

49644

IDRC-Lib  
49644

NOTES FOR REMARKS

BY

IVAN L. HEAD



PRESIDENT, INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

TO

ENERGEX '82

REGINA, SASKATCHEWAN, August 24th, 1982

ARCHIV  
HEAD  
no. 28

IDRC-doc- 327

I'm delighted to be in Regina on this occasion, one century and one day after the railroad arrived, and honoured to be given this opportunity to associate with the organizers and participants of this important conference. It should not be a surprise to any of you here that a recent survey of UN delegates revealed that Food and Energy are tied in first place in their minds as top priority items of all those affecting the global community. No other issues are as universally recognized as so crucial.

This conference is addressing a subject that is both timely and critical.

The British humourist A.P. Herbert said that "The critical period in matrimony is breakfast." And surely the critical period of any lunch as pleasant as this one is the after-luncheon speech. Not so critical today, I hope, as that great Saskatchewaner Hilda Neatby feared it once was. In her influential book So Little for the Mind, published in 1953, Dr. Neatby contended that:

"Comparatively few people are really anxious consciously to exercise their reason; the vast majority, it would seem, deeply desire a faith. As a result, in the twentieth century some two hundred years after the "enlightenment" we encounter the new barbarism. Matters of the mind are scorned as "highbrow" and to attempt to enlighten the mind of your neighbour is almost as great a presumption as to endeavour to save his soul. He wants entertainment."

To avoid any charges of presumptuousness, therefore, Mr. Chairman, I plead that whatever I'm about to say be classified as entertainment.

I'll begin, if I may, by following to a degree the Neatby hypothesis and say that in all too-many industrialized societies today governments and leaders are postponing - or denouncing - systematic examination of global issues. Yet as they do so, the data compounds: in economic, in resource, in

environmental, and in political terms this planet is a seamless web of links and dependencies. No state, no culture, no society is strong enough, or resilient enough, or endowed enough, to stand apart. References: The Brandt Commission; The Global 2000 Report; The World Bank World Development Reports; The World Conservation Strategy of IUCN (International Union for Conservation of Nature and Natural Resources), WWF, UNEP, FAO, and UNESCO; the OECD Interfutures Report.

My concern is heightened by the fact that - for the first time in history - in several sectors, errors committed now may be irreversible in the future.

Example - The explosive force of modern nuclear weaponry is so destructive it guarantees with certainty that any major nuclear exchange, whether triggered by error, by miscalculation, or by accident, will bring to an end civilization as we now define it. Such an error, if committed, cannot in the future be reversed. The destruction of the human habitat will be so overwhelming, and its effects so longstanding, that recovery is unlikely.

Example - The absorptive capacity of the planetary biosphere is not infinite. The continued outpouring of toxic wastes into the oceans and the atmosphere will at some moment pass the critical recovery point. If steps are not taken to ensure that such a point is not reached, the process may well be irreversible and the wholesomeness of our air and our water can no longer be guaranteed.

Example - The continued stagnation of living standards at the bare existence level in dozens of countries is leading to a matrix of problems that continues to defy solution and that raises a spectre of desperate proportions. Poverty and discriminatory repression combine to produce political instability; the relentless quest for firewood is denuding the Himalayan slopes, the Sahelian and other regions, and is resulting in massive soil erosion and declines in agricultural production; the sluggishness of economic activity in many developing countries is deeply affecting the export-oriented economies of the industrialized north and is thus contributing to a worldwide recessionary spiral.

Not a particularly encouraging after-lunch list. My optimism that such errors can be avoided is tied directly to the willingness of Canadians to seize the Neatby challenge. Certainly Energex '82 is a demonstration of that fact. From the perspective of IDRC, I'd like to share with you some of our perceptions of the energy issue as it affects developing countries. It should be no surprise if I admit at the outset that the issue is neither easily nor clearly defined. Too little data is available; too many countries are affected. Nevertheless, a number of features which together form the "energy issue" can be categorized.

First, however, it is necessary to recognize that in developing countries, quite distinct from the Canada of the 1980s, there are two separate components to the energy problem. On the one hand, there are familiar disruptions associated with increases in oil prices which affect the urban and industrial sectors of all economies. On the other hand, there are the equally important problems associated with the inadequate supply of fuels to the rural sector. These rural fuels are mainly wood, crop residues, and cattle dung, and they usually do not enter into the cash economy. Even though these

non-commercial fuels are the main source of inanimate energy for more than half of the world's population, little is known of the details of their production or their use. It is to stimulate a greater understanding of this segment of the fuel sector that IDRC is directing fresh resources.

