

CEPAL

Review

Director
RAUL PREBISCH

Technical Secretary
ADOLFO GURRIERI

Deputy Secretary
ROSA NIELSEN



UNITED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

SANTIAGO, CHILE/AUGUST 1984

CEPAL

Review

Santiago, Chile

Number 23

CONTENTS

Latin America: crisis and development options <i>Enrique V. Iglesias</i> , Executive Secretary, ECLAC	7
Institutional elements of a new diplomacy for development (Notes for a book of memoirs) <i>Diego Cordovez</i>	29
Orthodox adjustment programmes in Latin America: a critical look at the policies of the International Monetary Fund <i>Richard Lynn Ground</i>	45
The adjustment process in the eighties. The need for a global approach <i>Carlos Massad and Roberto Zahler</i>	83
Global monetarism and destruction of industry <i>Victor E. Tokman</i>	107
The structural crisis in Argentine industry <i>Adolfo Dorfman</i>	123
Population, resources, environment, development interrelationships in the United Nations: in search of a focus <i>Branislav Gosovic</i>	135
Participation: the view from above <i>Marshall Wolfe</i>	155
Recent ECLAC publications	181

Population-resources-environment-development interrelationships in the United Nations: in search of an approach

*Branislav Gosovic**

The International Conference on Population is meeting in Mexico in August 1984. It is to discuss "selected issues of highest priority", with a view to contributing to the evaluation and further implementation of the World Population Plan of Action. One of the "issues of highest priority" that were singled out concerns the interrelationships between population, resources, environment and development. The purpose of the present essay is to review this question, which, though it has been on the agenda of the United Nations for more than a decade, seems to have defied the attempts to delimit and tackle it firmly in theoretical, methodological, operational and policy terms. The specific intention here is to deal with the manner in which the problem presents itself in the United Nations and to probe—sometimes at the risk of over-simplification and generalization—the basic dimensions of this complex, polemical and often baffling topic of international concern and discourse. In the short space available, this is a risky undertaking. This essay obviously cannot do justice to and deal comprehensively with the wide-ranging subject matter, nor does it pretend to explore in depth the substance of the issue or the great many fine points and controversies involved.

*Staff member, Joint ECLAC/UNEP Environment and Development Unit. In writing the present article, I have drawn on my work for the United Nations on this subject, undertaken during my membership of the Joint ECLAC/UNEP Environment and Development Unit. Comments from my colleagues have been very valuable in finalizing the text.

Introduction

From time to time, given propositions and/or catchwords are launched, gain admittance into the international development dialogue and become foci of controversy and protracted debate. Lines of battle are drawn up, and the concepts acquire multiple and often dissonant meanings. The case of "basic human needs" is a well-known instance of this. "Population-resources-environment-development interrelationships" (PRED), is yet another broad and all-encompassing formula generating disagreements as to its meaning and intention, and causing difficulties when concrete responses to its challenges are sought, nationally and at the international level.

The complexity of the PRED discussions is magnified because of the interjurisdictional, multidisciplinary, and often longer-term, highly uncertain and holistic characteristics of the problems, and the lack of experience in how to deal with them. The emotional pitch and the degree of substantive and policy controversy tend to be high, with the subject matter offering fertile ground for clashes between world views, social paradigms and ideologies. Some of the underlying issues are central to an almost 200-years-old debate initiated by Malthus' work on the relationships between rates of population growth, the natural resource base needed to sustain it, and human happiness. Moreover, the present issue is in dispute in the midst of the conflictive, relationships between the rich North and the poor South, a circumstance which only adds fuel to the flames. The oft-heard arguments on behalf of quantitative and qualitative limits to development and economic growth, combined with overaggregation and simplistic extrapolation of given trends, and replete with alarmism and doomsday pronouncements, give further incentives for debates and disagreements.

In its basic dimensions, the problem—as old as the human race—is that of access to the resources and material base—including water, land, food, energy, minerals—necessary for the survival of a particular social unit consisting of a given population number at a given standard of living. At different junctures in history it was resolved (or it sorted itself out) through a variety of means, including wars, societal collapse, famines, ecosystem change, massive migrations, imperialism and subjugation of faraway places to the dominator's own needs, but also by virtue of

technological and scientific innovation and breakthroughs, social reorganization and change, and increasing international trade and specialization.

Today, in a situation of rapid world population growth, combined with the explosive and diversifying demands of the consumer society, with an increasing and ever more varied capacity to impact the environment and the natural resource base, and with the global repercussions of these impacts, plus the fact that some of the traditional ways out are no longer normatively acceptable (e.g., massive famines, permanent stratification of rich and poor) or feasible under normal conditions (massive migrations to new lands and rewriting the world's political geography), the issue is assuming new dimensions and is also becoming a topic of international concern. What accentuates its international dimension, and what is novel compared to the past, is the progressive meshing and interdependence of the various levels at which the problems in question manifest themselves (ranging from purely local, thorough national and regional to global), and the increased importance acquired by the world level.

Paradoxically, while the potential ability to resolve the attendant problems has never been as great as today, at the same time the potential for slipping into serious predicaments is also great. Indubitably, the dilemmas are aggravated by the global setting, which is characterized by

stratification into rich and poor, dominant and dominated countries, social groups and classes, and by international economic structures which are well defended and have not changed much in favour of the periphery since colonial times. Thus, in some of its ramifications this problem also assumes the attributes of a global class struggle.¹

The persistent controversies and the difficulty of getting a firm grasp of the subject and establishing an agreed framework for discussion and action surfaced once more in the deliberations of the Expert Group on Population, Resources, Environment and Development convened in Geneva in April 1983 as part of the preparations for the 1984 International Conference on Population.² This was almost ten years after the interrelationships item had been formally placed on the agenda of the United Nations systems.

The search for an approach and for agreement therefore continues. The present essay is intended to contribute to this quest. Its objective is to review the matter critically and to arrive at general conclusions which could help to identify some possible and promising lines of research and action in the United Nations system. The first step is to describe the genesis of the PRED interrelationships issue in the United Nations and its evolution on the United Nations agenda over the past decade.

I

Origins and evolution of the issue in the United Nations

The initial debates on environment and limits to growth, which originated and evolved primarily in the United States, assigned the leading role among the causes of the emergent problems to population growth, and reflected an unmistakable neo-Malthusian inspiration. People from different disciplines and walks of life contributed, united by a shared anxiety over rapid population growth in a finite environment and the limits set by the natural resource base on

¹For an interesting comment on this aspect of the problem, see Nathan Keyfitz, "World Resources and the World Middle Class", *Scientific American*, July 1976, pp. 28-35. The essence of the question posed by Keyfitz is "what is the size of the window through which the world's poor will climb into the middle class", on the assumption that the size of the opening is limited by the shortage in world resources. According to him, only new scientific and technical knowledge can accelerate entry into the high-consumption world middle class.

²For the wide-ranging and valuable background documentation presented at the meeting of the Expert

which these added population numbers would have to depend for their sustenance. Such dramatic and picturesque catchwords as "population bomb", "population explosion", "population plague", "standing room only" and even "people pollution" were used to epitomize the basic message.

Biologists, relying on models and theories derived from population dynamics in the animal world, provided simplistic, albeit heuristically useful inputs for the ongoing discussion and consciousness-raising process.

Natural resource economists, strategists and futurologists began to be seriously concerned about the exhaustion of some key natural resources. Their over-simple linear projections and world models projecting current trends, showed an obvious mismatch between the growing world population and its demand on the one hand, and the known reserves of some raw materials and food production capacity, on the other, eventually implying a profound crisis, if not the collapse of human society, should there be no change of course.

Ecologists and conservationists sounded the alarm regarding the pressures of the growing number of human beings and of society on the physical environment, nature, soil, forests and sensitive ecosystems, especially in the tropics and sub-tropics.

