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WORLD FERTILITY SURVEY¹⁾

By

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- 1) The Presidential Address presented to the 39th Session of the International Statistical Institute.

On behalf of the members of the International Statistical Institute I wish to express to the Federal Government of Austria our most sincere gratitude for the opportunity to be guests in Vienna at the 39th Session. I would also like to thank the preceding speakers for their kind words of welcome.

Vienna has a long tradition as a site for international meetings. The International Statistical Congress met here 116 years ago, its Permanent Commission exactly 100 years ago, and both the 3rd and the 14th Session of the Institute were held here, the latter session 60 years ago. Thus, this time several anniversaries can be celebrated simultaneously.

The ISI also owes much to individual Austrian members who during the ages have taken great interest in the Institute and made valuable contributions. In particular, I would like to mention Professor Franz von Neumann Spallart who has been considered as the father of the Institute. I would also mention our Honorary Member Professor Wilhelm Winkler, and Dr. Karl Pribram who in 1913 was Secretary General of the Organizing Committee and who was our doyen until he died last month.

It is not easy to arrange an ISI session with more than 1 000 participants. No doubt members of the Organizing Committee and other individuals who prepared for this Session have had to carry unduly heavy burdens. We appreciate their willingness to do so and at the same time wish to express our great satisfaction with the way in which preparations have been made. The members will wish me to thank in particular the Chairman of the Organizing Committee, Professor Dr. Lothar Bosse, who I know has carried a very heavy burden.

During the past two years several developments affected favourably the Institute's prospects. These are described in detail in the Bureau's report to the General Assembly, but I would like to mention some of them. The Review of the ISI was modernized, and as from 1972, appeared under the title "International Statistical Review". A new section was established - the International Association of Survey Statisticians. Our Permanent Office undertook the secretariat functions of the new Mathematical Programming Society. We had a larger increase in membership than ever before, and the ordinary members who were elected in 1972 represented a dramatic change of age distribution which, if continued, will ensure the desired renewal. These developments alone represent an encouraging progress in following up

recommendations made some years ago by the Re-Appraisal Committee. In addition, the International Statistical Institute launched a large international research project, the World Fertility Survey. This project involves planning and implementation of nationally representative and internationally comparable sample surveys on fertility in many countries, and its scope and significance is such that the World Fertility Survey may, in the long run, prove to be a major policy event in the history of the Institute. It therefore seems appropriate to take the Opportunity to promote a wider interest in this important research project.

At the General Assembly tomorrow morning there will be ample opportunity to discuss administrative and financial aspects of the World Fertility Survey. Tomorrow afternoon more technical aspects will be dealt with at a scientific meeting. This means that today I can confine myself to more general issues, mainly the background of the Survey, in particular the need for it, the factors enabling the ISI to engage in such a project, and the implications for members of the Institute.

In a number of the less developed countries, particularly in Asia, populations are growing at such a rate that, if continued, they would double every 20-30 years. If such a population explosion cannot be avoided, the existing widespread poverty in these countries may become permanent, or only a very slow improvement of per capita income and standard of living will be achievable. A drastic reduction of the population growth is likely to be an important element in facilitating development and a reduction of the income disparities between these countries and more developed regions of the world. It must be added though that a reduction of population growth is no substitute for economic and social development and does not in itself generate development.

According to the latest projection published by United Nations, world population will grow from 3.6 billion in 1970 to 6.5 billion in year 2000. With the birth and death rates in year 2000 assumed as a basis for this projection, world population would double in about 40 years, i.e., reach 13 billions by 2040. The usefulness of such a crude calculation is limited, but it demonstrates that environmental and resource problems, which are increasingly being recognized as a major area of world concern, may become intolerable within the time span of a few generations if the world birth and

death rates follow the assumed pattern. Of course, the rapid growth of world population is only one element in the environmental problems. Equally important is the rise in the level of technology, production and consumption which expands per capita demand on resources and produce environmental deterioration.