What we do know about non-commercial fuels is that in the largest part they are collected directly by women and children. This explains the absolute absence of trees around many Sahelian villages to a radius of some 10 kilometres. This is the maximum distance that a child can travel in quest of firewood and return the same day. The global crisis in fuelwood stems from the fact that the quantity that can be sustained by regrowth is already far less than current consumption in many parts of the world, and considerably less than expected future consumption in a much wider area. The FAO estimates that more than 100 million people currently live in situations where they are now unable to obtain sufficient fuelwood to provide even their minimum needs; a further one billion are affected by less desperate but identifiable shortages; and an alarming 2.3 billion will require alternate fuel sources by the year 2000.

It is this dependency upon non-commercial sources, combined with the significant proportion of energy supplied by human and animal muscle power, that makes the energy problems of the rural sectors quite distinct from those of the urban. They should not, however, be presumed to be easy of solution. Primitive may be the uses, but complex are the systems of growth, collection and combustion. Any proposed solution must respond to actual need, and not to theoretical notions of supply. It is not energy in its primary form, be that liquid oil or bulky wood, that is sought by an African villager any more than it is by a Regina householder; what is wanted are energy services that are a product of those sources - heat for cooking or warmth, mechanical power for transport, electricity for lighting.

It is for this reason that there has been such a high failure rate in the introduction of new energy-conversion devices. As in other fields such as health or agriculture, attempts at rural technological change will succeed only if they reflect and respect social and cultural patterns. Any list of difficulties is as lengthy as it is illustrative; improved wood-stoves are commonly found not to meet user requirements; small methane gas production plants tend to break down and are



generally too costly; rural electrification can only be afforded by a small proportion of the community; introduction of more efficient energy-conversion devices that substitute for human labour (such as solar water-pumping systems) may have an adverse effect on employment; the use of a particular commodity (such as cow dung in methane gas plants - "biogas digesters") can deprive traditional users of its value to them, be that for fertilizer or as direct fuel.

There is as well an interconnection here which comes from competing uses. How are priorities to be determined, compensation to be calculated, and alternatives designed when it is realized that scarcity of wood for fuel may be caused by commercial timber exploitation, or by the removal of forests to make way for food production, or by an increase in cattle ownership and consequent overgrazing? Even where the cutting of wood for fuel by subsistence peasants is identified as the major cause of deforestation, it may be the last desperate act of a people who are denied access to other sources. What then? Responses, obviously, are only likely to be effective if they are based on a clear understanding of such causal relationships.

If I may be bold enough to say so to a Saskatchewan audience, these problems and trade-offs are neither dissimilar to nor more simple even than those associated with the Crows' Nest Pass freight rates!

Let me turn for a moment to the other, more familiar to Canadians, ingredient of the developing countries' fuel crisis - that involving commercial fuels. Even here, the problems faced by the LDCs are distinct from those in the industrialized nations. For example, although oil price rises of the 1970s produced major shocks throughout the entire world economic system, the superior purchasing power of developed countries made them better able than developing countries to compete for oil supplies at the higher prices. Therefore, in the short run at least, the problems of oil for developing countries are problems of the world distribution of resources in general as much as they are specifically oil-related.

Again, the immediate impact of the price hikes for developing countries was on their balance of payments and on oil-using industrial and transport sectors. While the rise in oil prices was not the direct cause of all problems in the 1970s,

it certainly exacerbated existing difficulties. Those rises meant that a greater proportion of foreign-exchange earnings from exports paid for oil imports. This in turn led to a greater burden of debt and a reduced level of investment in development programmes. Oil price rises increased the cost of fertilizer and of manufactured goods produced in the industrialized north, and imported by the south. So important has been this cost factor that it is likely that it has had an even greater effect on the balance of payments of developing countries than has the rising cost of oil imports. Compounding these factors is the world recession, which further reduces the demand for developing countries' exports, limiting their ability to earn foreign exchange. And, finally, the real value of official aid flows has remained static or has declined.

What avenues are open to the developing countries to meet this category of problem? One that happily is now being opened to them by the efforts of Petro-Canada International - and explained in some detail at this conference yesterday by the Chairman of that organization, Peter Towe - is the development of their own hydro-carbon reserves. This avenue is parallel to the continuing development of hydro-electric resources which has long been a major policy theme of CIDA.

Another avenue, in theory, is conservation. This policy alternative is a cruel one, however. The greater part of the oil consumed by developing countries is used in the industrial sector (typically 30-50%). There is therefore little likelihood that this consumption will, or can, decrease. Much of the knowledge necessary for future technical change assumes cheaply-priced and reliably-sourced oil. Those assumptions were so firmly built in, that they will not easily be overcome. While too much reliance should not be placed on the precise relationship between the growth of gross national product and energy consumption, it is difficult to see how the developing countries' need for oil will not rise in the coming years. If this need is not met, growth of their industrial sectors will suffer.

