was observed in Maharashtra, Gujarat and Punjab, where development of agro-based industries in agriculturally more productive areas, gave a stimulus to urbanisation.

Nevertheless, the agricultural productivity and urban growth rate showed a feeble relationship in most parts of India.

### Conclusions

(i) In conformity with popular notions, growth rate of towns was found related positively to their size, administrative status, and rail as well as road accessibility. A positive relationship was found also with percentage of workers in manufacturing, construction, transport, mining and services.

(ii) As expected, the rate was related negatively to percentage of workers in agriculture, household industries and trade and commerce. All of them offered only a little scope for in-migration to towns.

(iii) Urban growth was found related

negatively with degree of urbanisation and density of towns. An unmistakable tendency toward decentralization of urbanisation was observed.

(iv) Contrary to general impression, agricultural productivity and urban growth were found as related negatively with each other. This was due firstly to considerable new industrial-urban development in mineral rich but agriculturally poor areas, and secondly to considerable out-migration (both urban and rural) from several agriculturally productive but densely populated areas with subsistence economy.

(v) The urban shadow effect of large cities was not evident. Towns in the proximity of big metropolitan cities grew fast. Many of them benefitted from the overspill of industrial activity from the metropolis.

Thus, two opposite tendencies were observed in Indian urbanisation. The first was the emergence of new urbanisation in backward areas, and the second was the concentrated urban development near the big cities. The former tendency was stronger as reflected in the negative relationship between the rate and degree of urbanisation in the country as a whole.

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# DISTRIBUTIONAL PATTERN OF SCHEDULED CASTE POPULATION IN INDIA : 1971\*

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The present study is concerned with the analysis of the distributional pattern of the scheduled caste population in India. The term scheduled caste, which is considered almost synonymous with the term *Sudra* of ancient times, came into liberal use only after Independence. Recognizing the fact that some of the low castes in India had suffered a neglect in the society and the social justice could be achieved only by uplifting these neglected castes, a provision in the Constitution of India was made for preparing a schedule of such castes for each state and union territory. Under the constitutional provision, the President of India notifies the schedule in respect of each state and union territory of such castes which are to receive certain benefits including reservations in employment. The people belonging to the castes scheduled for this purpose are known as scheduled caste persons. With a view to providing basic statistical information to the government, the census of India, publishes special volumes giving detailed information about scheduled caste population. These data provide information with regard to their number, sex, education and occupation at district

level. Similarly, data pertaining to the numerical strength of individual scheduled castes in every district are also available. The present study is based upon these census data.

Certain inadequacies of the published data deserve a special mention over here. The listing of castes as scheduled castes may not be uniform for all states; a caste may be included in the list of scheduled castes in one state but it may not be considered as scheduled caste even in the neighbouring state. Similarly, a particular caste may fall in the list of scheduled castes in one state but the same may be a scheduled tribe in another and vice-versa. Such a tendency points to the limitations of the analysis based on these data.

Any analysis of the demographic structure of a section of a society, such as scheduled caste population of India, warrants a thorough probe into the historical evolution of the social structure of that society. Manu has often been discredited, though wrongly, for giving a caste-based stratification to the Indian society. In fact, the social

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\* This paper is scheduled for presentation at the Second Annual Conference of National Association of Geographers, India to be held at Tirupati in January, 1981. It forms a part of the study on the Scheduled Castes of India sponsored by the University Grants Commission.

philosophers not only of India but also of the West have for long been conceptualising a social structure of their respective societies in search for social unity. For instance, in early Greek thought the thinkers like Protagoras, Socrates and Plato emphasised the need for establishing a lasting social order in the society. It may be difficult to deny a parallelism between Plato's three-tier social structure of the Greek society and Manu's quaternion *Varna Vyavastha* both of which seem to have been evolved to achieve the same social objective. In such classifications, the serenity of a priest/teacher, the heroism of the warrior, the honesty of the businessman, and patience and energy of the worker were the virtues conceived for rendering equal status to all the sections of the society. However, the peculiarity of the present Indian caste system is that the function-based *Chaturvarna* of ancient times has given way to heredity based stratification. Although it may be difficult to establish the precise timing of such a change, yet Kautilya's shift from ethical values to material values may have been the turning point in the Indian social philosophy whereby work became a degrading servitude to be done grudgingly and purely for economic motives. Furthermore, since division of castes had to be in accordance with the character and aptitude of each man and as it was difficult to determine the aptitude of each individual, heredity and training became handy to fix the calling (Radhakrishnan, 1974).