Throughout the world there is a growing popular appreciation of the seriousness of the population issue. However, it would be a mistake to speak of "the population problem" as if it were one distinctive crisis to be solved once and forever. There is a growing scientific recognition that the sociobiological structure of a population and its evolution over time are interdependent with a wide range of social and economic problems. Even if zero-population growth rates could be attained soon all over the world, population problems would continue to exist. For example, with the low mortality characteristics of the more developed regions of the world, zero-population growth inevitably results in a much older population structure than has characterized society over most of history. This means relatively small new cohorts entering the labour force and relatively more older workers, with possible consequences, inter alia, for the introduction of technological innovations. It also means a much larger proportion of older retired workers, with special medical, financial and other problems.

Concern over such issues explains why in many European countries with stagnating populations, policies aim at increasing rather than at decreasing the birth rates. With reference to either kind of policy there is an urgent need for analyses of the levels and causes of change in demographic processes. This need is also urgent in countries where governments for other reasons are stimulating population growth. Irrespective of the kind of population policy to be pursued, governments need a scientific basis for it.

Population growth is not a simple function of current birth and death rates. In most countries with a history of moderate population growth it will take 60 years or so after the net reproduction rate falls to replacement levels and remains there before population growth stops. This is due to the momentum for growth implicit in the relatively large numbers of young people of reproductive age - the product of the previously higher fertility. Japan is a good case in point. Its reproduction rate has been near the replacement level since the 1950's but its population is still growing at the rate of about one million a year and is not expected to stop growing until well after the year 2000.

It is only in the last few decades that scientists have understood the way in which age-structures of a population interact with its vital processes of birth and death. For example, while declines in mortality mean that in absolute terms there are more old people, the percentage distribution of the population by age, as a rule, changes very little before life expectancy reaches 65 or 70 years. Changes in fertility, however, may have a substantial effect on age distribution, irrespective of the level of mortality. Furthermore, changes in mortality do have a major effect on population growth rates while life expectancy increases from primitive levels of 25 or so to the modern 70. However, once this modern level is attained, population growth is negligibly affected by further declines in mortality, while the variations in fertility continue to have their effect. In most developed countries the attainment of immortality for all would have less effect on long term population growth rates than a 15 pct. increase in fertility rates!

Since fertility is the essential factor influencing age-structure and population growth everywhere, its measurement and the understanding of its causes and consequences are of profound importance for population policy. Trying to understand the complex biosocial system that determines fertility involves measuring not only the birth rate and the number and timing of births, but also the use of various methods of birth control, marriage rates, attitudes to the number of children desired, lactation and breastfeeding, to mention only some elements of the system. The World Fertility Survey represents an effort to make major steps forward in developing comparative data on fertility and its correlates in as many countries as possible.

At present, such data are insufficient not to say lacking both in countries with exploding populations and in the countries where populations are stagnating. Policy-makers aiming at influencing population growth are acting more or less in the dark. In some less developed countries not even the size of the population or the approximate magnitude of population growth is known. Part of the numerical information available is of such a low quality that it may be more harmful than useful for purposes of population policy. Even in more developed countries, where in fact quite a few measures affecting population growth are being taken, not enough is known about their effects.

Thus, there is a vast need for improvement in the quantitative information necessary for population policy generation. Providing a better

factual basis for population policies appears to be one of today's most challenging tasks for the statistician.

The launching of the World Fertility Survey is based upon the belief that the International Statistical Institute has a role to play in this field. Being the unifying world association of statisticians, the Institute has highly qualified members in all regions of the world and in most countries. National directors of statistics, directors of national and international research institutes, chairmen of quite a few national statistical associations, and heads of interested international bodies are either personal members or ex officio members of the Institute. Additional ISI members are employed in international organizations, in governments, at universities and research institutes, as well as in private industry, and they represent a wide spectrum of professional expertise. The ISI has an affiliated organization of specialists in demography, viz., the International Union for the Scientific Study of Population (IUSSP). I am happy to say that with the collaboration of the United Nations the World Fertility Survey is undertaken by the ISI in cooperation with the IUSSP. The new association of survey statisticians has also an important role to play. Last, but not the least important, the Institute has an efficient permanent office with a long tradition and considerable experience in handling international matters. The Institute, thus, is well suited to engage in this international programme of population research. These factors were, I believe, rather decisive for the main donors, viz., the United Nations Fund for Population Activities and the United States Agency for International Development, when they entrusted ISI with planning and implementing the World Fertility Survey. To date, these donors have granted \$ 1.5 million for planning purposes. It is anticipated that they will make additional and much larger grants as needed in the three-year implementation period 1974-1977, provided that the ISI, by the end of the development period, has succeeded in developing workable plans and ensuring sufficient participation. In addition, the Institute hopes to obtain grants from other governments.