The vociferous population and planned parenthood lobby also played an important role in the alerting of perceptions. Preoccupied with population growth, especially in the Third World—an attitude which to an important degree fed on and fanned the traditional popular malaise in the North over the multiplying numbers of hungry and destitute in the South—it advocated birth control as a solution to most problems, including the pressures on the environment and the natural resource base.³

In the majority of arguments there was a

marked disarticulation between society—as the chief and adaptable mechanism for mediating between human numbers and the natural environment and resource base—and the manner in which the problem was formulated. The quantitative reductionism, the mechanical, naturistic and deterministic interpretation of the interrelationships, and the quantitative models used, did not readily allow the admission of "soft" variables into the discourse.⁴ In particular, they did not seem to show adequate—if any—sensitivity to history, to world political economy, and to the world divisions into rich and poor countries, and definitely suffered from what could be called "ethnocentric" or "hegemonic myopia". To what extent this was a result of conscious pursuit and defence of given interests, or simply a reflection of the societal context in which the arguments were formulated, is of course a moot point. What is obvious, however, is that the solutions proposed tended to favour some groups of countries over others.

From the heated rhetoric, mass of complex arguments and burgeoning literature two basic messages—oversimplified, as is usually the case—filtered through into the public and policy debate:

—Population was perceived unidimensionally as a threat, since the growing numbers, it was felt, would increase demands and pressures on the environment and the natural resource base and lead to their deterioration and exhaustion. Since the lion's share of world population and world population growth is in the South, this is where the danger lies and this is where urgent action should be taken to control and limit demographic expansion.

—It was held that economic growth, as we know it, could not continue indefinitely, as it would ultimately undermine its own foundations and bring about a collapse of modern Western civilization. Therefore economic growth must cease, and be replaced by a quantitatively and

Group, see United Nations documents IESA/P/ICP.1984/EG.111/1-26. Selected papers are published as *Proceedings of the Expert Group on Population, Resources, Environment and Development*, Geneva, 25 to 29 April 1983 (United Nations document ST/ESA/SER.R/55).

³See, for a typical example of such arguments and literature, L. Lader, *Breeding Ourselves to Death*, New York, Ballantine, 1971.

⁴This *déformation professionnelle* of given disciplines, which seek solace in the certainty of quantification and mathematical interpretation of social phenomena, has affected negatively the formulation of the issues and the search for solutions. Thus it has often happened that some logical lines of thinking were not pursued, while at the same time some obvious dead ends were given undue attention.

substantively different model of zero GNP growth or a steady-state model.

To the developing countries, the current discussion of population, resources and the environment sounded rather hollow and irritating, because, among other things, they perceived it as being directed at themselves and at their development aspirations. Their annoyance at the neo-Malthusians from the North, at the assignment of priority to the population variable, and at the strong pressures put on them to curb population growth was further accentuated by the muted racial connotations of some population control arguments and the thinly disguised imperialistic motivations of some writings on geopolitics, population and natural resources.

They also felt ill at ease with the limitations on their development objectives and aspirations and on their national sovereignty over their natural resource base, which were of topical relevance in the context of both their internal development efforts and their economic relations and confrontation with the industrialized North. To many developing countries (if not whole continents) which had an abundant natural resource base, a well-preserved environment and relatively low population densities, the way to the future and the fulfilment of their aspirations lay precisely in an active and positive interrelationship between population, resources, environment and development. It should not be surprising, then, that many of them suspected the attendant arguments to be yet another attempt of the rich countries to protect their privileges, preserve their dominion and maintain the *status quo*, keeping for themselves a disproportionate share of entitlement to global resources.

The population-environment issue became so controversial during the preparations for the Stockholm Conference that a deliberate effort had to be made to play down its importance during the Conference proceedings. The Declaration and Final Act of the Conference mention the population issue only briefly, in an effort to accommodate the opposing views, without, however, managing fully to conceal the underlying polarization.⁵

⁵The Declaration says that "the natural growth of population continuously presents problems for the preservation of

In sum, then, the early discussions and formulations of the population-environment-resources problem branded the issue with a neo-Malthusian imprint: a stigma which it has been difficult to wipe out. Since then, a continuing effort has been made to purge the subject of neo-Malthusian connotations, to make its consideration acceptable to developing countries, to formulate the right questions, and to devise an integrated and balanced conceptual framework which would offer a solid base for practical action and for meeting the challenges. The undertaking has been a difficult one, because the conceptual and policy tangle and the resulting polarization of views tend to persist in their basic dimensions.⁶

To return to the Stockholm period, notwithstanding all these arguments and divisions, the kernel of a more balanced and comprehensive approach to the problem was already outlined in the report of the Founex Panel on Development and Environment. The Panel met on the eve of the Stockholm Conference with the explicit purpose of seeking a conceptual and

the environment, and adequate policies and measures should be adopted, as appropriate, to face these problems". In the same paragraph, it notes, quoting in part from Mao Tse-Tung, that "of all things in the world, people are the most precious. It is the people that propel social progress... and through their hard work, continuously transform the human environment. Along with social progress and the advance of production, science and technology, the capability of man to improve the environment increases with each passing day" (A/CONF. 48/14/Rev.1, p. 3). Principle 16 also states that "demographic policies which are without prejudice to basic human rights and which are deemed appropriate by governments concerned should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the human environment and impede development" (*ibid.*, p. 5). Furthermore, recommendation 12 of the Action Plan calls on the World Health Organization to promote and intensify research endeavours in the field of human reproduction so that the population explosion can be prevented from having serious consequences for the human environment.

⁶The population variable is the key ingredient of this tangle, giving rise as it does to extreme and ideologized positions, which either assign the leading place to population numbers or else completely deny their importance. Another contributing factor has been the mixing of levels of analysis and time scales, and in particular the overgeneralization resulting from oversimple efforts to make global statements combined with clumsy attempts to deduce from them implications for the national and local levels.

policy package which would help to overcome some of the reticence that the developing countries manifested *vis-à-vis* the very issue and concept of environment.⁷ The basic contributions of the Founex report to the population-environment-resources debate were i) its attempt to provide a base for an integrated approach, and ii) the stress that it laid on societal forces and mechanisms and the development process itself, and on their effects on the environment and the natural resource base.

The conceptual package was improved and further elaborated in the context of the preparations for the 1974 Bucharest World Population Conference, which included a Symposium on Population, Resources and Environment.⁸ The World Population Plan of Action adopted by the Conference represented a further important step in giving greater objectivity and balance to the population debate and recasting it to take into account the conditions actually prevailing in the world and the sensitivities of the developing countries.

The whole issue became topical and acquired greater policy relevance following the 1973 "energy crisis" and the Sixth Special Session of the General Assembly, which launched the concept of the New International Economic Order. In brief, it was energy crisis which, among other things, brought home in very practical and visible terms some of the problems associated with the limited availability of, access to, control over, and ultimately the finiteness of some key natural resources which are of critical importance for the functioning of contemporary societies.

The next step was taken by the 1974 Cocoyoc

Symposium on Patterns of Resource Use, Development and Environment.⁹ One of the principal messages of Cocoyoc was that the problems of contemporary society were not caused by a lack of physical resources, but by economic and social maldistribution and misuse, and by existing economic and social structures and behaviour within and between countries. It highlighted the throwaway economy and the often wasteful and profligate life styles and patterns of development, production and consumption common in the developed countries, which in both absolute and per capita terms account for the lion's share of consumption of world natural resources and pressures on the environment.¹⁰

The special contribution of Cocoyoc to the evolution of the PRED debate, and its political importance, was that it pointed to the developed countries, and to national and international socioeconomic structures and processes, including maldistribution, as being among the principal causes of the irrational and unsustainable pressures on the environment and on the natural resource base. It did not ignore the demograph-

⁹The Cocoyoc Symposium, organized jointly by UNCTAD and UNEP, was conceived as the continuation of the Founex Seminar discussion, taking into account the intervening conferences and events, and in particular the energy crisis and the ideas on a New International Economic Order formulated by the Sixth Special Session of the United Nations General Assembly. (For the Cocoyoc Declaration see United Nations General Assembly document A/C. 2/292.)

¹⁰The importance of development styles is well illustrated in an example given by Keyfitz. In the United States, energy consumption in 1947 amounted to 1.21 billion tons of coal equivalent; in 1973 it reached 2.55 billion. During the same period the United States population increased from 144 to 210 million. Had the United States population maintained the same volume and patterns of production and consumption as in 1947, it would have required only 1.77 billion tons of coal equivalent. Thus, of the total increase in energy production during the period, 0.56 billion was due to population growth, while 0.78 billion was due to other factors, including increasing affluence in development styles. He argues that the increase of affluence has had a much greater effect than population growth on use of materials and on the environment (especially air and water); or, put differently, that the ascent of people into the "middle class" (in terms of consumption levels and life styles) or "consumption population", compounded by the continuous raising and diversification of levels of consumption, has greater effects on the environment than the increases in world population, and specifically in the poorer strata. (See Keyfitz, *op. cit.*, pp. 31-32.)