According to 1971 census, the scheduled caste population of India accounted for 14.6 per cent of the total population of the country. However, the scheduled caste

population is far from being a single homogeneous group. There are as many as 542 castes, each possessing a high degree of occupational specialisation and accordingly enjoying a different status among themselves. Their number varies from a minimum of 3 in Sikkim to a maximum of 100 in Karnataka (Table 1). It would be interesting to note that caste performing the same function is known differently in different states. For instance, those doing the menial job are known as *Bhangi* in Gujarat, Rajasthan and Delhi; as *Rukhi* in Maharashtra, Karnataka and Madhya Pradesh; as *Balmiki* in Punjab, Uttar Pradesh, Haryana, and Chandigarh; and as *Hadi* in Orissa, and Goa, Daman and Diu. Similarly, the castes engaged in fishing activity are known by different names in West Bengal and Tamil Nadu. In fact, the nomenclature of the scheduled castes seems to vary largely due to the linguistic variety that our country possesses. Besides, in some cases the occurrence of castes may also vary in accordance with the variations in the resources of the areas leading to functional variety. For example, the castes specialising in fishing activity are to be found in the coastal regions only. Thus, the high degree of diversity in the nomenclature of the scheduled castes in the country is partly due to the country's variable resources and partly to its linguistic variety.

Although there are as many as 542 scheduled castes in the country yet about a half (49.7 per cent) of country's scheduled caste population is contributed by only 10 castes including Chamar (25.66 per cent), Adi Dravida (3.80 per cent), Pasi (3.66 per cent), Madiga (3.41 per cent), Dusadh (2.81 per cent), Mala (2.67 per cent), Paraiyan (2.16 per cent), Dhobi (2.05 per cent), Adi



Table 1

## INDIA : Statewise Distribution of Scheduled Caste Population : 1971

| Area                     | Percentage of scheduled caste population to total population in |             |             | Number of scheduled castes |
|--------------------------|---|-------------|-------------|----------------------------|
|                          | All areas   | Rural areas | Urban areas |                            |
| INDIA                    | 14.60   | 16.05       | 8.76        | 542                        |
| <i>States</i>            |   |             |             |                            |
| Punjab                   | 24.71   | 27.63       | 15.30       | 37                         |
| Himachal Pradesh         | 22.24   | 22.81       | 14.67       | 60                         |
| Uttar Pradesh            | 21.00   | 22.57       | 11.31       | 66                         |
| West Bengal              | 19.89   | 24.27       | 6.59        | 63                         |
| Haryana                  | 18.89   | 20.55       | 9.03        | 37                         |
| Tamil Nadu               | 17.76   | 21.06       | 10.15       | 75                         |
| Rajasthan                | 15.82   | 16.46       | 12.81       | 81                         |
| Orissa                   | 15.09   | 15.44       | 11.25       | 91                         |
| Bihar                    | 14.11   | 16.66       | 9.12        | 23                         |
| Andhra Pradesh           | 13.27   | 14.51       | 8.12        | 60                         |
| Karnataka                | 13.14   | 14.44       | 9.09        | 100                        |
| Madhya Pradesh           | 13.09   | 13.68       | 10.09       | 69                         |
| Tripura                  | 12.39   | 13.10       | 6.28        | 29                         |
| Kerala                   | 8.30  | 8.95        | 4.95        | 69                         |
| Jammu & Kashmir          | 8.26  | 9.30        | 3.68        | 13                         |
| Gujarat                  | 6.84  | 6.92        | 6.63        | 42                         |
| Assam*                   | 6.10  | 6.06        | 6.46        | 15                         |
| Maharashtra              | 6.00  | 6.57        | 4.75        | 69                         |
| Sikkim                   | 4.53  | 4.08        | 8.83        | 3                          |
| Manipur                  | 1.53  | 1.70        | 0.40        | 7                          |
| Meghalaya                | 0.38  | 0.19        | 1.50        | 12                         |
| <i>Union Territories</i> |   |             |             |                            |
| Delhi                    | 15.63   | 25.08       | 14.55       | 36                         |
| Pondicherry              | 15.46   | 21.07       | 7.72        | 15                         |
| Chandigarh               | 11.30   | 21.69       | 10.22       | 22                         |
| Goa, Daman & Diu         | 1.92  | 1.71        | 2.51        | 5                          |
| Dadra & Nagar Haveli     | 1.79  | 1.79        | —           | 3                          |
| Arunachal Pradesh        | 0.39  | 0.07        | 0.02        | 5                          |

\* The figures for Assam include the figures for Mizoram.

Source : Calculated from Census of India, *Scheduled Castes and Scheduled Tribes, Series 1, Paper 1 of 1975*, Registrar General and Census Commissioner, India.

Karnataka (1.78 per cent) and Namasudra (1.76 per cent). About one-fourth of the total scheduled caste population of the country is contributed by Chamars alone while another one-fourth is accounted by nine scheduled castes together (Table 2).

