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IUSSP Distinguished Lecture Series at the International Conference on Population and Development: A Summary

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At the occasion of the International Conference on Population and Development in Cairo (September 1994), the International Union for the Scientific Study of Population organized a "Distinguished Lecture" series which took place at the NGO Forum. In effect, these seven lectures constitute state of the art presentations on key questions before the conference.

This paper provides a substantive summary of these lectures, along with a workshop organized around the lecture on population and conflict. We have endeavoured here to highlight their major contributions.

Population and Development
Paul Demeny

Given the breadth of this topic, which is in fact the title of the conference itself, the focus here is on unanswered questions in regards to population and development. These unanswered questions can usefully be discussed in relation to the conferences in Bucharest, Mexico and Cairo.

Bucharest Controversies

The key point made throughout the text resulting from the 1974 conference was that 'population' and 'development' must be 'integrated'. However, no recipe was provided for development, let alone how to integrate population policy in development planning. While the conference was on 'population', rather than 'population and development', it called for adoption of a variety of socio-economic measures which were justified on the ground of human rights, rather than as elements of a population policy. In particular it called for the full integration of women and the eradication of illiteracy, and it stressed the importance of health services.

The draft of the conference document was based on a conviction that rapid population growth was responsible for either blocking or grievously slowing economic growth. Rapid population growth, in turn, was seen in significant measure as the consequence of births that were unwanted by the couples having them, especially by women. In contrast to the draft, the conference did not set population growth targets, and it made the case for family planning as an important service, satisfying needs to which people were entitled as a human right.

This juxtaposition of development issues and population issues in the final Bucharest document leaves two central questions unanswered. How can population policy be integrated in development policy if there are no targets for population growth? Secondly, how does population policy, and family planning in particular, serve macroeconomic objectives of enhancing the public good if it is seen only as a private good, providing a service that would enhance individual well being?

Mexico City Contretemps

At the 1984 conference, it was the United States that wanted to discuss development, while most other countries wanted to talk about the importance of family planning programmes, which they tended to see as the only actionable issue on the agenda.

Much has been made of the quote in the American statement that 'population growth is, by itself, a neutral phenomenon'. This was a choice piece of nonsense. In any context—economic, political, social—matters are not indifferent to scale, and population size is a key determinant of scale in human affairs. Size, in turn, is intimately connected to growth. The very next sentences in the US statement spelt out what was actually meant—and what was meant was incongruous with the supposed neutrality of population:

> [Population growth] is not necessarily good or ill. It becomes an asset or a problem only in conjunction with other factors, such as economic policy, social constraints, need for manpower, and so forth. The relationship between population growth and economic development is not necessarily a negative one. More people do not necessarily mean less growth. Indeed, in the economic history of many nations, population growth has been an essential element in economic progress.

In effect, the American statement might have been seen as a challenge for the conference to try to specify the conditions under which population growth is positive or negative for economic growth. In such an analysis, the historical experience of more developed countries should have been used, as well as the more recent successful experiences especially in countries of East and South-east Asia.

By failing to address these questions, the Mexico conference did not answer central questions concerning how development is achieved, and under what conditions population growth may be favourable or problematic for development. These central questions were not addressed for two reasons. First, the cold war rivalries prevented the conference from studying, for instance, the role of markets and property rights in fostering development. Second, the officials at the conference tended to be from ministries of health and family planning, less able to address the issues of population and development. In this context, the Mexico conference added no qualitatively novel elements to our thinking on 'integrating population and development'.

Cairo Perspectives

The Cairo conference for the first time used the concept of population and development in its very title, and the document is at least twice the combined length of its two predecessors, but in what ways does it make progress and what questions remain unanswered? The many hundreds of recommendations certainly make many demands on state agencies, at a time when many are saying that governments are already over extended.

Many of the themes of the Cairo document simply receive heavier and more repeated emphasis: improvement in the status of women, literacy, girls' education, protection of children, care of the environment, male responsibilities and participation. Genuinely novel elements involve recognition of the plurality of family forms, access to contraception by unmarried persons including teenagers, and attention to healthy sexuality. Family planning programs continue to receive strong endorsement, and they are placed within the larger concept of reproductive health. Closely tied to this larger concept are programs aimed at dealing with sexually transmitted diseases and AIDS prevention.

In comparison to these advances, there is relatively perfunctory treatment of development issues proper. That population and development must be integrated gets greater emphasis, if only by verbal escalation: 'explicitly integration', 'fully integrating', 'truly integrating'.

An important new conceptual guidepost involves the theme of 'population, sustainable economic growth and sustainable development'. Here again there are many unanswered questions, starting with the simple observation that sustained growth and sustainable development are a contradiction in terms. Clearly, any growth that contains physical components is, by definition, unsustainable in the long term. The contradiction can be resolved by defining development in qualitative rather than physical terms. But, of course, development as a commonly experienced contemporary phenomenon is hardly devoid of material components.

Demographic growth in particular is very much a material process. For instance, at present levels of fertility, the world population would exceed 100 billion by early in the twenty-second century. Indeed, population growth at any positive rate

is ultimately unsustainable. On a global level, population must stabilize to have sustainable development. In addition, there remain three unanswered questions which are much more practical.

First, when should stabilization occur? A 'Population Summit' of the world's scientific academies suggests sometime 'within the lifetime of our children'. This is too far away to provide guidance on what to do today.

Second, what should be the geographic patterns of adjustment around this stabilization? Here we encounter the difficulties of differences in conclusion depending on the geographic level of analysis. Many local areas see demographic growth as desirable, if only to increase their relative weight and as a sign that they are doing well relative to others. Even at the country level, many countries clearly consider that population stabilization is inoperative at home, though desirable for others or at the world level.

Third, by what mechanisms is this stabilization to be reached? In a broad sense, this mechanism must involve ongoing transformations of socio-economic systems that set the terms under which individual members of a society interact, through rewarding particular actions and discouraging others. The rules of the game in the social interactions are also set by the legal-institutional frame that lowers the costs of beneficial cooperation and deters behaviour harmful to the collective interest. The very essence of development involves the relative success of societies in handling this task, in the effectiveness of their institutions at giving freedom to individuals while safeguarding the public interest. This is also the key determinant of demographic phenomena at the aggregate level.

What does the conference document say about the mechanism through which stabilization is to be reached? In effect, there is a remarkable unwillingness to justify family planning programs as providing a public good. Instead, family planning programmes are seen as serving exclusively the private needs of their clients. But there are clearly many other things besides reproductive health that would enhance individual well being. It is not clear that reproductive services would necessarily rank very high in competing with all these other unmet needs.

In the face of these unanswered questions, there is remarkably little research on the consequences of population change. A reinvigorated analysis of population-development relationships is urgently needed if policy makers are to be provided with better advice than they can be given today.

How do economic development and family planning interrelate? Can we see family planing programs as programs for social change?