⁷See *Development and Environment*, Report and Working Papers of a Panel of Experts Convened by the Secretary-General of the United Nations Conference on the Human Environment (Founex, Switzerland, 4-12 June 1971), Paris, The Hague, Mouton, 1972.

⁸See *The Population Debate: Dimensions and Perspectives*, Papers of the World Population Conference, Bucharest, 1974, Vol. II (United Nations publication, Sales No.: E/F/S. 75. XIII. 5). Annex II of the document (pp. 687-699) contains the Report of the Symposium on Population, Resources and Environment, held in Stockholm from 26 September to 2 October 1973. The report sums up very well the different views expounded at the Seminar. The document also contains selected background papers presented at the Stockholm Symposium (pp. 3-236).

ic or population growth variable, noting the likelihood that world population will double or even possibly treble at some future date. It laid stress on meeting this challenge in the context of an overall response to the whole set of problems on mankind's agenda, through a positive and dynamic approach, and through changes of a structural character. In sum, then, the Cocoyoc Symposium produced an initial counter-hegemonic statement on the PRED problem, drawing attention, among other things, to the policy context, the historical roots of the contemporary problems, the time dimension, the social class variable, the structural and economic imbalances between and within nations, and the nature and role of the international economy. It represented the basic building block in the efforts to arrive at a balanced treatment of the subject.

The Bucharest World Population Conference had urged the Secretary-General of the United Nations to support research aimed at synthesizing, integrating and advancing knowledge on the interrelationship between population, natural resources, the environment and development. This, together with the Cocoyoc Declaration, helped to inspire the initiative taken by some countries in the United Nations General Assembly which resulted in a recommendation that a co-ordinated study be carried out within the United Nations system on relationships between population, resources, environment and development.¹¹ This is how PRED was formally placed as a standing item on the agenda of the United Nations system.

The matter lay dormant for a few years, for the apparent reasons that nobody was quite sure how to handle it and it was also desired to avoid

the inevitable controversies inherent in the subject. It was eventually revived by Sweden in the Economic and Social Council.¹² The governments gave it an approving nod, though it appeared that many of them did not seem to consider the matter to be of high priority and were perplexed as to its exact meaning and practical implications. (Indeed, some developing countries perceived the issue as yet another "population"—i.e., birth control—question, and were not happy that it was given prominence. They refrained from objecting, however, in deference to Sweden, considered as a friend among the developed countries.)

Valuable activities and numerous consultations were undertaken at the inter-agency level in the ensuing period in an attempt to agree on conceptual and operational approaches to the subject.¹³ The representatives of the various organizations faced a difficult task. The inherent complexities of many aspects of the problem made it difficult to fathom the issues involved by using standard analytical, methodological and decision-making approaches and institutional designs. The usual disciplinary and jurisdictional cleavages between the agencies did not make things any easier. The controversies due to differences of policy, ideology and world views per-

¹²See Economic and Social Council decisions 78/51 and 79/49.

¹³Among the various reports and studies on inter-relationships see: Economic and Social Council documents E/1979/75 and E/1981/65; the Administrative Co-ordination Committee's report on the inter-agency consultations held in July 1980 (ACC/1980/35); United Nations Environment Programme, *Work on interrelationships between population, resources, environment and development*, UNEP/GC. 9/2/Add. 4; Department of International Economic and Social Affairs, *Interrelations: resources, environment, population and development*, report of a United Nations Symposium held at Stockholm from 6 to 9 August 1979, New York, 1980 (Sales No.: E.80.II.A.8); the report of the Director-General for Development and International Economic Co-operation, *Interrelationships between resources, environment, people and development*, 1981 (A/36/571); and the set of documents of the 1983 Expert Group on Population, Resources, Environment and Development (IESA/P/ICP. 1984/EG III/1-26). For an ambitious effort to deal with the matter comprehensively and to work out a conceptual foundation for dealing with it, see P. Bifani, *A conceptual framework for the study on the interrelationships between people, resources, environment and development*, UNEP, mimeographed text, December 1980.

¹¹See General Assembly resolution 3345 (XXIX) of 17 December 1974, which, *inter alia*, called on the Secretary-General to provide facilities for co-ordinated multi-disciplinary research, also at the regional level, aimed at synthesizing, integrating and advancing existing knowledge on the relationships between population, resources, environment and development, in order to assist member States, particularly the developing countries, and the organizations of the United Nations system in their efforts to cope with the complex and multidimensional problems related to this field in the context of socioeconomic development. (Note the addition of "development" to the formula. The 1973 Stockholm Symposium was on "population, resources and environment".)

sisted and were hard to conceal, though an apparent effort was made to gloss them over.¹⁴ In the meantime, a complex debate and study on the subject was simultaneously going on, mainly in the academic circles, governments and regional institutions of the industrialized countries.¹⁵

Before continuing with the discussion of the interrelationships exercise, it is necessary to set forth explicitly certain reference markers that ought to guide such considerations in the United Nations. These are briefly discussed in the section that follows.

II

Some premises for devising a United Nations approach to PRED interrelationships

The preceding review of the origins and evolution of PRED underlines the significance of conceptualization and of initial premises in trying to approach such complex and controversial subject matter.

PRED, as an issue of international discourse, has been negatively affected by some of the earliest formulations which started it off on a mistaken track. Years have gone by in trying to set the matter straight and to disentangle it from the initial mix-up of issues, levels of analysis and time scales, from wrong and misleading questions that

are not susceptible of useful answers at this stage, from predictions and trend projections which result in little but loss of credibility ... and the job is far from finished. The oversimplification which results inevitably in public and policy debates of such issues makes the task that much more difficult.

In the foregoing section, some of the key elements responsible for the tangle have been identified. To recapitulate briefly, they are, first and foremost, the central role assigned to the population variable, the static and deterministic

¹⁴For example, the population control groups adhered to their basic arguments and used the standard analogies. See the paper entitled "People, sustainable development and family planning", submitted by the Planned Parenthood Federation to the Expert Group on Population, Resources, Environment and Development (Geneva, April 1983). At one point, the paper speaks of tying "conservation and contraception together at the field level". Quoting the May 1983 special issue of the magazine *People*, the paper notes that the environmental movement has remained aloof to warnings about environmental threats from a rapidly growing world population. The paper was accompanied by a wall-chart, prepared by the World Wildlife Fund and distributed with the magazine *People* (Vol. 10, No. 1). The chart shows increasing sensitivity of the population/conservation lobby to development questions, and attempts to provide a balanced picture of the resources-population issue. Unavoidably, the wall-chart gave prominence to well-known stories of the snow-shoe hare and the lynx and of the Rocky Mountain mule deer in the federal game refuge of the Kaibab region in the United States.

¹⁵A number of studies were commissioned by the Club of Rome as a follow-up to the initial study by D.H. Meadows *et al.*, *The Limits to Growth*, Washington, D.C., Universe Books, 1972, including M. Mesarovic and E. Pestel, *Mankind at the Turning-Point*, New York, E.P. Dutton, 1974. Among other

notable analyses were the Bariloche Foundation study, *The Latin American World Model*; the study executed by OECD on *Interfutures, Facing the Future, Mastering the Probable and Managing the Unpredictable*, Paris, OECD, 1979; the United States Government sponsored *Global 2000 Report to the President, Entering the Twenty-First Century*, Washington, D.C., 1980; and a study by the Secretariat for Future Studies, Stockholm, entitled *Resources, Society and the Future*, Oxford, Pergamon Press, 1980. The Worldwatch Institute Paper Series treated the subject extensively in a number of popular monographs, including several by Lester R. Brown, for example, *Resource Trends and Population Policy: A Time for Reassessment and Population Policies for a New Economic Era*. A number of interesting academic studies also appeared, including such works as P.R. Ehrlich, A.H. Ehrlich and J.P. Holdren, *Ecoscience, Population, Resources, Environment*, San Francisco, W.H. Freeman, 1977; the cornucopian vision of the future presented by H. Kahn (with W. Brown and L. Martel), *The Next 200 Years*, New York, W. Morrow, 1976; the controversial population study by J. Simon, *Economics of Population Growth*, Princeton, N.J., Princeton University Press, 1977; D.S. Kleinman, *Human Adaptation and Population Growth: A Non-Malthusian Perspective*, Montclair, N.J., Allanheld, 1981, and the counter-study to *Global 2000*, edited by J. Simon and H. Kahn, under the title of *The Resourceful Earth. A response to "Global 2000"*, Oxford, Blackwell, 1984.

approach to environment and the natural resource base, the inadequate treatment of society as a mediating instrument between man, his environment and his future, the overgeneralization of trends, problems and solutions, and the lack of sufficient sensitivity to the global social, political and economic setting, brought about in part by the training and in part by the limited geographical representativeness of those in the forefront of the debate.