Table 2

**INDIA : First Ten Dominant  
Scheduled Castes, 1971**

| Name of the caste | Proportion in total scheduled caste population |
|-------------------|--|
| Chamar            | 25.66  |
| Adi Dravida       | 3.80   |
| Pasi              | 3.66   |
| Madiga            | 3.41   |
| Dusadh            | 2.81   |
| Mala              | 2.67   |
| Paraiyan          | 2.16   |
| Dhobi             | 2.05   |
| Adi Karnataka     | 1.78   |
| Namasudra         | 1.76   |

Source : Calculated from Census of India, *Scheduled Castes and Scheduled Tribes, Series 1, Paper 1 of 1975*, Registrar General and Census Commissioner, India.

Chamar is the first ranking caste in large parts of north and central India covering most of Jammu and Kashmir, Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh and Bihar ; Adi Dravida (34.82 per cent) and Paraiyan (20.96 per cent) dominate in Tamil Nadu ; Pasi ranks first in Avadh region of Uttar Pradesh; Madiga (43.55 per cent) outnumbers other castes in large parts of Andhra Pradesh; Dusadh (26.48 per cent) predominates in

north Bihar ; Mala (36.6 per cent) ranks first in coastal areas of Andhra; Dhobi outranks other castes in Mizoram and dominates significantly in Uttar Pradesh and Orissa; Adi Karnataka (36.49 per cent) is most conspicuous in southern parts of Karnataka plateau and Namasudra (32.96 per cent) is most numeral in parts of Assam. It would be interesting to note that wherever Chamars dominate these account for 40 to over 90 per cent of the scheduled caste population of the area. In other areas the most dominant caste accounts for 30 to 50 per cent of the region's scheduled caste population.

Besides these castes, a significantly large number of other castes rank first in different parts of India although in terms of their numerical strength they are insignificant on all India scale. For instance, Megh is the first ranking caste in western Rajasthan and Rann-of-Kutch; Vankar in Kathiawar Peninsula; Mahyavanshi in remaining parts of Gujarat; Mahar and Mang in Maharashtra; Bambi in parts of Karnataka and Maharashtra; Balai, Ganda and Mahar in parts of Madhya Pradesh; Pallan in parts of Tamil Nadu; Pan and Ganda in Orissa; Koli in parts of Himachal Pradesh; Shilpkar in hill districts of Uttar Pradesh; Kaibarta in Arunachal Pradesh; and Bagdi, Bauri and Pod in West Bengal. In fact, there are 53 castes in all, which rank first in different parts of the country. Broadly speaking, the regional pattern of first ranking castes is more simple in north India than in the south, perhaps associated with greater linguistic variety in the south.

It is of special interest to note that the Indian scheduled caste population is overwhelmingly rural based as 88.04 per cent of

it lives in the countryside. That is why, while in the rural areas 16.04 per cent population belongs to the scheduled castes, the corresponding figure for the urban areas is only 8.76 per cent. The rural bias in the distribution of scheduled caste population of the country may be attributed to a number of historical, cultural and economic factors. Historically speaking, they constituted the artisan and service class in the rural areas who provided various services to the farming class whereas in urban areas the caste system not being that rigid, the services could be provided by the people belonging to the other castes as well. Secondly, viewed in the context of overall socio-economic and political structure of Indian society, the scheduled caste people seem to fit more in rural society than in urban society. Thirdly, while in the countryside bulk of the scheduled caste population can be absorbed on the farm as agricultural labour, in urban areas there is no such single occupation which can absorb these people *en-masse*. Fourthly, the recent developments in the field of agriculture have increased the demand for agricultural labour, which arrested the probable outmigration of the scheduled caste population from the countryside which seemed imminent due to the gradual break up of the *yajmani* system and waning of certain traditional services rendered by them. Fifthly, the rural isolation in general has also kept the comparatively socially and economically less awakened class of scheduled castes relatively less mobile. Moreover, whatever movement of scheduled caste population has taken place in recent years it has been more between rural areas themselves and less between rural and urban areas. Lastly, the relatively higher incidence of conversion either to Islam or to