Economic development and fertility are interrelated in complex ways. At the 1974 conference it was frequently said that fertility would not change until there is development. We now know that fertility has changed in some societies with very little development. Poverty can also induce fertility decline. In other words, reductions in fertility can occur under many different development conditions, where people perceive an advantage to having fewer children. Yes, family

planning programs can also be seen as programs for social change. They can legitimize people's acting on their felt need to have fewer children, they are also means through which social values for lower fertility are transferred to individuals, and they provide the specific mechanisms through which people can achieve smaller family size goals. Consequently family planning programs should be legitimized not only as a means for achieving a private ends (control over one's own reproduction), but also as means of achieving a public good (reduced population growth).

Indeed, now-fashionable arguments to the contrary, there is no inconsistency between a program aimed at demographic objectives and yet insisting on strictly voluntary participation, thus guaranteeing that all its clients receive a service that is genuinely valued. Nor does a program so conceived need to pose a menace to good quality service. To the contrary, a voluntary program cannot achieve demographic goals unless the services offered are of high enough quality to attract clients.

The Course and Causes of Fertility Decline
John Caldwell

There are wide variations in time and space in respect to the levels of fertility at the onset of demographic transition, the speed at which transition occurred or is occurring, as well as with regard to its underlying causes and mechanisms.

Pre-modern Fertility

Though high, the pre-modern fertility rate was far below the biological potentials of women's reproductive capacity. Its level varied widely as a result of both biological and normative factors specific to various populations. Nutrition is known to affect the onset of puberty whereas duration of breast feeding may affect the length of the mother's postpartum sterility. There was great variability among populations in marriage customs, such as those regulating the type of conjugal unions—monogamy versus polygyny—or those placing limitations on widows' remarriage. For instance, in Western Europe, the "proper time to marry", if to marry at all, was decided on the grounds of economic rationality and the rules governing successoral rights to family estate.

Arguably there was no conscious control of fertility for most of human history. For one thing there was no need for it. The prevailing high mortality placed limits on family size and population growth. Secondly, far from being a liability, children presented an economic value to their parents in an agrarian, subsistence economy.

Fertility Decline

Economic development and medical progress, while lifting the biological ceiling on reproduction, have significantly raised the survival chances of children, thus removing, to some extent, the Malthusian negative check on family size and population growth. However, as education and wage work have expanded, children turned from being an economic asset into an economic liability. The intergenerational *wealth flow* became from parents to children. Thus the way was paved for conscious birth limitation practices by couples.

The process began in urban areas and among well-to-do couples and spread to rural, poorer and less educated segments of the population. It remains a contentious question as to whether birth control was an *innovative, adjustment* mechanism to a new economic environment, or a *diffusion* process. The cultural-linguistic configuration of fertility decline in Europe may be seen as evidence in support of the diffusionist interpretation.

Modern Times

Today's world presents a picture of a wide range of human childbearing experiences, never before witnessed. On one side of the spectrum are economically advanced countries where fertility is well below the replacement level. Countries of Southern Europe, which only recently had relatively high fertility by European standards, have suddenly seen a plunge to record lows of about 1.3 births per woman. Fertility decline in the European parts of the former Soviet Union has been affected by the deep social and economic crises accompanying the transition to a market economy. China and the countries of Pacific Rim have in recent years experienced a precipitous fertility decline, to levels around or even below replacement. The regime of sub-replacement fertility is gaining momentum world-wide. It is now part of the demographic landscape of the Caribbean and some Latin America countries. The huge Indian subcontinent has also clearly entered the demographic transition. On the other extreme of the spectrum are a handful of Muslim countries, and most of Sub-saharan Africa, where fertility remains at traditionally high levels, or there are only very early signs of a decline.

Much of fertility transition is a global phenomena, and not just part of the social history of individual countries.

There is no single explanation of the fertility transition. Historically, in Europe, it has been a spontaneous process, with no government intervention. If anything, governments and political elites of the time were inimical to birth control. Latin America, by and large, has followed the historical European model of the demographic transition and the onset of fertility decline.

Contemporary declines are a complex process of spontaneity, associated with economic development, and deliberate government intervention, drawing on modern birth control technologies. Clearly, the government had a strong hand in

China, and to a lesser extent in India and some other countries of the Far East. Arguably, in countries of Confucian and Brahmanic traditions there were no organized religions to challenge the moral imperative of the strong ruling elite pointing to smaller families. Organized family planning, along with the technological breakthroughs in fertility control, have assisted, accelerated, if not initiated, many of the fertility declines witnessed in modern times. Family planning plays a double role in this regard, as means and as moral legitimation of birth control. In some Asian countries and elsewhere, the initial government-directed family planning to bring about fertility decline has been overtaken by economic development and mass education, sustaining a process of spontaneous decisions by masses of couples to have fewer children.

The establishment of national family planning programmes and the investment in their activities, together with the vast national programmes in China, India and Indonesia, may have only speeded fertility decline by a dozen or twenty years, but this apparently small difference may mean an ultimate stationary world population of 12 billion instead of 20 billion, and that may make a very substantial difference to the human condition in the centuries ahead.

The Major Issues

The world has experienced over the last 125 years a most decisive social change. We have passed from a situation where fertility was falling in only one country to where it is doing so in most. Within a generation it is likely that there will be no country in the world which has not experienced some fertility decline.

The basic reason for the fertility decline is the continuing conversion of the world from an agrarian, largely subsistence society to an increasingly urbanized, exchange economy. In the latter children become costly to parents. As an increasing number of families found children to be an economic burden, the societies slowly accustomed themselves to the idea that it was physically and morally possible to limit family size. This process of taking control over fertility was helped by the secularizing of society. Increasingly people put themselves forward to justify the deliberate restriction of family size, and organizations came into being to help the process.

We have witnessed in the present century enormous strides towards not only a global economy but also a global society. Urbanization, universal schooling systems, moderate or low mortality, have made children an economic burden to many third world parents. This global society includes ideas and ideologies and even international conferences on population and development.

An important question is whether family planning programmes achieve anything. The history of nineteenth century Europe shows that couples will control fertility when it is economically advantageous to do so. Organized family planning will have little impact when the majority of people benefit from high fertility. To answer the question we must note that most family planning programmes have two components. One is the provision of contraception so that it is easy and

cheap to obtain. The other is the legitimation, and often moral approval, of family planning by not only the programme but by the government that sets it up. In these circumstances, fertility declines can almost certainly be accelerated and can probably be initiated earlier through organized family planning. Even in nineteenth century Europe fertility decline would almost certainly have begun earlier if good contraceptives had been in plentiful supply and if governments and churches had been in favour of fertility control.

Another important question is whether stationary populations will be attained everywhere. Will the terminal situation involve slow growth, slow decline or a balance between births and deaths? The experience of the last 20 years suggests that we may have a decline at the world level, perhaps from the end of the coming century, after having reached a level of some 12 billion people.

High fertility and rapid population growth in Sub-saharan Africa are a cause of considerable concern. This is all the more so as problems of population pressure on resources are compounded by an unsettling political situation, deterioration of economic conditions along with health and educational services, and the outbreak of the AIDS epidemic.