When these issues are examined in the global setting, replete with inequities, injustice, twisted historical heritage—all superimposed on unequal natural resource endowments, physical and climatic differences, and social, national and international barriers—even the most objectively inspired scientific statements acquire controversial and conflictual connotations. After all, the real world is somewhat different from a cage populated by white mice, equal in colour, size, needs, status and aspirations...

Hence the necessity of designing, in the universal forum of the United Nations, a foundation for the consideration of PRED issues which would: 1) respond to the sensitivities and objectives of its members, and be based on the normative and policy goals and values for which the United Nations system stands, in particular those that have to do with development; 2) ensure that United Nations policy and research outputs are in the forefront of the continuing policy debate and scientific discourse; 3) choose areas of work where the United Nations system is particularly well placed to make useful and concrete contributions.

With this in mind, to begin with, several simple premises need to be highlighted which should serve as referents in elaborating the framework for tackling PRED interrelationships through the United Nations at the current juncture.

a) It is the "society" (i.e., social structures) and the key actors and groups within it, rather than the population *per se* or its size, that interact with and transform the natural resource base and the environment through the development process.¹⁶ Indeed, as already noted above, such factors as development styles, levels of develop-

ment (poverty and affluence have different manifestations), patterns of production and consumption, food and agricultural systems, means of production and levels of technological development, modes of transport, concentrations of population, etc., play a crucial role in determining the nature of the interrelationships in a given setting and at a given time.

b) The PRED interrelationship finds expression in many different ways, is shaped by a variety of influences, is by its very nature dynamic and varies in terms of place, time, level (e.g., global versus local), etc. There will thus be a diversity of objectives and of solutions to the problems at stake, which will be influenced by such factors as type of society, time, historical heritage, geographical location, climate, space available, type of resources, actors and social forces involved, means of production and control over these, technological and institutional solutions, changes in economic rationale, etc.¹⁷ These levels of analysis need to be always kept in mind, both because they are interrelated and

lation", and reshuffled the order to "resources, environment, people and development". (For example, see resolution 36/179 on interrelationships between resources, environment, people and development.) "People" however does not appear to have fully caught on, and the initial PRED formulation continues to be used, for example, in the context of preparations for the 1984 Conference on Population.

¹⁷In his discussion of PRED, Ridker refers to the demand for and supply of material and environmental resources. On the demand side he lists the following categories: i) demographic variables; ii) output per capita; iii) styles of living, individual preferences for certain goods, types of leisure, etc.; iv) technological methods used at different stages of economic activity; v) internal institutional arrangements, including land tenure and market regulations; vi) government policies and measures which affect population growth and distribution, the economy, natural resources, environment; vii) international relations; viii) distribution. On the supply side, he identifies, *inter alia*, a) material and resource endowments; b) material resources that are known and available for exploitation (on the basis of current prices and technologies); and c) capacity to produce usable materials from reserves and waste. He notes that the importance of given materials will vary between different contexts. See R. Ridker, *Population, resources, environment and development*, Resources for the Future, Washington, D.C., prepared for the Interagency Consultations on the Relationships between Population, Resources, Environment and Development (Geneva, 29 and 30 November 1978). A similar classification is to be found in the report of the 1973 Stockholm Symposium, of which Ridker was a rapporteur. *Op. cit.*, p. 690.

¹⁶This was recognized by the General Assembly when, in some of its resolutions, it substituted "people" for "popu-

interdependent, and because they should not be mixed and confused with one another.

c) The ability of an ecosystem and of its natural resource base to support a given population, or its "carrying capacity", is relative and dynamic, a socially conditioned concept. It evolves, and so far has usually been continuously modified and expanded by such factors as increasing knowledge; international trade; research and development; pace and nature of technological innovation which alters resource availability and accessibility and expands the natural resource base potential and its uses; material and manpower resources available to the society and its level of development; modes and systems of transport; evolving production systems, etc. Indeed, were it not for all these, the "carrying capacity" of many places and regions in different parts of the world would have been exceeded long ago, as used to happen frequently in the past (and could happen today in some isolated and backward social units) when societies collapsed in face of change in, or constraints imposed by, the local environment and natural resource base.

d) The PRED interrelationships issue is organically linked to and closely intertwined with international stratification, the international economic system and international economic relations, in particular between the North and the South, and cannot be considered without full reference to these. Indeed, the objectives of global equity and of the New International Economic Order need to be taken into account when the issues are analysed and concrete measures proposed.

e) PRED is neither purely nor even primarily a population matter. It is important to underscore this point, which also forms the very basis of the interrelationships exercise in the United Nations, and to place the population variable in a proper focus, especially as in many circles the view persists that by controlling and reducing the rate of population growth it will be somehow possible to avoid and resolve the dilemmas and

problems that have begun to appear. For the purposes of the PRED exercise, the rate of population growth can be seen in a dual perspective. It is a dependent variable within the broader context of development process and societal change; however, in studying qualitative and quantitative pressures on the natural resource base and the environment, it has also to be treated as an independent variable, a datum, because a given increment of world population and individual countries' populations will have to be accommodated until some future date when their numbers will tend to stabilize. This is why the population factor occupies an important place in the interrelationships formula, and needs to be taken fully into account in strategy and policy formulation, planning, management and decision-making at all levels of human society and with different time perspectives in mind. It is also clear, however, that though population policies and population control policies are important, and in some instances essential even in the short run, and would attenuate some of the problems and difficulties, they will not by themselves contribute much towards resolving any of the fundamental PRED issues, in particular at the global level, either today or on a historical scale.

f) What is really at stake is the very nature, pace and direction of the development process; the rationality and long-range sustainability of the patterns of production, consumption and life-styles personified by the so-called "affluent society"; the problem of their spread and replication on the global scale; access to, control and distribution of resources, inequities and struggle for power within and between societies, and globally. What is further in question is how we do and should plan the social and development process, and direct and manage the modern society and community of nations as a whole.

Starting from the above referents, a few brief comments are made, in the section that follows, on the way in which the PRED exercise has been handled in the United Nations so far.

III

Some comments on the current PRED exercise

The argument advanced here is that on the whole the United Nations approach to the PRED issue at the inter-agency level suffers from several shortcomings, which are the reflection partly of the lack of a generally-accepted conceptual framework and of faintheartedness towards tackling some sensitive questions, but also of the drift into technically specialized areas and of the absence of a clear and determined leadership in the exercise. This is so in spite of the fact that various studies and reports produced and meetings held in one way or another touched upon and identified most of the issues involved.¹⁸

The first shortcoming has to do with the overall substantive and policy balance of the exercise. The dominant and virtually exclusive concern is still with the Third World countries. In contrast, such issues as the role of the industrialized countries in global PRED interrelationships and the crucial problem of transnational patterns of development and life styles, all of which were highlighted in particular by the Cocoyoc Symposium, are played down or overlooked. This may be so because the United Nations system is oriented towards and has greater access to information on what is happening at the domestic level in the developing countries, and/or it may be because most industrialized countries do not appear to favour any type of United Nations probe into their internal development affairs.¹⁹ The controversial nature of many of

the issues, and of alternatives which are not always in harmony with the dominant economic order, may be an additional inhibiting factor. Also, the weight carried by the demographic factor in the perception of the problem helps to focus attention on the Third World. Whatever the reasons, or combination thereof, this lack of balance deprives the exercise of some critical dimensions.