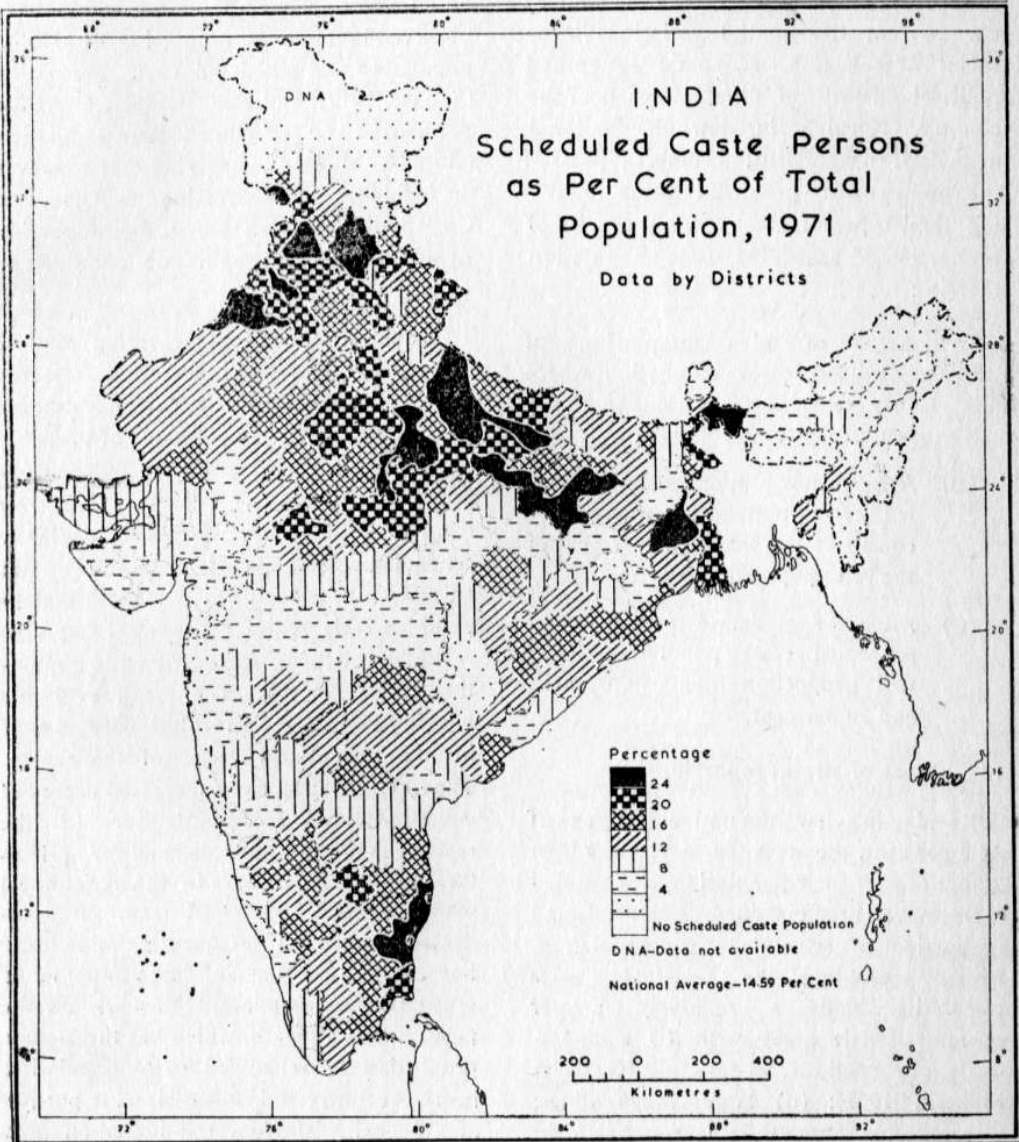
Christianity in the urban areas than that in the rural areas, *inter alia*, explains the overwhelming rural residence of the country's scheduled caste population.

### Spatial Pattern of Distribution

According to 1971 census the scheduled caste population constituted about 14.6 per cent of the country's total population. However, hidden under this national average are wide regional variations in the proportion of the scheduled caste population to total population. Out of 356 districts in the country, six namely Tirap (Arunachal Pradesh), all the three districts of Nagaland, the districts of Andaman & Nicobar Isles and Lakshdweep do not have any scheduled caste population. There are three more districts comprising Baramula (Jammu & Kashmir), Siang and Lohit (Arunachal Pradesh) which have no scheduled caste population in their urban areas. There are seven districts of Lahul & Spiti, Kinnaur (Himachal Pradesh), Manipur North, Manipur East, Manipur West (Manipur), Subansiri (Arunachal Pradesh) and the Dangs (Gujarat) which are completely rural and hence have no urban population in general and scheduled caste population in particular. Furthermore, the four districts of Greater Bombay, Madras, Yanam, and Calcutta are devoid of rural scheduled caste population by virtue of being entirely urban. In the remaining districts of the country the proportion of scheduled caste population to total population varies from a minimum of less than one per cent in Siang district of Arunachal Pradesh to the maximum of 47.02 per cent in Cooch Behar district of West Bengal. Broadly speaking, north India has greater concentration of scheduled caste population than its southern counterpart (Map 1).