The regime of low fertility, close to and below replacement levels, is increasingly taking hold in the economically advanced countries and in those experiencing rapid economic development. This may call for a reorientation of the debates towards the emerging regime of the subfertility. It may raise questions as to what should be an adequate policy response to the demographic aging and possibly eventually to population implosion.

In some ways, the fertility transition has been an explosion of ideas and conversations. It involved not only limiting family size but its justification. This has been helped by censuses, surveys, demographic research and teaching, and by the discussion of the findings in learned books and ultimately in magazines and newspapers, on the radio and televisions and in the market place. In a sense we have "talked down the population explosion" through a variety of means including the holding of international conferences.

In modern times, access to immense new resources has upset the balance between births and deaths , producing rapid population growth, but this is undoubtedly merely a transitional phase of history. There are probably children already born who will live to see a world where population growth has almost ceased, but where, of course, the stabilized total population will be vastly higher, probably at least double our present population. The recent evidence that educated and developed countries, where women work outside the home, are usually characterized by lower than replacement fertility suggests that the stabilized global population of a century hence is more likely to be slowly declining than stationary.

Population and Health
Huda Zurayk

From the narrow focus on general mortality and morbidity, the public health concerns, as they can be traced through various United Nations policy pronouncements, have evolved towards a progressive opening up to include issues beyond the traditional purview of the field health. Two particular developments have punctuated this process. One is an increasing specificity with regard to health problems, and the other involves a strong emphasis on reproductive health, particularly visible at the Cairo conference.

The Main Stages in the UN Health Agenda

Traditionally, health policy was primarily aimed at reducing mortality in general. However, particular attention has been given to infant mortality, as a sensitive proxy indicator of general health and socio-economic development, and also because of its relation to fertility. A more systematic study of the determinants of infant and child morbidity and mortality was rendered possible through such analytical frameworks as the one developed by Mosley-Chen. This framework divides the determinants of child health into the 'intermediate' factors, such as maternal factors (spacing, age of mother etc.), along with the environment, nutrition and health care, and the 'background' factors representing the social context. In addition to its analytical value, the framework is helpful in a more effective, better targeted, streaming of medical interventions in support of child health.

Along with child-survival, a great deal of attention has been directed toward maternal mortality and morbidity. Of concern was both the mother's health and her capacity to give birth to a healthy child, which required paying attention to obstetric complications, prenatal care and safe delivery of the child.

The health of adult men consequently took a back seat in the priorities of public health policy. When it did receive attention, men's health was seen in terms of its implications for labour productivity and therefore for development. The concern for infectious diseases is now being somewhat superseded by concern for illnesses, particularly among men, generated by adoption of new life styles and conditions related to diet, stress, smoking, occupational hazards and so on.

The health of elderly people, an important public issue in economically advanced societies, looms on the horizon as potentially significant public health policy issue in the developing countries, as the demographic transition brings an increase in the predominance of elderly persons.

With the advent and spread of AIDS, concern for sexually transmitted diseases have received added gravity and urgency. The sexual education of adolescents, and the responsibility of men in reproduction and parenting, are thus recognised as important components of reproductive health policy.

The increasing sexual activity of adolescents in some regions of the world, with limited possibilities of protection, has brought to attention the problem among adolescents of both unwanted pregnancy and exposure to sexually transmitted diseases including AIDS. The issue of male responsibility in reproduction has gained interest. This includes the need for more participation of men in family planning and in carrying their fair share in parenting. It also includes men's responsibility for sexual behaviours that reduce the danger of sexually transmitted diseases.

With the Cairo conference, reproductive health has been brought to the pinnacle of the UN health agenda. A number of factors have contributed to this development. Abortion, performed legally under safe medical conditions, came to be looked upon as a health issue more than as mere device for birth limitation. Maternal mortality concerns have been expanded to include reproductive morbidity. Under pressure of feminists and health advocates, healthy reproduction was broadened to include reproductive choice. The advent of the AIDS epidemic has brought to the forefront a concern with sexual health in addition to reproductive health.

The 1994 document represents a major transformation in perspectives towards the health dimension, since three chapters deal with these health issues. The chapter on "Health, Mortality and Morbidity" moves from the health concerns dealing with child survival and health and nutritional status of children, to "women's health" emphasizing maternal morbidity and mortality, unsafe abortion and the health and nutritional status of women, and finally to the new epidemic of "HIV infections and AIDS".

Reproductive Health as Dominant Issue at the Cairo Conference

The Cairo Programme of Action in its key chapter "Reproduction Rights and Reproductive Health", but also elsewhere, contains a long list of reproductive health services: family planning, safe motherhood, prevention and appropriate treatment of infertility, prevention and management of the consequences of abortion, treatment of reproductive tract infections, and sexually transmitted diseases. Concern for sexual health of men received due emphasis as men are perceived to be the principal spreaders of sexual infections.

Family planning, while serving its own agenda (i.e. fertility regulation), has also served as a catalyst for promoting a broader agenda of reproductive health for women and to some extent for men. Broadening of family planning to include reproductive health concerns has both advantages and drawbacks. A combined programme may help in dealing more effectively with the health problems of the beneficiaries of the family planning which otherwise may have been ignored. On the other hand, a programme with such a broad agenda may be beyond the technical and financial means of relevant agencies in developing countries. Linking family planning with sexually transmitted diseases may tarnish its image.

The Programme of Action has made a significant contribution by placing reproductive health solidly on the agenda of population policy. But it did not go far enough. It failed to produce a comprehensive, well balanced agenda. It is still very much family planning biased.

Starting with a general and encouraging statement on the need to support basic and applied biomedical, technological, clinical, epidemiological and social science research, the text of the Programme of Action moves to put a major emphasis on the development of new contraceptives. This concern with new contraceptives involves a positive orientation for methods that are safe, acceptable, culturally appropriate, free of side effects and more directed at males. However, it reveals a bias that still sees reproductive health in terms of its family planning component. There is a pressing need for research that is directed to the other components of reproductive health, particularly reproductive mortality, to guide the formulation of an informed population policy cognizant of the real needs of women in various regions and communities.

The promotion of reproductive health by the UN presents many challenges to the policy makers and medical professionals in the field of public health. There is need for research on other components of reproductive health, particularly on reproductive morbidity. There is a need for reliable measurements of the prevalence of reproductive morbidity of various kinds, and for a more adequate assessment of what are the real needs of women in various regions and communities. One has to be cognizant of cultural and social context of health in developing public health programmes at the community level. These need to take into account the particular conditions that tend to deter women, particularly the underclass women, from taking advantage of available medical services. More effort is needed to develop an interdisciplinary approach to problem solving along with a holistic approach to health generally, and reproductive health in particular. There is need for closer collaboration between various disciplines and between advocacy groups, researchers, and health policy makers and medical professional.

A concluding observation to make about the process of preparation for the 1994 International Conference on Population and Development is that it opened the door for contribution of the non-governmental community which made its impact on the World Programme of Action. Particularly the voices of feminists and health advocates have been heard and we see reproductive health of women solidly placed within the perspective on health of the international community on population and development.