The second deficiency has to do with the strong methodological orientation of the exercise. The political sensitivity of some of the issues involved, and the danger that this might give rise to polemics, together with the constraints on action at the inter-agency level, resulted in the exercise's being principally oriented to methodological concerns.²⁰

This type of work provides the international secretariat with relatively safe ground on which to tread, and does produce concrete and potentially useful outputs. Also, it offers an opportunity for lengthy engagement—especially as the PRED interrelationships, with their multiple levels

organized as one of the follow-ups to the Cocoyoc Symposium, focusing on the industrialized countries. For the report and background documentation, see *Lifestyles, Environment and Development - A European Perspective*, UNEP Reports and Proceedings, Series 4, Nairobi, 1982. While some developed countries were interested in analysing and pursuing the subject, others, including some of the most important ones, were distinctly annoyed and refused to take part in the discussions, insisting that the matter should not be brought up again in ECE—the natural forum for this subject in the United Nations—on the grounds that its mandate allows it to deal only with “economic” questions. As a result, the subject was quietly shelved in ECE, though it continues to figure in the programmes of other United Nations regional economic commissions.

²⁰In 1983, approximately US\$ 280 000 were available in the Trust Fund created for this purpose. Two-thirds of this sum were allocated to the FAO/UNESCO co-ordinated study on *Carrying capacity (Kenya): Interactions between Population, Food, Energy and Material Standards*; one-third was allocated to a UNEP co-ordinated project on deforestation in the foothills of the Himalayas. See United Nations, *Interrelationships between resources, environment, people and development. Report of the Secretary-General (A/38/504)*.

¹⁸Note especially the report of the Director-General for Development and International Economic Co-operation (A/36/571). It represents an attempt to devise a comprehensive framework for the study of interrelationships. It also includes, albeit in somewhat circumspect fashion, areas of study that focus on issues having to do with the industrialized countries, such as patterns of development and intensity of resource use. One of the important reasons why this programme of work has not been fully implemented is the fact that the Trust Fund to finance various PRED activities never materialized as had been hoped.

¹⁹Symptomatic of this situation was the UNEP/ECE Seminar on Alternative Patterns of Development and Lifestyles in the ECE Region, held in Ljubljana, Yugoslavia, in 1979, and

and direct, indirect and feedback effects, do indeed represent a challenge of considerable proportions.

Methodologies, however, in spite of their usefulness, are of secondary importance, and have seldom helped to resolve social conflicts and dilemmas like those inherent in the PRED interrelationships. Moreover, by their very nature they lead to a hunt for quantitative tools and reference models, which are sought in the sphere of traditional economics and of natural science.²¹ In this quest an important role has been played by the concept of "carrying capacity". Borrowed and transposed from the biological and ecological sciences, the concept is crude and inappropriate for complex problems of contemporary society and international relations. Referring basically to a balance between population size and its requirements, and the available resources in a given geographical setting, the concept has exerted influence in several important ways on what has so far transpired in the United Nations system in the effort to cope with PRED interrelationships.²²

The result has been a propensity to focus on marginal resources, fragile ecosystems and subsistence farming societies. Thus, for example, one will frequently come across studies having to do with firewood, with arid zones, and especially with small islands, which lend themselves to this type of analysis.²³

"Carrying capacity", usually coupled with

the notions of ecosystem stability and optimum population size, is an intrinsically conservative concept. It is not surprising, then, that solutions are often sought within this population-resources equilibrium, rather than through "expanding the carrying capacity of a given marginal ecosystem" (for example, the carrying capacity of an arid zone increases with the infusion of manpower, capital, technology and know-how). In the case of the former approach, which means adapting to environment and rigidity, the options are essentially to control the population and/or to limit development aspirations in keeping with the currently possible and the sustainable uses of the existing base. The latter approach, which implies flexibility and the transformation and adaptation of the environment and the natural resource base, means a dynamic and progressive development scenario.

All this is not to say that the concept of "carrying capacity" has no value as a reference base. Rather the point made is that the framework in which it is implanted should be more comprehensive and sophisticated than has been the case so far. In order to do this, it may first be necessary to go back a few steps. Thus, a didactic purpose would be served if all engaged in PRED work were to undertake "carrying capacity" studies on Manhattan, as an example of a small island, on the United Kingdom and Japan, as large islands, and on the Netherlands as a densely populated country, all in the industrialized world.

The third weakness of the PRED exercise has to do with its glossing over the role of the international economy and international economic relations, including its historical and colonial roots, and the fundamental role of North-South divisions, in shaping PRED situations nationally and internationally. This omission is all the more striking not only because international economic relations are one of the major concerns of the United Nations, but also because in many places in the world where PRED interrelationships are unbalanced, the international dimension or the "transnational connection" is one of the key independent variables ("independent" as far as the local people are concerned, who can do little if anything to modify it) and one of the determinants of what happens locally, or of what could be done locally to improve the situation.

²¹One of the pitfalls of this kind of work in the case of PRED is getting bogged down in a morass of data, often of trivial or no importance to the real problems at stake. For an effort to come to grips with some of these issues, see United Nations, *The application of an extended social accounting matrix to the analysis of interrelationships between population, resources, environment and development* (ESA/P/WP. 80).

²²A United Nations document defines carrying capacity as "the number of people sharing a territory who may, at a given time, sustain a standard of living by applying organization and skills to the exploitation of available physical resources, including land, energy, water and minerals" (A/38/504, *op. cit.*, p. 4).

²³For example, UNESCO has completed a study of Fiji Islands, and is attempting a similar study in the East Caribbean. Admittedly, with time the methodology is becoming more sophisticated. Thus, the above-mentioned pilot study in Kenya is being carried out with a view to assisting countries to clarify the levels of food self-sufficiency and material standards attainable within the limitations of existing resources, environment and demographic circumstances.

In sum, then, although the various elements which make up the total picture have been identified,²⁴ the PRED exercise seems to have moved deliberately along the less controversial

lines.²⁵ It continues rather diffuse, often drifting into relatively marginal issues and approaches, and neglecting fundamental problems.

IV

A structure and some possible concentration areas for PRED work in the United Nations system

It is important that the United Nations system carry on with the work on PRED interrelationships. Participation and regular involvement of the United Nations would help to introduce greater policy and substantive balance and representativeness in this type of work and analysis. As discussed above, part of the problem with academic and policy studies, analyses and projections related to the PRED problematique is that so far, with some exceptions such as the Bariloche Latin American World Model, they have been confined to the developed countries and their regional organizations.

The mix of academic, policy, operational and technical concerns, combined with the interdisciplinary and integrated nature of the subject matter, affords an opportunity to bring together and unify the work taking place in the various parts of the United Nations system, and to infuse it with the integrated vision that it tends to lack because of the traditional fragmentation of work among various specialized agencies and

organizations, and the inhibition of integrative and holistic analyses and strategies.

The future look of the problematique implies formulation and discussion of alternatives, which in itself gives the United Nations a chance to lead and influence, and to spearhead the process of cognition, which is especially important at this stage, when the world economic crisis and the crises of development styles have brought to the fore the need to search for alternatives.

In considering what would appear to be the more promising lines of work in the United Nations, PRED can be approached in two distinct though interrelated ways. It can be seen as a topic of research and academic study to help advance the relevant knowledge, to sensitize, to awaken new consciousness, and to provide inputs for policy and strategy deliberations in so far as these relate to the future, the development process, North-South relations, and, in general, the human condition. It can also be viewed as a series of practical problems for policy- and decision-makers, and planners, especially at the national and local levels, but also for groups of countries and in some instances for the international community as a whole. The United Nations, of course, is capable of making a contribution in both directions.

There is a considerable number of possi-

²⁴See the various documents cited in footnote 13 above. For example, the 1979 Stockholm Symposium speaks of consumption patterns and life styles as being one of the important sources of conflict in the world. *Inter alia*, it notes that although the countries pursuing wasteful styles of life are in a minority, they have preempted a large part of world resources (ST/ESA/ 109, *op. cit.*, p. 7). The report of the Director-General of the United Nations cited above and endorsed by the General Assembly, represents an attempt to set in motion a comprehensive programme. Among the problems/projects that it identifies for system-wide work are study of regions with high consumption of resources, resource use, development and life styles (A/36/571, *op. cit.*).

²⁵See document A/38/504, which speaks of planned action within the United Nations system. See further, the report of the 1983 Geneva Seminar on Population, Resources, Environment and Development, which also manages to steer clear of some important but polemical issues.

bilities, and it is important to choose nodal points for United Nations study and action which are likely to yield some benefits in the immediate future, feed the ongoing worldwide debate on PRED-related issues, and also strengthen the base for future work of this kind.