Hopefully, the World Fertility Survey will enable each participating country to describe and explain its human fertility and, as far as possible, to compare fertility and the factors which influence it in different regions of the world. Moreover, it will enable countries to develop survey techniques

and the organizational capacity for demographic and other social science research. In these ways the World Fertility Survey may significantly improve the information base needed for an active population policy. Improved data on human fertility will clearly facilitate national efforts in economic, social, and health development.

Above all, the World Fertility Survey will strive for national survey results of high quality. It is hoped that, in all participating countries, the World Fertility Survey will be a model of scientific excellence and provide a standard against which subsequent surveys may be compared. Thus, the World Fertility Survey is conceived as an ambitious project, and you may well wonder how its goals are to be achieved.

Since this will be dealt with in detail tomorrow, I shall now limit my answer to predicting with confidence that under the leadership of our well known and outstanding ISI-member Dr. Maurice Kendall, all preparations will be completed by the time of the World Population Conference in 1974, so that the project will then be ready for implementation. Thus, the World Fertility Survey can be considered as a major contribution to the World Population Year.

To make the Survey a major event in the history of the Institute, the collaboration of as many members as possible is not only desirable but necessary. Therefore, the Bureau hopes that a large number of members, not least the ex officio members, will support and take an active part in the development and implementation of the Survey, each in the way he feels that he can best contribute. Many members, I am convinced, can make important scientific contributions, and the meeting tomorrow is included in the programme partly for this purpose. Others can provide invaluable assistance in enlisting participating countries. Directors of statistics and research institutes, and also other members, can help in obtaining support from governments in the form of either direct grants or contributions in kind. All members can help by disseminating information about the World Fertility Survey.

Many have already made substantial contributions. The ISI has received invaluable assistance from various bodies of the United Nations. The United States Bureau of the Census has made several experts available for periodic work on the World Fertility Survey. The International Union for Scientific Study of the Population has, as an organization and by way of its members, proved to be a very active and valuable collaborator. The project has gained

immensely by these contributions and also by the generous assistance provided by individual ISI members and by several others. The small staff of the Institute has worked enthusiastically under severe pressure on the World Fertility Survey in addition to the regular programme. However, at the same time as I express the most sincere gratitude for this support, I wish to invite further assistance from members as well as from national statistical offices and other institutes or organizations who undoubtedly can play an important role in the development and implementation of the World Fertility Survey.

The World Fertility Survey is a large task, not only technically, but also administratively in terms of recruiting highly qualified personnel, ensuring participation of a sufficiently large number of countries, and assuring the desired co-ordination and progress of implementation. Admittedly, the Bureau has accepted a great responsibility engaging the ISI in this project, and serious problems may still arise. Fortunately, the financial prospects seem satisfactory, but this does not reduce the burden of responsibility for an efficient use of resources allocated and for the successful attainment of our goals. I trust that this responsibility will be felt not only by the staff engaged in the Hague, London and elsewhere, and by each of the Bureau members, but also by other members of the Institute. If members are willing to assist such as envisaged by the Bureau and the donors, I am convinced that the World Fertility Survey will be highly successful and that the ISI will thereby play an important role in improving the factual basis of population policy at the national and international levels.

If we succeed, and we will succeed, we shall have come far in following up the recommendation made by the Re-Appraisal Committee to increase the scale of our activity in order that the Institute should fulfill its role as the leading international statistical organization. The World Fertility Survey may be considered as the first international research programme of its kind. Similar projects may follow, for instance in the fields of environment, food, and energy. There is a great need for international research programmes in such fields, and the factors qualifying the ISI to undertake the World Fertility Survey are relevant for these fields as well. We should keep in mind that organization of large, international research programmes may become a major function of the Institute in the future.