This process of preparation raises the question of the delicate balance between advocacy and research. If advocacy can be heard then it has the responsibility to educate itself through sound research. The scientific community has the responsibility to be involved in advocacy for change, but must guard against being too strongly led by it. For through interdisciplinary research and collaboration, the scientific community has the primary responsibility to contribute the knowledge base which is necessary to guide population policy through the difficult task of addressing the needs in population and health.

The development of population policy is a complex process with many players. The scientific community must know how to play its role.

Status of Women, Population and Development
Marvellous Mhloyi

This lecture concerns the status of women in questions of population and development. After defining the terms, the status of women is discussed in relation to population (fertility and mortality) and then in relation to development.

Definitions

Development is defined as a process of improving quality of all human lives, and it entails three aspects: (1) raising people's living levels by increasing their incomes and consumption of food, medicine, education and other social services; (2) creating conditions conducive to the establishment of social, political and economic systems and institutions which promote human dignity and respect; and (3) increasing people's freedom to choose by enlarging the range of their choice variables.

Status incorporates power, prestige and prosperity which are often differentially acquired by men and women. These in turn are a consequence of the acquisition of other things like education, health, food, water, fuel, technology, skills and wages. The status of women also involves the realization of strategic interests with regard to the underlying structures of subordination and inequality. In particular, equality between men and women includes the equivalent autonomy in decision making with regard to personal affairs.

Systems, of which women are invaluable components, have so marginalized the majority of the world population that the re-ordering of such systems needs empowerment of both males and females to release them from the cultural entrapments embroidered by female submissiveness. If meaningful progress is to be realised, a gender sensitive approach in the socio-cultural, economic and political arena is necessary especially in the world's most disadvantaged nations.

The status of women must not be discussed without cognizance of the socio-economic and cultural milieu within which marriage, family roles and obligations are determined. Under some conditions, it makes sense that men and women have different roles. In the most traditional socio-economic context, hunting and gathering are typically specializations of men and women respectively. While development changes these *conditions*, the changes in *positions* of men and women is gradual and incomplete.

Sending Boys and Girls to School

While education of women is clearly an important element in development, giving priority to the schooling of boys is often seen as the best solution in terms of dealing with economic hardship. Daughters are often perceived as temporary children, who will change their allegiance at marriage. Because women in most of the developing world acquire status and security through sons, they too invest more in sons. Daughters may opt to leave school in order to give a chance to a brother who will be the future father should one encounter marital problems.

Status of Women and Fertility

Education is the status variable with the most pervasive influence on fertility. In a traditional socio-economic context, children have a number of desirable properties as security against diverse and variable risks ranging from health to food. Education affects fertility in a variety of ways.

In terms of the demand for children, education prepares women to respond to more opportunities which provide alternatives to the status and security derived from children. It impacts indirectly on fertility by stimulating aspirations for higher standards of living and increased investment in fewer children, while increasing the opportunity costs of children. It also prepares women to challenge traditional values, and weakens the authority of the old over the young.

In terms of the supply of children, education delays age at marriage. For instance, data from 15 African countries show that age at marriage ranged from 15 to 21 years for uneducated women, compared to 21 to 26 years for women with at least seven years of education. Education reduces both the economic and subjective costs of fertility regulation. Education of the mother reduces fertility by depressing infant and child mortality. Finally, education is shown to increase husband-wife communication with consequent joint decision making and reduced fertility.

Employment of women also influences fertility, but to a lesser degree. Women's participation in the formal sector reduces their dependence on others, provides alternative sources of social identity and security, increases their desire to delay marriage, motivates women to terminate unsatisfactory relationships, and encourages them to space and limit births. Other important elements include the gender-based inequities in the labour market, and the ability not only to earn income but to control the product of their labour.

Status of Women and Health

Education of women has been shown to have a strong effect on child mortality, nutrition, overall household health and school achievement. Education impacts on a household's well-being directly due to increased knowledge regarding diseases and indirectly via its enabling effect on access to jobs and credit facilities.

Low status of women enhances the spread of the AIDS pandemic. Education about low risk behaviour is necessary but not sufficient to enable women to avoid infection from sexually transmitted diseases including HIV. However, low risk behaviour can only materialize in the long term, after radical reconstruction of the gender paradigms and social constructs.

In the short term, current intervention strategies which are aimed at reducing heterosexual transmission are based on safe sex, which includes the following components: abstention, non-penetrative sex, reduction of sexual partners, mutual monogamy and condom use. It is worth considering these in turn, because socio-economic and cultural constraints largely prevent women from fully utilizing these interventions.

Abstinence is often targeted at youth. This strategy has limited effect if women are not free to avoid sexual encounters, especially with older male patrons. A recent development is the aggressive seduction of young women by older men with the assumption that these girls are free of HIV. Among the adult population, abstinence is a sexual practice this is largely limited to the postpartum period.

As a strategy for women, reduction of sexual partners is not particularly relevant. Most women get infected because of their spouses' risky behaviour. For most of the women who are not monogamous, having multiple partners is a survival strategy for themselves and their families in the context of their economic marginalization.

The most common public health advice that women get as protection against HIV infection is condom use by their male partners. This advice is heavily constrained by the social politics of sex where the implicit questions about the husband's sexual behaviour can bring rejection, stigmatization, economic reprisals and even violence. For women who are in abusive relationships, the risk of introducing the idea of condoms may be more immediate than that of contracting HIV. For women seeking to become pregnant, condoms use presents obvious incomparability. For those women who sell sex, there is often little choice in the face of male patrons who refuse to use condoms. For all women, sexual coercion represents a further risk factor which negates any effort to practice safe sex.

Another risk factor is STDs which enhance the transmission of HIV. Here, the reasons for not seeking care include non-availability of doctors, cultural inhibitions, communication barriers in consulting male doctors, lack of time and money, and feelings of shame regarding their physical conditions. Widespread misconceptions also represent barriers: that STDs occur primarily among promiscuous adults, that their diagnosis and treatment is complex and expensive

Given that HIV women are given a poor prognosis resulting from pregnancy, abortion services become essential. Yet abortion is one of the most neglected health and human rights problems in the world today.

The second contraceptive technology revolution should be aimed at the development of contraceptives which can protect women not only from getting

pregnant, but also from disease. The goals should involve methods which women can control, including effective means that women can use to terminate pregnancy in the privacy of their homes. Women know best, it is their bodies, lives, and children's lives at stake.

Status of Women and Economic Development

Poverty, along with cultural beliefs about the roles and value of women, all conspire to deprive females from infancy of the very resources they need to be productive members of society, and thus engender economic dependency on men. For instance, son preference can affect the distribution of food in families, the availability of resources for health, and the opportunities for education.

"Women in development" policies encourage women to expand their economic activities, but also require substantial time and effort for marginal improvements in income. The work that women may do is often undervalued. Mechanization in agriculture is often handed over to men while women stay with the hoe in hand. Development interventions do not take into account, nor do they help change, inequalities in gender responsibilities for child care and household maintenance.