Two possible areas of concentration seem to be of special importance for generating data and knowledge that are necessary to back up the consideration of PRED issues in the global forum of the United Nations and to make it better informed, and in particular to link it to current concerns on the socioeconomic scene.

a) *Quantitative data base.* The United Nations is well placed to seek, systematize and synthesize on a continuing basis the quantitative data that are of relevance to PRED interrelationships. A series of indicators could be elaborated, including resource use profiles, to keep track of the pressures exerted on the natural resource base and the environment by contemporary societies and processes.²⁶

Such a reference data base, and the comparability of data and indicators, would enrich and add an important policy and substantive dimension to international deliberations and projections, making it possible, *inter alia*, to check up on the content and growth of global demand, to monitor and compare national performance (including that of the industrialized countries and, in general, of high consumption strata of world population), and to disaggregate various global indicators, all of which are important in evolving more rational and sustainable patterns of development and in husbanding and managing global resources. This type of statistical data would also find its applications in the North-South dialogue, it would be useful for projections, systems analyses, futures studies, and construction of world models,²⁷ and it would also fill serious

gaps in the current international statistical yearbooks and more generally in the data base used for PRED and related policy and strategy considerations.

b) *Study of exogenous factors affecting local PRED problematique.* By drawing on the capabilities of the various organizations of the United Nations system, it would be possible to undertake a useful baseline empirical study of a representative sample of national and local crisis areas, especially in the Third World, where tensions in PRED interrelationships are manifested, with the special goal of identifying and analysing those influences and variables having to do with the activities of exogenous agents (for example, transnational corporations) and with macro-level processes. Such data and analyses would help national decision-makers and those in the field to gain a better understanding of the full range of causes of the problems they face at the micro-level. It would also be of help in generalizing and theorizing about the overall situation, in figuring out and defining the nature of the mechanisms which transmit influence from global via national to local levels, and in adopting policy and action measures in the United Nations as necessary.

The two lines of work suggested above are intended to produce eventually the data base

²⁶The Worldwatch Institute has initiated a regular annual status report on the world's store of resources. See *State of the World 1984*, a Worldwatch Institute Report 'Toward a Sustainable Society', Norton, New York, 1984. Quite obviously the United Nations would appear as the most appropriate locus for undertaking this type of global accounting on a regular basis.

²⁷The most notable United Nations-sponsored incursion into the sphere of world models was the study by W. Leontief *et al.*, *The Future of the World Economy: A United*

Nations Study, New York, Oxford University Press, 1977. (Parenthetically, it was commissioned on the initiative of the Netherlands in the wake of the Stockholm Conference, to analyse some of the basic issues inherent to PRED interrelationships on the global scale. The fact that the study failed to grapple successfully with many of these issues, especially those connected with the environment (for example, soil erosion), and drifted into the more traditional concerns and familiar spheres of economic projections, was, *inter alia*, a reflection of the problems encountered when trying to approach these issues by using traditional modes of thinking and economic tools of analysis, as well as of the absence of data and indicators that one could use.) Whatever the problems of world modelling, its biases and shortcomings, it will continue, it is heuristically useful, and it will feed a continuing debate and controversy, which in itself is beneficial. The United Nations should provide some of the important data for this kind of work, but should also play an active role in critically approaching the paradigms and preferred world orders from which such models invariably start. (For a recent essay reviewing world modelling, see Richard K. Ashley, "The eye of power: the politics of world modelling", *International Organization*, Summer 1983, pp. 495-535. See also C. Freeman and M. Jahoda (eds.), *World Futures, the Great Debate*, London, M. Robertson, 1978.)

which is necessary for fully informed consideration of PRED interrelationships at the global level, and especially in the context of North-South relations, as well as for empirically introducing the transnational variables and processes which have not been given their due so far.

As regards the specific problems of developing countries, and modes of assisting these countries in coping with them, two possible courses can be suggested.

a) *Mapping the critical problem areas in the Third World.* The PRED issues which are discussed in abstract and methodological terms in the United Nations fora translate into tangible, hard-core problems in the field. How to approach and manage a given situation is essentially a matter of decision-making and management at the micro-level, which, of course, takes place in a series of concentric circles leading ultimately to the global level. An overview, or a map of micro-locations in the Third World where tensions in PRED interrelationships are experienced, with the nature of these tensions explicated and classified, would be of assistance not just in providing a comprehensive picture of the real situation and for monitoring and keeping up to date with its evolution worldwide, but also for the purpose of selecting critical locations in order to mount some type of international support and assistance.²⁸ In any event, such an overview would be useful in introducing qualitative and quantitative knowledge into the discussion, and would be also helpful in orienting the operational and development assistance activities of the United Nations.

b) *"Expanding the carrying capacity".* The notion of "expanding the carrying capacity" implies a perceptual and conceptual shift in the way the "carrying capacity" issue has been treated hitherto. Expanding the carrying capacity is part and

parcel of the development process, manifested in an increased ability to draw on the local environment and the natural resource base. This objective is bound to be given a substantial boost by the technological advances being made today, especially in the field of renewable energy technologies, and of diversified and novel modes of exploitation of the natural resource base, including those originating in the field of biotechnology and genetic engineering, both for industrial and, in particular, for agricultural development purposes.

The "expansion of carrying capacity" could represent a useful point on which to focus the discussion and around which to generate yet another transfer-of-technology front in the North-South dialogue.²⁹ Possibly a good rhetorical argument to start with would be to remark upon the willingness of the North to dispense advanced birth control technologies on very favourable terms, or gratis, in order to alleviate PRED problems in the South. Were this motivation and reasoning applied, for example, to renewable energy technologies, which would imply their development and diffusion in the Third World on other than purely commercial terms, some of the critical PRED problems, such as deforestation and soil loss, could be handled with more success than is at present the case.

The preceding suggestions were related specifically to the development mandate of the United Nations system, and the need to assist the developing countries in their internal development efforts.

The United Nations also has a unique capacity and mandate to deal with truly global problems, beyond the control of a country or a

²⁸In some places, for example, Nepal, given the prevalent socioeconomic conditions, level of development, technologies and knowledge used, and resources available, increasing population numbers can exceed local production capacity and threaten serious social dislocation and physical damage. In such instances, exact knowledge of the nature of the problem could help, among other things, to identify the type of support and inputs from the international community which would assist the national authorities to manage the problem. The above-mentioned study, co-ordinated by UNEP, of PRED interrelationships in the Himalayan foothills represents and attempt in this direction.

²⁹The need for increased food production is closely related to the levels of farming technology. See the FAO/IIASA study on *Potential Population Supporting Capacities of Lands in the Developing World*, FAO/IIASA/UNFPA Technical Report of the Land Resources for Populations of the Future Project, Rome, 1984. One of the conclusions of the study is that of the 117 developing countries studied, 57 would not have enough land to satisfy the needs of their projected populations by the year 2000 were they to continue to apply their present farming technologies. Were they to achieve an intermediate level of farming technology, then only 36 countries would not be self-sufficient. At still higher levels of farming technology, not more than 19 countries would be unable to meet the needs of their projected populations.

group of countries. There are a number of global manifestations and implications of PRED dilemmas, which need to be assembled and given integrated considerations in a single place in the United Nations system. The interrelationships exercise offers an opportunity for doing this.

"Global outer limits". The notion of "global outer limits" derives from the concept of "the outer limits of the global carrying capacity".³⁰ Among the important problems for the present and especially for the future of human society which fall under this head, and which have been highlighted up to now in international deliberations and scientific discourse, are inadvertent climate modification by man, depletion of the ozone layer, pressures on major life-support systems, climatic and biological effects of nuclear war, etc.

The usefulness of the "global outer limits", as a conceptual and policy "chapeau", in the context of the PRED exercise is that it would encourage integrated consideration of these issues, and serve to bring them to the centre of the United Nations stage and to give them the sustained policy visibility and importance which they deserve, but cannot attain in the specialized and technical fora where they are normally studied and examined.