MAP 1



Based upon Census of India Map with the permission of the Surveyor General of India.  
© Government of India copyright, 1979.  
The boundaries of Madhya Pradesh on the map is as incorporated from the North Eastern Areas (Reorganisation) Act, 1956, but has yet to be notified.  
The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

The regional disparities in the distribution of scheduled caste population in the country emerge from the spatial variations in the social organisation, economic set up and political history of different parts of the country. Keeping in view the national average of 14.6 per cent, the different parts of the country can be grouped into the following three types of areas on the basis of proportion of scheduled caste population therein :

- (A) Areas of high proportion of scheduled caste population where they account for more than 20 per cent of the total population.
- (B) Areas of low proportion of scheduled caste population where they constitute less than 12 per cent of the total population.
- (C) Areas of moderate proportion of scheduled caste population where their proportion ranges between 12 and 20 per cent.

#### (A) Areas of High Proportion

Keeping in view the national average of 14.6 per cent, the areas that have more than 20 per cent of their population as scheduled caste have been classified as areas of high proportion of scheduled caste population. Broadly speaking, the scheduled caste population finds a relatively greater concentration in areas with (i) comparatively long spell of feudal rule (Gosal & Mukerji, 1972); (ii) large landholdings; (iii) intensive agriculture; (iv) emphasis on cash crops like rice, sugarcane, cotton etc; and (v) large tracts of newly developed or surplus agricultural land (Chandna, 1972). In the pattern of areal

concentration of scheduled caste population, an inverse correlation has often been observed between the proportion of Muslim population and scheduled caste population (Sopher, 1977), and also between Christian population and scheduled caste population (Gosal & Mukerji), implying that wherever the incidence of conversion to Islam and Christianity has been small, the proportion of scheduled caste population continues to be high.

The northwestern India covering Punjab, Haryana, Himachal Pradesh and adjacent districts of Uttar Pradesh and Rajasthan constitutes a large compact area of probably the highest proportion of scheduled caste population (Map 1). This belt has over one-fourth of its population belonging to scheduled castes. Their concentration in this part of the country is a recent development as this region experienced very high rate of growth of scheduled caste population during 1961-71. The green revolution has indeed brought a revolutionary change in the agricultural scene of the region. The intensification and increased degree of commercialisation of agriculture in the region has created great demand for agricultural labour. The wages in the agricultural sector have witnessed an unprecedented spurt. Consequently, this belt has been receiving a large number of scheduled caste immigrants to work on the farms. Since Punjab, which has the highest proportion of scheduled caste population in the country and forms sizeable portion of this belt, is often considered an area experiencing out-migration of population on a large scale, the peculiarity of migratory trends of the region warrants an elaboration. In fact, the fast dwindling agricul-

tural landholdings in the Punjab and the state's historical international and intranational migratory links have, on the one hand, encouraged emigration or out-migration from the state while, on the other hand, the agricultural innovations have encouraged in-migration to the state, though of different class of people, to meet the increased demand for agricultural labour. It is usually considered a profitable proposition to depend more on hired labour and spare more and more family hands for other activities in India or abroad. Under these circumstances while the local educated, more enlightened and progressive people of Punjab are moving out from the state, the relatively poor, semiliterate or illiterate population, mostly of scheduled castes, is in-migrating to the state for working on the farms. The adjoining areas of Haryana, Himachal Pradesh, Rajasthan, and Uttar Pradesh which also form the part of this belt of high proportion of scheduled caste population have also experienced in-migration of farming labour class associated with increasing demand for agricultural labour due to the green revolution. Since in the areas other than Punjab there was no appreciable decline in the size of landholdings and the scope for agricultural innovations here was far more than that in Punjab, therefore, there has not been out-migration of non-scheduled caste population from them and hence the in-migrating scheduled caste agricultural labourers increased the proportion of scheduled caste population of these areas.

Similarly, other areas that have high proportion of scheduled caste population due to similar reasons include (i) Western

Uttar Pradesh (Bulandshahr, Aligarh, and Agra districts) and adjacent districts of Rajasthan and Madhya Pradesh; (ii) Bundelkhand uplands of Uttar Pradesh; (iii) Avadh plain and the adjacent district of Mirzapur of Uttar Pradesh; (iv) large parts of West Bengal; and coastal areas of Tamil Nadu. The high proportion of scheduled caste population in most of these areas is attributable to their developments in the field of agriculture where extension of irrigation and intensification of cultivation have increased the demand for agricultural labour which arrested the out-migration of landless agricultural labourers from these areas in some cases, and stimulated their in-migration in other cases. While the extension of irrigation and the associated green revolution in the western Uttar Pradesh and its adjoining areas, in Bundelkhand uplands, and in coastal areas, of Tamil Nadu explain to a large extent the high proportion of scheduled caste population in them the reasons for their high proportion in Avadh and its proximity are slightly different. The incidence of owner cultivator scheduled castes in Avadh is high since historical times which has made this section of population of the area stick to the region. In case of Mirzapur district it has been observed that some of the scheduled tribes have been declared as scheduled castes with a view to preventing their conversion to other religions. This has raised the proportion of scheduled caste population in this region. The districts of West Bengal adjoining the Bangladesh border which also exhibit high proportion of scheduled caste population present another typical situation contrary to what has normally been observed. An inverse