Equal opportunity does not emanate solely by removing the differences in the *conditions* of women and men. It also requires changing their *positions*. For instance, women held only 11% of seats in the world's parliaments in September 1991. They hold only 3.6% of top management positions of the United Nations. Being the pillar of families, and indeed of communities and nations, women bear the brunt of the deteriorating world economy as they continue to over-extend themselves with a consequent negative effect on their health, and those of their family members. Investing in women will save the human fold; it will reduce disease and fertility and consequently enhance the qualities of our respective populations; it will enhance and sustain development.

Questions and Answers

1. *How about giving more importance to men as potential agents to prevent AIDS.*

I am not giving up on men. We should not assume that there is a divergent interest. I do not picture a world divided by sex. But it is extremely difficult to tell your husband that he should use a condom, that you think he may have other relationships. I am not giving up on men, but women need a method to prevent AIDS.

2. *In Egypt there are less than 100 cases of AIDS and they are mostly imported. We may have economic problems but not problems in values.*

Everyone tries to say that AIDS is for people who are not like us. It will penetrate into a community more rapidly if people deny its existence. It is easy to sit comfortably in one's judgement. But serious and responsible efforts are required to try to stop the spread of AIDS. It is good if there are few cases, but do not be comfortable in your cultural isolation. Be careful.

3. *Fidelity between husband and wife would save both of them. It is not the right of women to practice safe sex to prevent conception. Abortion is a sin, we reject it.*

It is true that monogamy would render HIV impotent. It is also true that religion is the right place to talk about monogamy. But religion also acknowledges the presence of sin. No religion encourages promiscuity, prostitution or abortion. But even if people are religious, there is sin. If we are religious, let us help people not to die in sin by finding ways to reduce the spread of AIDS.

4. *Why do women have to be educated to be competent. Women should not be dirtied by capitalism. A woman can speak to a man with her heart, "heart to heart", she does not need to know mathematics and demography.*

In that logic, why not let it be the man who is uneducated and unemployed.

5. *If someone else's shirt is dirty, it will not help that I wash my shirt. We cannot combine the whole world under one law. Abortion in Islam is only for an emergency. Generalisations are very dangerous.*

You are very right, respect and tolerance are very important, we must learn from each other. But religion is often static while life is changing.

Population and Environment: From Rio to Cairo
Samuel Preston

The old Malthusian preoccupations concerned the chronic population pressure on natural resources which were seen to condemn the masses of population to a barely subsistence life. With the economic affluence in the West, these preoccupations have shifted to concerns regarding the balance of the ecosystem or, to put it simply, concerns for a healthy environment. These concerns, brought to worldwide attention at the Rio Conference on environment, have been echoed at the Cairo conference as well.

Much of the growth in attention to environment issues in the West is undoubtedly result of increased affluence: ordinary people have come to expect standards that were previously the exclusive province of the rich or well-born. Since the markets that helped to produce affluence did little to protect citizens from industrial waste products, a catch-up phase of government activism was initiated. In addition, the ethical systems have been changing in ways that place higher value on the maintenance of a natural order, including survival of other species.

What is known about the effect of population growth on the quality of the environment, first with regard to land transformations and food production, then with regard to industrial pollution?

Land Transformations and Food Production

The food needs of a growing population can be met either through expansion or through intensification of land cultivation. The first approach has prevailed since the dawn of agriculture, and is still largely a current practice in many developing countries. As the cultivated land has expanded, the amount of forests shrunk. The extent of reduction in forests is still a matter of dispute. According to data assembled by World Bank (1992), 58 countries out of 99 sampled, have less forest cover in 1989 than in 1965. In Asia, with its high density population, it is estimated that 82% of the land that could be used to grow crops is already cultivated.

The direct relationship between the growth of population and the rate of deforestation is difficult to establish statistically. However using some partial statistical evidence and common sense, it could be argued that there is little reason to doubt that faster rates of population growth will produce faster rates of deforestation.

Institutional safeguards and control of access to the forest are needed to curb deforestation. Experience in China and Japan are revealing in this regard. In China the pressure of population on land resources, combined with weak administrative structure, led the peasants to pursue their short term interest of clearing forest to the point that by the nineteenth century that country has been almost denuded of its forests. By contrast, in Japan the government, both feudal and imperial, managed largely to preserve forest resources.

The alternative to extensification is the strategy of intensification in the exploitation of the cultivated land, so as to maximize the yield per unit. This can be achieved by introduction of new crop varieties, irrigation, fertilization and other modern capital intensive devices of agricultural production and agronomy. Increasingly this strategy has supplanted extensification in the economically advanced countries. In Europe the total food production has increased between 1966 and 1983 while cropland fell by a quarter and the total forested area grew by 30%. Similar trends are observed in the United States where a 30% shrinkage of cropland is projected over the 1982-2020 period.

Impact on Environment

Both extensification, with associated deforestation, and the intensification of the land use can produce severe ill-effects on the land under cultivation and more generally on the environment.

Among the more significant ill-effects of deforestation one could cite soil erosion, climatic change, desiccation of soil, and disappearance of fauna and species. Perhaps the most ecologically damaging component of intensified agricultural production is the expansion of irrigation. Water is becoming a commodity under strain from growing competition for its use. Already 70% of fresh water used by humans is diverted for irrigation. The degradation of soil through increasing salinity and overuse are some other consequences of the intensification of the land exploitation.

The prospects for agriculture in developed regions are not unremittingly grim. ... The fact that the real price of food has been declining through most of the 20th century is the best indication that agricultural systems have been able to keep up with both population growth and the rising demand for food induced by affluence.

Nevertheless these innovations require a degree of institutional responsiveness that may not exist in many developing regions.

...there are few parts of the developing world where prospects for the food/population balance would not be more favourable if the population were growing more slowly.

Industrial Pollution

The role of population growth in producing industrial pollution is less obvious than in the case of agrarian transformation.

The impact on the environment I (for any kind of pollutant) is a function of population P, affluence A (i.e. per capita GNP), and technology T.

$$I = P A T$$

The relationship may be expressed in either absolute or relative terms, i.e. growth rate.

However, couched in these terms, the formula can be misleading in measuring the impact of population growth on industrial pollution, such as carbon dioxide emission. For one thing, the formula as stated does not account for the interactions between the variables on the right side of the identity, i.e. population, technology and affluence. One way to capture these interactions and by implication to explore the direction of causality, is to restate the formula in terms of the variance of a sum of three growth rates.

This modified formula has been applied to measure the sources of carbon dioxide emissions in nine regions of the world over the 1980-1990 period. The results are interesting. Population growth seems to play a secondary role as a source of pollution growth. By far the greatest impact is generated by technology. The impact of affluence as a factor in pollution is ambiguous. On the one hand technology and affluence go together. But on the other hand, more affluent countries tend to use less pollutant technologies. Countries with faster rates of economic growth experience slower, often negative, growth rates of carbon dioxide emissions per unit of GNP.

Though population growth may play a secondary role in accounting for variation in changing levels of environmental hazards produced by industrial processes, policies aiming at slowing down population growth, represent a cost-effective component of a global strategy.