So with the other main user of oil in developing countries: the transport sector (typically 25-30%). Here, energy use is considerably skewed toward the more affluent sections of the population for private transportation. Even so, higher oil prices result in higher freight costs and so lead to a considerable reduction in the movement of goods and services. Examples can be quoted of agricultural extension services and mobile health services being severely curtailed through lack of

fuel. For instance, Zambia's agricultural extension services are said to have been forced to operate in 1980 with one-fifth of the fuel they used in 1970.

While, as I have said, little commercial fuel finds its way into the rural sector - the World Bank has suggested that both direct and indirect uses of energy in agriculture typically account for less than 5% of a country's commercial energy - one should not underestimate the important roles played by commercial energy sources in the rural sector by providing crucial inputs to irrigation pumping, transport, fertilizer, and agricultural mechanization. Indeed, in human welfare terms, the return on the consumption of commercial energy in the rural sector might be expected to exceed that in the industrial sector. As a result, and as with the industrial and transport sectors, it is difficult to envisage rural development in the short- and medium-term future which does not involve a greater use of commercial energy, primarily oil.

Still another avenue open to the developing countries is that of fuel-crops: dedication of agricultural land to the cultivation of crops for energy purposes. This

alternative is being pursued on a massive scale in Brazil. It is nevertheless one which causes me considerable concern. I say this because energy crops compete with food and feed crops not just for land, but as well for water, for fertilizer, for labour, for credit, for infrastructure, and for capital investment. In particular, when the land dedicated to fuel-cropping is prime, and not marginal, society is stating that its priorities are fixed in favour of liquid fuels rather than food for human consumption. This is a choice that should not be forced on any government.

Finally, of course, in their quest for solutions to their energy problems, LDCs are looking to innovative, sometimes exotic, alternative sources. The danger here is that these alternatives are often the products of technologists and of circumstances alien to those countries. The role of IDRC in this and other energy avenues is to encourage and support research conducted by developing country scientists within their own countries, ensuring that the right questions are asked in the search for relevant solutions. We are assisted in this respect by special funding made available to the Centre at the time of the U.N. Energy Conference in Nairobi.

I hope it is not necessary to stress either that IDRC has been engaged for years in the support of energy-related research - it most assuredly has - or that our focus on research needs does not imply that research is more important than many of the other actions that both developed and developing nations can take. Our focus is a simple reflection of the parliamentary belief that led to the creation of IDRC: that research has a crucial role to play in development, that a greatly increased proportion of the world's research effort should be carried out by people within developing countries, and that IDRC support should concentrate on this activity. One of our findings to date is that all too much concentration in energy research has been focussed on the "hardware" side, and all too little in the area of energy requirements and on the social and economic viability of the technology. IDRC hopes in a modest fashion to contribute to the rectification of this imbalance. We hope as well to contribute to the coordination of the now widely dispersed and often erratically focussed energy research activities. But more than anything, it is the Centre's aim to enhance the research competence of the developing country scientists, thus lending to the decision-makers in those countries the ability to set their own priorities, to make their own choices, and to maintain a wise, sustainable, and flexible response to the energy challenge.

Is there good reason why Canada should express interest in the energy problems of developing countries? My answer is an unqualified "yes". We are one of the great trading nations of the world. Increasingly, worldwide trading patterns are including the developing countries. The United States, for example, sells twice as much to the Third World as it does to the European Economic Community. The EEC, in turn, sells three times as much to the Third World as it does to the United States. Japan sells more than 45% of all its exported manufactured goods to the developing countries. The LDCs are a vital segment of the world economy. Yet their ability to purchase our goods depends very much on their own economic vitality and on the state of their foreign exchange accounts. Before 1972, the foreign debt of developing countries tended to increase relative to the volume of imports; after 1972, debt resulted more from increase in price, rather than increase in volume. Among the commodities so affected were petroleum, petroleum derivatives, and most manufactured products. Thus balance of trade deficits arose more from changes outside the control of developing countries than they did from excessive internal demand. Because Canada looks to these countries as promising markets for Canadian goods, it is in



our interest to assist them to better their economic conditions. Energy is a vital segment of those economies. It is a fibre that is woven into all parts of the fabric of modern life.

Because exploitation of energy sources can lead to far-reaching consequences, the responsibility of the present generation to act as stewards for the future is an inescapable one. A century ago John Ruskin stated: "God has lent us the earth for our life; it is a great entail. It belongs as much to those who are to come after us; and we have no right, by anything that we do or neglect to do, to involve them in unnecessary penalties, or deprive them of benefits which are theirs by right." Much more recently, Lester Brown of the Worldwatch Institute has stated the same thought in contemporary language: "We have not inherited the earth from our fathers, we are borrowing it from our children."

Quite clearly, energy problems are only in part technical problems. Whether in the industrialized countries or in the developing countries, they cannot be segmented from the social, political, economic, and environmental context in which

they occur. Solutions proposed without reference to all these elements are unlikely to succeed, or to endure. That fact, I am confident, will be a continuing theme of this conference.