correlation between Muslim population and scheduled caste population has commonly been talked about (Sopher, 1977). But the co-existence of high proportion of Muslim and scheduled caste population in this part of the country is to be understood in the context of a large scale in-migration of Muslim population into these districts from across the border due to economic and political reasons. However, the high proportion of scheduled caste population in this belt of West Bengal is in response to the emphasis upon labour oriented crops in the region and large scale fishing activity which is carried on by the scheduled castes.

Thus, high degree of concentration of scheduled caste population was associated with long social and economic history of the areas as well as with the recent developments in the field of agriculture resulting into an increased demand for hired labour. The development of the activities like fishing in coastal areas of Tamil Nadu and West Bengal, and like mining in Kolar district of Karnataka also have played important role in giving high proportion of scheduled caste population to the respective areas.

#### (B) Areas of Low Proportion

In all there are 137 districts which exhibit low proportion of scheduled caste population of less than 12 per cent. In general the hilly regions, the tribal belt and the areas exposed to large scale missionary activities show a relatively low proportion of scheduled caste population. Thus, the areas of low proportion of scheduled caste population are confined either to the Himalayas in the northeast and northwest or to the central tribal belt of the country

or to the western coast.

Among the various regions of low proportion of scheduled caste population in the country, the Himalayas both in the northeast and in the northwest represent the most conspicuous area of least proportion of scheduled caste population (Map 1). The proportion of scheduled caste population in these two areas is almost negligible being less than one per cent in most of the districts. Both rural and urban areas in these regions are characterised by low proportion of scheduled caste population. These are the areas which historically speaking have witnessed large scale conversion from Hinduism to Christianity, Islam, and Buddhism. The entire northeastern Himalayan region comprising all the states and union territories lying to the east of West Bengal has extremely low proportion of scheduled caste population while the proportion of Christian population over here is extremely high ranging between 50 and 92 per cent. A long history of missionary activities in this region and the consequent conversion to Christianity goes a long way in explaining the low proportion of scheduled caste population in this tract. Similarly, in the northwestern section too, the districts having extremely low proportion of scheduled caste population have had a similar historical background of large scale conversion either to Buddhism (Lahul and Spiti and Ladakh districts) or to Islam (Baramula, Srinagar, Anantnag and Punch). While the districts of Lahul Spiti and Ladakh are the only Buddhist majority districts of India, the proportion of Muslim population in the districts of Jammu and Kashmir state mentioned here is more than 80 per cent of the total population.

and Madhya Pradesh. Similarly, 10 districts of Bihar, 4 of eastern Uttar Pradesh, 10 of Orissa and 2 of Madhya Pradesh together constitute another compact area of moderate proportion of scheduled caste population. Besides, 13 districts of Andhra Pradesh, 11 of Karnataka together make another region of moderate proportion of scheduled caste population. The remaining districts, where also the proportion of scheduled caste population is in the close proximity of national average, are sporadically distributed and do not make any compact belt. The proportion of scheduled caste population has remained moderate in those areas where the break up of the time-honoured functions carried on by them has not resulted in any significant out-migration from among this section of people because alternate avenues closely associated with their traditional occupations have emerged simultaneously in these areas. In fact, the development of such industries which can make the best use of their skills in the areas which otherwise do not hold much potential for agricultural development, holds the key to the stabilisation of the distributional pattern of the scheduled caste population in the country.

### Conclusions

Contrary to the common belief, the function-based stratification of a society was not typical of ancient India alone because most social philosophers, particularly the Greek, had for long been conceptualising such a social structure where different sections of the society could be assigned capability-based functions. According to them, this alone could help achieve more lasting social harmony in the society.

It has been observed that there is a large variety of scheduled castes in the country related partly with the country's functional variety associated with its variable resources and partly with its linguistic variety. Thus, while it is true that in a state the number of scheduled castes is determined by the variety of functions being performed by them, it is also true that the castes performing same function are known by different names in different states.

According to 1971 census, there were 542 scheduled castes in the country. Of these only 10 most dominant castes account for about a half of the total scheduled caste population of India. In their areal spread the Chamars outrank all other castes in most of north India; Adi Dravida and Paraiyan in most of Tamil Nadu; Pasi in Avadh region; Madiga and Mala in Andhra Pradesh; Dusadh in north Bihar, Dhobi in Mizoram; Adi Karnataka in southern Karnataka and Namasudra in Assam.