Two further points need to be noted. First, the benefits of the family planning program presumably extend to many other domains than reducing carbon dioxide emissions. The tendency among scientists and policy makers to divide the world into many highly discrete problem areas can lead to serious biases against initiatives, such as family planning programs, whose benefits may extend across many sectors. Second, the widely recognized momentum of population growth cuts both ways. While the momentum reduces the apparent advantages of lower fertility in the short run because much of population growth is already implied in the age structure, this same momentum may increase the advantages of lower fertility in the long run. The fact that population growth is a ponderous process means that whatever happens today has multiplier effects in each successive generation. In a very real sense, today's births are tomorrow's momentum. The more concerned we are with long-range futures, the more important are population policies in the array of strategies for enhancing the human condition.

Even if population growth were playing a minor role in producing a particular problem [carbon dioxide emissions], population policy may provide one of the most cost-effective ways of addressing it.

The more concerned are we with the long-range futures, the more important are population policies in the array of strategies for enhancing the human condition.

Poverty and Population
Massimo Livi-Bacci

Three approaches can be used to link questions of poverty and population. The first approach is descriptive, considering questions about the number and characteristics of the poor. The second is at the macro level, in considering the relation between the rate of population growth and poverty. The third approach is at the micro level, in considering how demographic behaviours (especially marriage, fertility, migration and health status) affect either the decline into poverty or the ability of individuals, families or groups to escape poverty.

Demography of the Poor

The first approach is in effect the demography of the poor. Adopting the World Bank definition of 'absolute poverty' as the inability to attain a minimal standard of living, we find that about 30% of the population of the developing countries, or 1.1 billion people, are below the poverty line. Although the proportion poor has declined slightly, the absolute number of poor has increased. Poverty is concentrated in rural areas. Other typical characteristics include above average household size, above average fertility (because of lower mean age at birth of the first child, higher mean age at birth of the last child and shorter birth intervals), a higher incidence of morbidity and mortality (because of infectious diseases at all ages but particularly during the first years of life). Poor groups have higher fertility, mortality and family size than less destitute sectors of the population.

Macro Level: Population Growth and Poverty

The second approach considers the macro level effect of population growth on poverty. Does rapid population growth produce poverty or make it more difficult to move out of poverty? The implicitly expected answer is yes, rapid population growth generates poverty through the obvious effect of capital dilution and the obstacles it poses to investment and accumulation. The evidence is much more complex, however.

One cannot deny that poverty is associated with rapid growth since the poorest areas of the world have the most rapid growth while the richest areas are approaching zero growth. But association is frequently misunderstood for causation. Here, one school of though argues that poverty generates high demographic growth, while the other argues that high demographic growth generates and perpetuates poverty. But assignment of the direction of causation remains a sterile exercise for many closely interacting phenomena.

Consider how level of wealth and demographic growth may be rather different depending on the stage of the demographic transition in two societies. If one compares a pre-transition society to one that has begun the demographic transition, one would often find that the pre-transition population is poorer but growing very little, while the transition society is richer and growing more rapidly. Here, demographic growth and level of wealth are positively related. However, at a subsequent point in time, the first of these two societies will be poorer and growing more rapidly as it enters the demographic transition, while the society that entered earlier into the transition may be richer and growing less rapidly. Now demographic growth and level of wealth are negatively related.

There are other ways of appreciating questions of poverty through the demographic transition. The early stages of the transition involve an increase of the ratio of children to parents. This may represent a stress on consumption, relative to production, and it may undermine investments in children. At the later stages of the transition, an increase in the old to adult ratio can bring about a negative pressure on the living standard of the elderly. In rural societies where

the old depend on the support of their children, the problem may be worsened by the separation of kin through mobility. These two examples of the negative pressures exercised by the transition on the well being of people does not mean that they will not be more than offset (at the macro level) by other advantages brought about by the transition. They certainly will. But the transition itself brings about specific trends that might be at the root of new forms of poverty.

Historical evidence from Europe supports a relationship between population growth and poverty. Confirming Malthus, declining mortality, steady fertility, and increasing population pressure on land were powerful factors of distress of the rural populations throughout Europe in the 19th century. Similarly, in today's developing countries, rapid and accelerated rates of population growth have been associated with poverty in the rural areas. Accelerated growth means an increase of the labour force in agriculture. Where land is scarce and increases in labour input are not effective, an increase of the labour force in agriculture can mean a growing number of landless people, and among them an increasing number of poor. Clearly, there are many possible escape routes, especially increasing the land in use (e.g. Thailand, Philippines) land re-distribution (e.g. China), and expansion of the non-primary sector (e.g. Korea, Taiwan). Emigration to the Americas provided an escape route from the rural areas of Europe in the 19th century, as for other contemporary countries (e.g. Egypt, San Salvador). However, this option is precluded for the large majority of Asian populations of our times.

MicroLevel: Considerations for Individuals and Societies

The third approach considers the relationship at the micro level in terms of demographic behaviour and well being. We are concerned here with ways in which demographic behaviours affect the risk for individuals, families or groups of descending into poverty or the chances of moving out of poverty. These can be considered in the areas of mortality, fertility and migration. In each case we can consider demographic behaviour both at the individual and aggregate levels. At the individual level, demographic phenomena can determine the ability of persons to escape from poverty or achieve well being. At the aggregate level, these phenomena are possible mechanisms that ensure the flexibility that is essential for survival and well being of human populations. The greater the flexibility, the larger the options that societies have in responding to constraints.

Mortality and Healthy Survival

At the individual level, nutrition, control of communicable disease and access to medical knowledge and technology can be thought of as intermediate variables of health and survival. These intermediate variables are each clearly linked to the more distant causal factor of poverty and economic well being. In earlier times, this link was less obvious, since the mortality of elites was almost undistinguishable from that of the rest of the population. In this century the situation is radically different: survival and well being are positively associated,

and poverty thrives in low survival populations.

Another factor is equally important: with improved survival the processes of life become orderly, different from the disorder implicit in high, random and unpredictable mortality. A low level of survival implies a high degree of instability in planning for the future, it jeopardizes long term relations with other individuals, and increases the risk of investment in people. Improved survival means a reduction of disease, orphanhood, widowhood and loss of a family member, events which are closely associated with the fall into a state of poverty and destitution. When these events become less frequent, an important poverty-producing mechanism is laid to rest.

At the aggregate level, the 'normalization' of life brought about by lower mortality is a crucial factor of development. Clearly, more healthy years lived, more physical efficiency, and better intellectual skills resulting from better health, are important to development.

Enormous progress has been made in life expectancy. Forty years ago, two-thirds of the world population lived in countries with an expectation of life below 60, as against little more than 30% today. However, it is not just life expectancy that needs to be considered. We must consider the years of life lost not only because of premature death but also because of disability produced by diseases and accidents. The World Bank calculates that there were 1.362 billion years of healthy life lost in the world population because of premature deaths, diseases and accidents that occurred in 1990, or 259 years per 1000 population. By world region, this figure ranges for 575 years per 1000 population in Sub-Saharan Africa to 117 years in the western market economies.