The concept of "global outer limits" suggests also some of the transcendental qualities of the PRED problematique, which subsumes certain complex and challenging questions of the present age that will become ever more critical and central as years go by. PRED is *prima facie* a system's issue, baffling to study and think about, and even more difficult to act upon. Furthermore, it raises many sensitive questions about contemporary society and where it is heading. It is no wonder that political leaders and decision-makers generally have not shown great enthusiasm for thinking seriously and even less for acting upon these with an integrated approach and with a longer-term horizon in mind, preferring to ignore them

or relegate them to some future date and to their successors. Or, and what is more disturbing from the global perspective, countries act on their own, affecting future options of others and of the international community, all this in the absence of political will and of appropriate mechanisms for analysis, policy consideration and negotiations at the global level.

It will be some while before the community of nations develops the consciousness, political will and capability to deal with the global implications of the PRED problematique in a truly integrated manner. In reaching that point, continuing study, conceptualization and general debate will play a fundamental role. This points to the last line of action suggested here.

Fostering public debate. The United Nations, as the universal policy forum, should spearhead the evolving PRED debate. The global and forward-looking visions that it embodies and its normative goals and development objectives make it imperative for the United Nations to assume this role, among other reasons to counterbalance some of the less-universally inspired formulations, such as those emerging from the United States domestic scene where what amounts to a PRED debate of sorts has of late assumed political importance. Its inherent though inadequately utilized and/or realized capacities to confront, synthesize and integrate data, disciplines, varied and conflicting interests, policy and philosophical perspectives, to link different levels and loci at which the subject manifests itself, to identify causal chains, etc., place it in a unique position for this task.

To secure for itself the central and influential role in the evolving debate will not be easy. Determination and leadership will be necessary to overcome the disciplinary and jurisdictional barriers manifest in inter-agency endeavours, and some of the bureaucratic hesitation and diffidence commonly occurring in politically controversial matters. A special effort will be required to get full and committed participation of the governments in the exercise, and to convince them of its usefulness. In addition, the work in the United Nations needs to be closely linked and interacting with the mainstream of academic and policy thinking. Ultimately, it is the choice of issues for consideration, and the way they are treated, that will give relevance and

³⁰The concept of outer limits was given prominence by the Cocoyoc Symposium and has been used by the United Nations Environment Programme in classifying some problems on its agenda. For an elaboration of the concept see W.H. Matthews, "The Concept of Outer Limits", in W.H. Matthews (ed.), *Outer Limits and Human Needs. Resources and Environmental Issues of Development Strategies*, Dag Hammarskjöld Foundation, Uppsala, 1976.

weight to what the United Nations does. Two generic issues could provide a good starting-point for mounting and fanning the debate, one relating to sustainability of development styles and access to these by the less privileged of the world, another to ways and means of increasing the resilience and decreasing the vulnerability of contemporary societies.³¹

In concluding this section, a reference to the

PRED formula must be made. Were "society" to be added, making it "society, population, resources, environment and development inter-relationships", or SPRED, the formula would both better reflect the very nature of the interrelationships, and diminish the primary stress on population that the current wording continues to project.

V

Developing countries and the PRED exercise

The developing countries as a group have not evidenced much interest in the PRED exercise in the United Nations. Many among them have tended to overlook the issue or deny its importance. Some of the reasons for this have roots in the origins and evolution of the problematique discussed above, and are also possibly related to the fact that so far the matter has been considered mainly at the inter-agency and expert level. More generally, it is the consequence of ambivalence *vis-à-vis* the whole matter both on the domestic plane, and as regards ways and means of inserting it usefully into the negotiations with the North.

This attitude, however, is not justified, since the dilemmas and problems inherent in the interrelationships present themselves in a very special light for the developing countries, and have an important role to play in their development process, prospects and options for the future.

³¹One of the important resilience/vulnerability topics has to do with the progressive homogenization of agricultural and food systems, and the potential risks that this entails. (As a sidelight, it is interesting that the Irish potato famine, which has been used as an example of a mismatch between population size and the ability of the local environment and economy to sustain it, was in fact a monoculture crisis and collapse, when the potato was attacked by a fungus. While social, economic and scientific progress has made most of the parallels between the Irish case and the current situation irrelevant, the example conveys the basic message about various types of vulnerability that are being built into contemporary societies.)

Strained PRED interrelationships are occurring today in many parts of the Third World, negatively affecting the people and undermining the process of development, the natural resource base and the environment.³² Resolution and

³²Situations vary widely between different places, as do their causes. For a review of the situation in Latin America, which is notoriously critical in some of the region's major metropolitan areas, see, *inter alia*, *Development, life styles, population and environment in Latin America* (IESA/PICP, 1984/EG. III/9), a document submitted to the Expert Group on Population, Resources, Environment and Development (Geneva, April 1983). As regards the expansion of the agricultural frontier in Latin America, and in particular the Amazonia, see Economic Commission for Latin America (ECLA) and United Nations Environment Programme (UNEP), *Expansión de la Frontera Agropecuaria y Medio Ambiente en América Latina*, United Nations-CIFCA, Madrid, 1983, containing the background documentation of the joint UNEP/ECLA Seminar on this subject (Brasilia, November 1981). For a comprehensive overview of the situation in Latin America, see O. Sunkel and N. Gligo (eds.), *Estilos de Desarrollo y Medio Ambiente en la América Latina*, 2 volumes, Mexico, Fondo de Cultura Económica, 1981, based on the proceedings and background documentation of the joint UNEP/ECLA Seminar on Styles of Development and Environment in Latin America (Santiago, Chile, November 1979). (Some of these papers were translated into English and reproduced in *CEPAL Review*, N° 12, December 1980.) In this volume see, among others, the interesting study on the Chaco region, by Carlos Adolfo Barrera y Grupo de Análisis de Sistemas Ecológicos, "Economía y ambiente: análisis del subsistema regional chaqueño", *op. cit.*, pp. 580-614. For a conceptual discussion of the problematique from a Latin American perspective see P. Pirez, V. Sánchez, G. Salas, *Medio ambiente y dinámica poblacional*, Colegio de México (mimeographed text), August 1983.

management of these problems is thus on the way to becoming a high-priority and permanent item on the development agenda of most developing countries.

In general, they would benefit from full participation in the United Nations exercise, as well as from an overall policy and conceptual framework devised and from methodological advances made at the international level. To understand problems and implications better and to be sensitized to them are among the prerequisites for action. A significant factor in this process will have to do with the international and/or global aspects of the PRED problematique, which are relevant not merely for local PRED issues in the developing countries, but also for their development and well-being in general. Three such aspects come readily to mind:

i) *Access to and control of natural resources.* In a situation of increasing and diversifying pressures and demands on the natural resource base, especially in an era of energy transition, further global inequities are likely to arise. A few powerful countries, and transnational corporations, with global outreach and influence, are likely to use their advantages to maintain and/or obtain the necessary access to and control over given natural resources without worrying too much either about the needs of others or about the goals of global equity. Among the general effects that are likely, and that the developing countries also may have to face, are the disappearance of high-grade and easily accessible resources, increasing costs, and in general the narrowing range of resources exploitable with the existing technologies. Such trends will no doubt introduce additional obstacles in their development path, with novel modes of technological dependence, and will probably reduce the options available to them.

ii) *Sharing and diffusing new technological and scientific know-how.* New technologies and scientific know-how, which in many instances draw on the natural and genetic resources originating in the developing countries, are beginning to play a critical role in contemporary society, offering new opportunities for economic and social development and betterment. Quite obviously, these hold great promise for expanding both the potential of the productive system and the "carrying capacity" of the environment and of

the natural resource base.³³ The challenge is how to guide and harness the new knowledge and the new technologies in this endeavour, avoiding the likely and all too familiar scenario in which such developments and the technology lag are ultimately responsible for widening the gap between the developed and developing countries, and leading to new monopoly and dependence situations.³⁴

iii) *"Global ecological interdependence".* This concept is mentioned with increasing frequency, and needs to be gradually and effectively incorporated among the issues on the North-South agenda.³⁵ The point worth retaining in the context of this discussion is that action in one country, or a group of countries, may affect the sustainability of the development process, environment and PRED interrelationships in other countries, close or far away, and on the global scale. Generally, most developing countries appear to be powerless spectators and at the receiving end in situations of this kind. Moreover, while at the subsistence level their societies

³³For a discussion of the possibility of exhaustion of non-renewable resources, excluding energy, see H.E. Goeller and A. Zucker, "Infinite resources: the ultimate strategy", *Science*, 3 February 1984, pp. 456-462. The key argument is that, with a few exceptions, the world contains plentiful retrievable resources, and that these resources "can be extracted and converted to useful forms indefinitely, with acceptable environmental consequences, and within the boundaries of foreseeable economic constraints". One of the essential requirements for the achievement of this goal is timely, vigorous and successful research in the field of materials, to ensure the use of lower-grade and alternative ores, and substitute materials, in place of those resources most likely to get scarce and expensive. (Among additional conditions cited are continuous supply of energy, of available capital and of new facilities such as mines, mills and processing plants.) The authors argue that a dozen elements are already economically in infinite supply; that technology is already partly or fully developed, though it is not economical, for an additional seven elements to become virtually unlimited (including iron and aluminium); and that a century of R+D would result in the approximation of another fourteen elements to infinite supply.