The scheduled caste population of India lives mainly in the countryside. The overwhelmingly rural bias in the areal spread of the scheduled caste population may be attributed to (i) the historical background of their emergence as a service class in the time-honoured rural set-up of Indian society; (ii) a long history of their links with the rural elite; (iii) the favourable economy of rural areas; (iv) the recent developments in the field of agriculture leading to increased demand for agricultural labour; (v) the non-availability of suitable avenues of employment for them in the urban centres; (vi) the prohibitive cost of living in urban areas; and (vii) the relatively higher incidence of conversion to other religions in urban areas.

and Madhya Pradesh. Similarly, 10 districts of Bihar, 4 of eastern Uttar Pradesh, 10 of Orissa and 2 of Madhya Pradesh together constitute another compact area of moderate proportion of scheduled caste population. Besides, 13 districts of Andhra Pradesh, 11 of Karnataka together make another region of moderate proportion of scheduled caste population. The remaining districts, where also the proportion of scheduled caste population is in the close proximity of national average, are sporadically distributed and do not make any compact belt. The proportion of scheduled caste population has remained moderate in those areas where the break up of the time-honoured functions carried on by them has not resulted in any significant out-migration from among this section of people because alternate avenues closely associated with their traditional occupations have emerged simultaneously in these areas. In fact, the development of such industries which can make the best use of their skills in the areas which otherwise do not hold much potential for agricultural development, holds the key to the stabilisation of the distributional pattern of the scheduled caste population in the country.

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Spatially, north India has greater concentration of scheduled caste population in comparison to its southern counterpart. Within north India, however, the two extremes of northwest and northeast Himalayan regions present a contrast. By comparison, in south India, the coastal areas of Tamil Nadu constitute an area of large concentration of scheduled caste population in the region otherwise characterised by their low proportion. The chief factors governing the proportion of scheduled caste population in different parts of the country include : (i) the incidence of conversion from Hinduism to other religions; (ii) the degree of concentration of scheduled tribe population; (iii) the average size of landholdings of the farming communities; (iv) the intensity of agriculture particularly with reference to inputs like water, capital, and labour (v) the proportion of cropped area under labour intensive crops; (vi) the availability of newly reclaimed or surplus agricultural land for settling scheduled caste families; and (vii) the duration and the nature of feudal rule.

Recent years have witnessed a tendency among the scheduled caste population to move in response to the changing pattern

of economic potentialities of different parts of the country. Their rural to urban migration has mostly been to the construction sites. Their rural to rural migration, however, has been of three types. First, their migration along with the migrating farmers. Secondly, their migration to the areas experiencing green revolution. Thirdly, to the newly reclaimed areas especially for their settlement. Such migratory trends among the scheduled caste population have been initiated by the gradual break up of the traditional services rendered by them in the rural areas and also by the developmental activities whether sponsored by the government or private agencies.

A special mention must also be made of the typical developments taking place in different parts of the country with coveted social, economic or political motives. In areas where the scheduled tribes enjoy a higher status than the scheduled castes as is the case in Himachal Pradesh, a tendency among some of the scheduled castes to get themselves gazetted as scheduled tribe has been observed. On the contrary, in areas where the tribal population has a temptation for conversion, attempts have been made to declare some of these potentially convertible tribes as scheduled castes as has been the case in some of the parts of Uttar Pradesh

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**BOOK REVIEW**

**R. C. Chandna &  
Manjit S. Sidhu**

**Introduction to Population Geography**

Kalyani Publishers,  
New Delhi and Ludhiana, 1980,  
xii+184 pp. Rs. 50.00 for hard cover and Rs. 25.00 for  
paper back.

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*Reviewed by Asok Mitra*

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This is a welcome handy introduction to Population Geography, a discipline which is acquiring increasing recognition in social and economic planning as well as in the academic studies of schools and universities. Dr. Chandna and Dr. Sidhu obviously intended this treatise as a textbook : the methods of calculating various rates and measures are carefully explained wherever appropriate. The introductory chapter on the Nature and Scope of Population Geography is excellent. The second chapter on Sources of Data and Problems of Handling Data and the third on Distribution and Density are concise and satisfactorily relate population to physical factors like climate, terrain, soil and mineral wealth. The fourth chapter on Growth of Population is the best written part of the book. Chapters V Migration, VI Sex Ratio, VII Age Composition and VIII Literacy need to be expanded in a second edition to incorporate some of the more important landmarks in Indian research since 1956. As they stand, they are a little sketchy and do not go into the details of how they can be studied or applied from the point of view of the Geographer in the pursuit of regional analysis and planning.