Fertility and Reproduction

Through marriage and family formation, individuals minimize the risk to life. Through reproduction individuals insure themselves against abandonment and destitution in old age. Mortality decline has made reproduction less costly and more efficient for parents from the biological point of view; it has decreased the waste in parental investment efforts.

Poorly regulated fertility is also a poverty-generating phenomenon. In particular, it increases those births that are likely to be associated with destitution: births outside of stable unions, births to very young mothers that pose an obstacle to their education, births after very short intervals that affect the health of mothers and children, and births that increase the competition for scarce resources or dilute parental investment.

At the aggregate level, inadequate or unregulated fertility pose problems for societies. Inadequate reproduction endangers the very survival of the group. Unregulated reproduction increases the relative proportion of children compared to adults. In the Western European system, fluctuations of the marriage rate kept population from growing too quickly in economically difficult periods, or

accelerated its growth during periods of prosperity or after catastrophic events that opened niches and possibilities of settlement. In other societies, birth spacing exercised a similar regulatory function. However, humanity is now a much faster vehicle than it used to be and it needs a much stronger breaking system than in the past. Modern contraception provides the system. It is especially when the efficiency of contraception is lower, typically once the demographic transition has begun, that the effects of excess fertility on poverty-generating mechanisms are higher.

Migration and Mobility

The ability to move, migrate and settle is another important form of demographic behaviour. Through mobility people can adapt to constraints; they can escape danger and poverty.

For individuals, the absence of mobility is not by itself correlated with poverty, but we may easily posit that absence of mobility impairs the optimal allocation of human resources and precludes one of the most efficient routes of escape from poverty.

At the aggregate level, migration is also an important mechanism of adaptation to the changing distribution of economic opportunities over space. A migration system that is not operating efficiently will produce an improper allocation of human resources and consequently a lower level of economic efficiency. International migration is now a much less efficient mechanism than it used to be. The logic of the national state and of its substantial integrity has imposed a different logic. Nowadays migration is acceptable and possible only when in agreement with the interest of the receiving state. Sometimes this logic has forced a retreat to original homelands and imposed a redistribution process that reduces economic efficiency. Restrictions can also occur at the internal level, thus further restricting the scope of migration as an instrument for the optimal combination of human and natural resources.
My main conclusion in terms of a guideline for long-term policy is the following: The main priority in order to improve well being and fight poverty is healthy survival. It is a prerequisite for almost everything that goes along with development:

- *for acquiring physical efficiency,*
- *for achieving intellectual ability and skills,*
- *for extending the time horizon and for planning the future,*
- *for changing the demand for children and therefore for fertility control.*
- *for minimizing those events that are associated with poverty, such as orphanhood, widowhood, disability.*

Returns in terms of increased survival and increased health for every dollar spent on infrastructures (water, sanitation) or appropriate medical intervention are high. The decline in mortality has triggered the demographic transition; further improvement in healthy survival will accelerate its termination.

Population and Conflict
Thomas Homer-Dixon

The objective of this paper is to show the influence of population size and growth on conflict defined as large scale civil or international violence. While the relationship is complicated and involves many intervening variables, recent research has identified some common causal patterns.

Three models are used to demonstrate the influence of population on conflict.

I. Differential growth and group identity conflict

This model is based on conflicts that have an ethnocentric character where groups perceive rapidly growing populations as a means to power. When two very different groups, whether in terms of ethnicity, religion or nationality, are proximate to each other and one grows more rapidly than the other, the fear of extinction may cause conflict.

The group that feels threatened might respond in two ways:

a) It may try to increase its population. However this response can produce a "population race" as each group tries to increase its population.
b) If the group has enough power, it might try to control the size of the other group through deportation, exclusion or extermination.

II. Lateral pressure and interstate conflict

The second model developed by Choucri and North describes how population size and growth can contribute to resource scarcity and lead to conflict. The authors point to the interaction of four variables within a country:

1. population size
2. lack of technological development
3. resources available in the country
4. resources available outside of the country

Using three of these variables, they classify the countries according to four categories:

Type A: large population, low technology, low resources
Type B: large population, high technology, low resources
Type C: large population, high technology, high resources
Type D: low population, high technology, high resources

According to Choucri and North, a country in the B category with a large population and technologies that need more resources than available within its borders will try to expand. Although external resources can be obtained without

conflict, for instance through trade, at other times conquest may be used (e.g. Germany before and through WWI and Japan in the 1930s).

However, there are problems with this model as it does not look at the effects of population size and growth on domestic stability. It also assumes that high technology leads to higher consumption which we now know is not always true. A third problem is that this model does not distinguish between renewable and non-renewable resources. Recent research indicates that conflicts are more likely to follow a scarcity of non-renewable than renewable resources, other than river water.

III. Environmental scarcity and civil conflict

The third model shows how the size of a population and its rate of growth can lead to scarcities, especially of renewable resources like cropland, water, forests and fish. Scarcities can, in turn, cause negative social effects - like economic decline, large scale population movements and weakened governments - that produce forms of civil conflict, including ethnic clashes, insurgency, riots, coups d'etat and revolution. Although these would occur mainly within a country, they can have international repercussions.

Renewable resource scarcity can come from three sources: supply induced (environmental change), demand induced (environmental scarcity) and structural (change in the relative access of different groups to the resource).

Environmental Change

Environmental change refers to a human-induced decline in the quantity or quality of a renewable resource. The total effect of human activity on the environment in a particular ecological region is a function of two main variables: first, the product of total population in the region and of use per capita of each of the technologies available to the population, and second, the vulnerability of the ecosystem of that region to those particular technological activities. The degradation and depletion of renewable resources might cause social effects such as large scale out migration or increased impoverishment. These social effects can in turn lead to social conflict: migrating groups often stimulate ethnic conflict in receiving regions, and people who are suffering increasing economic hardship often join insurgencies against the state. Ideational factors also play a crucial role in determining not only the nature of the physical activities pursued in a society, but the vulnerability and adaptability of the society when faced with environmental stress, and the likelihood of conflict.

Environmental Scarcity and Structural Scarcity

Besides these supply induced scarcities, demand induced scarcity can arise through an increase in demand for the resource and through a change in the relative access of different groups to the resource. Demand-induced scarcity is a

function of population size multiplied by per capita demand for a given resource. In this article we look only at demand induced scarcities caused by population growth.

Structural scarcity is brought about by the unequal distribution of resources. Some groups have access to a large proportion of the resources, reducing availability in the other groups. Many factors can change the social relations and property rights governing resource distribution, including large-scale development projects, new technologies that alter the relative values of resources, and external economic pressures.

These three sources of scarcities can interact and reinforce each other. Evidence suggests that supply induced and demand induced scarcities cause greater harm when they interact with unequal resource distribution. For instance, reductions in supply of resources can combine with increases in demand to encourage powerful groups to shift resource distribution in their favour. This can produce dire environmental scarcity for poorer and weaker groups (resource capture) or migrations to regions that are ecologically fragile (ecological marginalization).