³⁴For a review of this problem in the context of plant genetic resources, see P.R. Mooney, "The law of the seed, another development and plant genetic resources", in *Development Dialogue*, 1983:1-2, Dag Hammarskjöld Foundation, Uppsala.

³⁵See, for example, *Economic and Ecological Interdependence*, a Report on Selected Environment and Resource Issues, OECD, Paris, 1982.

and economies are quite resilient, the modern sector may not be capable of such timely and quick adjustment as that exhibited by the highly diversified and materially well-endowed economies of the rich countries.

Obviously, these trends and issues provide a policy and substantive base for a longer-term, forward-looking initiative on the part of the developing countries in the context of their global dialogue and negotiations with the North. Their national lines of action, including a quest for alternative solutions, which implies filtering out influences of transnational development styles and greater self-reliance in developing their own

approaches,³⁶ devising of specific national energy strategies especially tailored to domestic objectives and endowments and with an eye on the post-petroleum age, and horizontal co-operation with one another in devising approaches to their own problems and joint regional positions, would perform an important function in strengthening their international stance, their arguments and their bargaining position *vis-à-vis* the North, as well as their efforts to bring forward in the United Nations practical problems and new forms of vulnerability they are likely to experience.

VI

By way of conclusion

In spite of a great deal of altercation and mutual exclusiveness which has characterized the discussion of PRED-related issues, it can be argued that the basic diagnosis of the interlocking problems—notwithstanding the qualitative, quantitative and time-scale variations—is broadly agreed upon by almost everybody who has seriously thought on the subject. Also, it is by and large agreed that society has entered upon a stage of transition and significant change, even discontinuity, impelled in part by the issues intrinsic to PRED interrelationships.

The real hornet's nest is encountered when it is considered what this implies for the future of the society, and even more so when proposals are made for approaches and solutions to the problems emergent, as it is these that are strongly influenced by world views, social and ideological paradigms, national and group interests, and so forth.

Some insist on population control policies as the principal mode of coping with the problems on the global scale. Indeed, such measures do have an important and immediate role to play in some countries, for example, India and China, though always in the broader context of the development process. It is, however, obvious that population policies are of marginal or no relevance in the case of many other countries, espe-

cially the industrialized ones, and to their critical contributions to global and national PRED problems. Nor do such policies address some of the principal causes of tension in PRED interrelationships. Thus, even were the world population to be stabilized by some magic at its current levels, this could attenuate some of the issues in some parts of the world, and possibly give more time to adjust and prepare for change, but, on the whole, problems and dilemmas stemming from PRED interrelationships would persist and would have to be faced and resolved in some other manner.

Others zero in on the technological and scientific road to salvation. Certainly, were it not for the promise of science and technology, the prospect would be very bleak. Whether it be genetically engineered crops, renewable and/or perma-

³⁶The question of development styles is critical for the developing countries. Trying to imitate and transpose to their societies the basic transnational model, mostly patterned on the United States, had led *inter alia* to marked domestic inequities and increasing stratification between the privileged few enjoying the concomitant benefits and the rest of the population on the sidelines. As far as environment and resources are concerned, it leads to a two-pronged pressure—from the waste and irrationality of the transnational development style, and from the poverty and increasing marginalization of important segments of the society.

nent sources of energy, discovery of new resources and substitutes, securing infinite supply of some key minerals, recycling, low-waste and non-waste technologies, durability of products, miniaturization, or pollution control techniques (including those using bacteria and enzymes, etc.), technological progress, and, in general, the exponential rise in human knowledge, represent the key condition for coping with the multiple problems emerging from PRED interrelationships, for creating lead times and paving the way to more advanced stages in the development of human society. Yet one must keep in mind that though all scientific and technological progress does not necessarily imply a Faustian bargain, many of the most serious environmental and natural resource problems faced today are the product of the technological society, and many new and yet undreamt of problems are likely to be spawned by science and technology in times to come. Moreover, scientific and technological progress does not flow freely; it happens to be concentrated in relatively few countries, and its fruits are not in the main a public good, easily accessible to everybody.

Still others place their faith in the magic power of the market and the demand and supply mechanisms to sort out and find solutions to such problems as scarcity and depletion of given natural resources, and to serve as incentive and guide to human creativity and responses to emerging problems. One of the few inconveniences of the market and the market rationale, in addition to its being one of the chief causes of many serious environmental problems and natural resource degradation, is that, especially in the global context of differences in power, material and financial resources available and levels of development, it has not been known as an equitable device for sorting out the problems and catering to the varied needs and abilities of different actors.

There are also those who assign special importance to improved modes of decision-making and management and new methodologies, to institutional change, and in general to the adaptability of human society and its ability to respond incrementally to the emerging needs.

What is notable about the various prescriptions listed above and the analyses that they are based on is that they tend to obscure socioeconomic causes of the problems ex-

perienced and dilemmas faced, and represent essentially technical responses to social problems which promise a way out without questioning or jeopardizing cherished institutions, structures and ways of life. These approaches, of course, are among the necessary conditions for meeting the challenges ahead. But it is also clear that either by themselves or together they will not be sufficient conditions. They should form part of a comprehensive approach, rooted in fundamental social, economic, political and cultural change, and involving all countries and the international community as a whole. This is one of the reasons why the role of the United Nations, as a universal forum, is of such critical importance in this endeavour. In fact, many of the elements which need to form part of a comprehensive approach of this kind have been either identified, or given prominence in the international fora.

Several components of such a comprehensive approach are worth recalling here: important changes in patterns of development production and consumption; changes in life styles; the attainment of various internationally agreed development goals; changes in the rules and structures of the international economy; channelling of R+D, resources and manpower into critical areas having to do with PRED interrelationships; recasting the traditional societal and especially economic criteria and rationales, which guide and inspire individuals, non-governmental actors and governments, in order to internalize environmental and sustainable development objectives; progressive institutionalization of international régimes and management of global commons, and adoption of norms for countries' activities affecting regional and global environment.

All of these have profound structural implications and mean significant departures from the way things are or get done. Indeed, in many instances they go against the very grain of dominant and/or entrenched social paradigms, structures and institutions, policy and decision-making criteria and practices. Changing these and overcoming the obstacles and interests involved is a task of monumental proportions, especially as the key actors and forces are hardly inclined to such change.

Under these conditions, to expect a comprehensive and planned approach to social

change would be ahistorical and utopian, in spite of the fact that such an approach is objectively possible and within the reach of mankind. As things are, mankind is likely to accost the PRED dilemmas in the usual way, improvising and reacting disjointedly to crises well under way, inching forward through conflict and vituperation, which in a world of unequals means strong possibilities of Darwinian mechanisms becoming more openly and deliberately operational in international relations. This road is certain to lead to serious imbalances and turbulence in the global community of nations.

Dialogues and debates in international fora on such issues as PRED interrelationships seldom appear to affect or shape the real world, visibly and directly. Yet they do lead to a new cognition—as the marked evolution of the PRED subject

over the last decade demonstrates—, plant seeds of new ideas, generate policies, increase knowledge and understanding of what is involved, and define possible levers which slowly and with time can and do exert influence on reality and may come to constitute the very basis of action, and which at the very least could lead to a better-informed “muddling through” process.

This is one of the reasons why the present essay has gone to such lengths in discussing what may appear as a marginal and obscure item, tucked away in the organizational labyrinths of the United Nations system, but is in fact of great topical and policy importance and happens to contain many of the key elements needed for study and definition of societal paradigms corresponding to the requirements of the new age.