Population Geography is most relevant in economic analysis in relation to population distribution and planning for regional growth. Chapters IX Economic Characteristics, X Urbanisation and XI Population and Resources are excellent as an introduction but their relevance to social and economic growth through population distribution and particularly in terms of the demographic, social, cultural and economic aspects of the population deserve further treatment in a later edition. The authors might like to add a chapter on analysis of population trends in terms of groups of different kinds of variables to bring out regional variations.

These are suggestions and are not intended in any way to detract from this lucid and compact treatment of an important emerging area of academic and practical concern.

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**DOCTORAL DISSERTATION ABSTRACT**

**K.K.L. Das**      **Population and Land Resources in North Bihar  
Plain-West of the Kosi**  
Year : 1980      Supervisor : K.N. Das  
University : Bhagalpur University, Bhagalpur, Bihar.

In the context of increasing appreciation of population as a factor in and an element of development, comprehensive population studies, especially of backward regions, are imperative. It was with this objective that the author accomplished the doctoral dissertation on the relationship between population and land resources in North Bihar Plain-West of the Kosi River. The aim was to make an objective assessment of the resource/population situation in temporal-spatial perspective, to examine its consequences and suggest some strategies for the development of the study region.

The 'North Bihar Plain-West of the Kosi River' is a compact area constituting the major part of the Bihar Plain lying wholly to the north of the Ganga river. With a rich Maithili culture and heritage, the region has a distinct geographical personality of its own. It covers an area of 35,823 kms. and had a population of nearly 20 million in 1971. Its resources are derived mainly from land. As such, land resources in the study refer essentially to agricultural resources.

Covering only about one-fifth of the area of the Bihar state, the study region contains over one-third of its total population, giving a high location quotient of 1.8. Its rural population density (535 persons per sq.km) was almost the twice the density of Bihar and thrice that of India. As much as 95 per cent of its population lives in over 20 thousand villages signifying that the region is indeed overwhelmingly rural. Nine out of every ten persons here are dependent on agriculture. It is this primacy of rural population, dominated by agricultural occupations, which calls for an intensive study of relationships between land and people.

A massive population base and an extremely high man-land ratio coupled with traditional subsistence agriculture are symptomatic of a stagnant economy in the entire North Bihar Plain in general, and the area lying to the west of the Kosi in particular. The poverty of the rural masses arising out of their continuing dependence on a backward stagnant agriculture in this fertile alluvial plain results in a classic vicious circle. The origin, nature and functioning of this relationship constitutes the basic theme of this investigation.

The dissertation is divided into four sections and further into nine chapters. The first section relates to the conceptual framework of land-people relationship (Chapter I)



This is followed by a meaningful discussion on the physical resources of the region (Chapters II and III). The second section is devoted to a fairly detailed account of the pattern of the land utilization (Chapter IV). The third section covers an intensive study of quantitative as well as qualitative aspects of population (Chapters V and VI). Finally, the fourth section assesses pressure of population on land (Chapters VII to IX). Statistical methods as well as suitable cartographic techniques have been employed to identify and represent the intensity of pressure in different areas. The summary of conclusions, at the end, incorporates main findings of this study.

Two features of agricultural economy act as chief constraints in the region's economic transformation : meagre scope for any further extension of cultivable land and a persistent primitive farm technology. The main ailment of the agricultural development has been poor state of irrigation. Consequently agriculture is plagued by frequent failure of crops resulting from erratic and ill-distributed rainfall together with menacing floods which visit some parts of the region nearly every year. The agricultural economy is beset with the alternate hazards of drought or flood. Agriculture is intensive in as much as the agricultural fields are kept engaged throughout the year so that a chance of failure of one crop is largely compensated for by another, especially in the southern part of the region. As a consequence, yields are low and total farm production is quite inadequate to meet the requirements of even agricultural population. This is equally true of those areas also where mainly cereals are grown.

The population in the region grew by 18.12 per cent during 1961-71. Although this rate was less than that of Bihar (21.30 per cent) yet over a vast population base even a modest percentage increase results in an enormous rise in absolute numbers. The intensity of the problem emerges as more grave as the data on migration, literacy, sex-age composition, and working force are examined. The region has undergone sizable outflow of people. The land tenure system is also unjust. The distribution of agricultural land is highly uneven. This signifies that the plight of the small and marginal landholders, who are in overwhelming majority, is all the more pitiable.

Evidently, the land resources and population base of the region are highly maladjusted. This situation has to be corrected. Three strategies are suggested (i) sectoral development like that of agriculture, agro-based industries and necessary infrastructure, (ii) population control and (iii) social development through education.

The thesis incorporates text (pp.1-332), 2 models, 24 tables, 98 neatly drawn maps including insets, glossary of local terms, in addition to 21 photographs, a bibliography and appendices.