Civil Strife

The three sources of scarcity - decreases in supply caused by decreases in the quality and quantity of a resource; increases in demand caused by population growth, and unequal resource access - can act singly or in various combinations to lead to civil strife. A scarcity of environmental resources such as cropland, water, forests and fish can reduce economic productivity both for local groups and larger economies. The affected people may migrate or be expelled to new lands. Migrating groups can trigger group-identity conflicts, while decreases in wealth can cause deprivation conflicts. The migrations and productivity losses may eventually weaken the state, which in turn decreases central control over ethnic rivalries and increases opportunities for insurgents and elites challenging state authority.

Sensitivity to Context

However the context in which the society is evolving is very important and affects the strength of the linkages between scarcity and conflict. For instance migrants who are often weak and marginal in their own society need the backing of a state, either the one where they migrate or another, to enable them to organize and have enough power to create conflict.

The state may be weakened because scarcity increases financial and political demands on governments. For instance, resource loss may reduce the incomes of elites who consequently seek state compensation. Scarcity also expands marginal groups that need help from government. Consequent state intervention in the marketplace can concentrate power. At the same time, state revenues may decline, widening the gap between demands and state capacity, eroding the state's

legitimacy.

Research on civil conflict shows that it is a function of both the level of grievance of particular groups and the opportunities to act on these grievances. Many factors can influence these two variables such as environmental scarcities which could cause severe and prolonged economic crisis thus exacerbate grievances and weaken institutions which would create opportunities. Conflict occurs when the challenger groups believe that someone or a group is responsible for their situation and there are no peaceful solutions. The probability of civil violence is higher if groups are already organized around clear social cleavages, such as ethnicity, religion, or class.

IV. Conclusions: The Ingenuity Gap

The three models outlined above are supported by examples of international and civil conflicts seen around the world. However this does not mean that strife is inevitable. In particular, management of resources can improve, or dependence on them can be altered through trade. If either strategy is to succeed, a society must be able to supply enough ingenuity at the right places and times. Technical ingenuity is needed to develop new technologies that compensate for environmental loss. Social ingenuity is needed to reform and create institutions that buffer people from the effects of scarcity. Social ingenuity includes the system of markets, legal regimes, financial agencies and educational and research institutions.

However, this will be more difficult for some societies where resource scarcities are the greatest. At the same time that resource scarcity is boosting the demand for ingenuity, it may interfere with the very supply of this ingenuity. Poor countries start at a disadvantage: they are underendowed with social institutions, including the productive research centres, efficient markets, and capable states, that are necessary for an ample supply of solutions to scarcity. Moreover, these countries' ability to create and maintain these institutions may be diminished by the very population and resource stress they need to address. This is because scarcity often causes intense rivalries among interest groups and elite factions that impede the development and delivery of solutions to resource problems.

Workshop on Population, Environment and Security. A Summary

Organized by the Federation of Canadian Demographers and held in conjunction with the IUSSP Distinguished Lecture Series during the International Conference on Population and Development, the workshop on Population, Environment and Security brought together the Distinguished Lecture Series speakers and some 20 other persons associated with the Series. The focus of the workshop was on the interaction of the variables mentioned in the title, as described in the distinguished lecture on Population and Conflict, along with other research and views on these issues.

Michael Shenstone, former Canadian ambassador, opened the workshop by presenting some concepts of security in the 1990s to put the discussion in context. During the cold war period and before, security was seen primarily in the context of nation states rather than people. Although these preoccupations have not gone away with the end of the cold war, security challenges are now much more diffuse. They can have many causes such as the wider nuclear proliferation or the consequences of internal conflicts. There are also new kinds of previously unacknowledged security challenges such as resource depletion and other environmental issues, racism, drugs, internationally based crime and unchecked population growth.

Another concept is human security or the security from fear and want of ordinary people. Certain threats to human security are slow acting and persistent, others sudden and catastrophic. But more and more they are global, arising from problems that spill across national borders or that arise from disparities across countries.

This update on the concept of security launched the discussion which focused on conflict and its causes. Most participants did not fully agree with Homer-Dixon on the importance of population growth as a source of conflict, and stressed other variables such as inequalities and local policies as being overriding factors.

These questions of population and security involve a difficult area of study, where interpretations of the past, present and future conflicts can highlight various possible factors, making it hard to attribute proper causal weight to given variables. Without agreeing on the importance of population growth, participants also favoured slower growth as a means of alleviating conflicts.

Several variables were discussed as causal factors and the ones that were suggested most often can be divided into two groups: ethnic configuration along with migration, and inequalities in political and economic opportunity. Several participants used the term "security" rather than "conflict". Homer-Dixon noted that the concept of security is rather broad and not too different from that of "socio-economic well-being", while it is also important to focus on violent conflict.

Ethnic Configuration and Migration

Whether ethnic diversity or large scale migration will bring about conflict depends on whether the states are strong and on the polices adopted. The probability of conflict increases if the state is weak or if the migrant is not fully integrated and given the same privileges as the local population. This applies in countries who adopt the "law of the blood" rather than the "law of the land". That is, the potential for conflict is stronger in the former case because differentials in status are systematically maintained over generations.

It was noted that several countries, particularly in Europe, had closed their borders to immigrants and that eventually, though perhaps not in the near future,

these countries will have to reverse their decision as they will need immigrants to counter their low birth rate. The movement towards free trade is good, however there can be a threat to security if the exchange of goods and capital occurs along with prohibitions on the movement of people.

Much remains unknown regarding immigration, and more research should be undertaken regarding integration and absorbtion rates. It was also felt that countries of reception should study what migrants bring to the local population in order to change the perception that migrants only bring unemployment and other problems.

It was also said that migrants can be a threat to security when they regroup in the receiving country and work to overthrow or destabilize the government of their country of origin. This security threat should be further analyzed.

Inequalities or Political and Economic Environment

To most participants, a major cause of conflict involves inequalities that are found within a country. Although poverty can be a problem when populations are not rich enough to develop or import the technologies permitting investments in the environment, the potential for conflict is more serious when the resources are concentrated in the hands of a small minority. Consequently, the political and economic environment is more important than the natural environment as a source of conflict.

The example of South East Asia was presented whereby the capitals and major cities of the region are the core areas of economic development and this has attracted rural migration to these cities. When they arrive, migrants often settle in squatter areas, living in sub-standard conditions, and are effectively left out of the rapid economic growth of these cities.

Small land holders, subsistence farmers and ethnic minorities are also marginal groups to the economic growth taking place in South East Asia. National governments see the existence of autonomous tribal populations within their boundaries as a threat to their authority and a possible route for aggression by foreign powers. As progress continues, governments develop new legislation which seeks to enhance the livelihood of the population, but it may not take into consideration the needs of these minorities.

The factors mentioned above need not necessarily lead to conflict. Even when ethnic in origin, conflicts most often have an underlying "have versus have not" component. These could be resolved by introducing new policies, technologies and trade practices. However it was noted that conflict can occur when very poor countries or groups do not have the resources necessary to access trade or to introduce new technologies, and they consequently feel trapped. The wealthier

countries can alleviate the threat by introducing immigration and trade polices that can alleviate these tensions.

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