

## The FORUM Forum

*The Forum serves as a vehicle for the free expression of views and comments on the contents of the journal. Each issue will carry selected critiques of the articles published, in the hope that they will stimulate further discussion in these columns of the subjects involved. Readers are urged to submit contributions, which should be typed in double-space and addressed to The Fletcher Forum, The Fletcher School of Law and Diplomacy, Medford, MA 02155.*

### Masihur Rahman: On Limits to Growth

The essence of the "limits to growth" theory has a hallowed history. Malthus, for instance, was among the first economists who foresaw the human misery resulting from a discrepancy between the rate at which population grows and the (slower) rate at which food production grows. The neo-Malthusians recognize the accelerated growth of human population, but hope that the predicted miseries can be averted by exercising discretion. The proponents of the "limits to growth" fundamentally share this approach. In addition to Malthusians, there are a host of conservationists, ecologists, etc., who subscribe to this view, and recommend restrained use of resources and lowered rates of growth to avoid exhaustion of resources, disruption of ecological balance, etc. Both these trends are discernible in the "limit to growth" theory. While Mr. Jhavbala proposes to survey the growth of this idea in recent times, he concentrates exclusively on the efforts of the Club of Rome and does not trace the sources from which these ideas have come. This is quite justified as it helps to highlight the idea in its contemporary phase; such emphasis is deserved by virtue of the idea's impact on thinking at the global policy level.

The paper is based exclusively, however, on *The Limits to Growth* and *Mankind At The Turning Point*. These are popular versions of the main body of reports and analyses, which have also been published. (Meadows & Meadows, *Towards Global Equilibrium*, 1973; Meadows, D.L. et al, *Dynamics of Growth in a Finite World*, 1974). In any serious appraisal of the idea, these technical reports should be given due attention, which does not seem to have been done here. Due to exclusion of these reports from the scope of the survey, the quality of the assumptions and data used have not been examined in sufficient depth. In view of the fact that in all such models the assumptions and the data influence the inferences (to which fact Mr. Jhavbala refers), such an examination was necessary.

The doom predicted by the proponents of *Limits* seems to be dependent on the following fundamental assumptions:

(i) Growth depends on the use of non-renewable resources by application of technology. (ii) The current level of technology is the highest, so that no basic change can be anticipated, (though marginal changes or adjustments can be made). Therefore, given historical trends of growth, exploitation of resources will continue at the historically observed rate, or even at an accelerated rate, exhausting the already depleted stock of these resources. The present structure of civilization, based on growth, cannot survive long in the face of the impending crisis. (iii) Since the stock of resources is at about the level assessed by current knowledge, and its usage is determined by an invariant technology, the present rate of reckless exploitation will continue, threatening the future of mankind. No significant technological innovation, making for more efficient use of resources, is allowed in the model. In point of fact, the assumption about an invariant technology is made much more rigid by reference to barriers to adoption of new innovations on grounds of cost, lagged social response, etc. Thus with supply static, and demand for resources growing dynamically, a time comes when no further supply is forthcoming; this is the point when the world of mankind collapses.

The validity of the analysis depends on the quality of these assumptions. The key to growth lies in technological innovations removing for any economy the given constraints. For instance a constraint on expansion of food production is availability of a high yielding variety that responds to fertilizer under controlled water supply. Biological and chemical technologies can provide this, and thus break the natural constraint on expansion of food production. Technological innovation can also make possible more efficient use of resources, so that with a given amount of resources more output can be obtained. This will reduce the rate at which resources are used, the central pre-occupation of *Limits*. Historically, technological innovations have been found to be responsive to social and economic needs; technologists have tended to innovate in areas in which the given economy was deficient in original resource endowments or in which it grew deficient through accelerated use of original resources. Thus, the efficacy of technology and its responsiveness to social and economic needs is a crucial element in explaining past growth and predicting the future.

A very strong, but implicit, assumption about human behavior — its ultimate rationality — seems to underlie the belief in the responsiveness of technological innovation to social needs. According to this belief, there is a pattern in human history underlying the appearance of merely muddling through. It may not always be possible to formulate specifically and clearly the ends pursued and the means used therefor, but, given the

ability and knowledge to do so, it could be seen that the 'ignorant' actor was seeking his rational interest. (Interested readers are referred to Milton Friedman's essay on methodology of positive economics.) Meadows and his co-authors, however, do not subscribe to this view. According to them, mankind is engaged in a self-destructive process of "growth" which is not rational, and whatever appear to be achievements are exceptions to the normal pattern of muddling through that characterizes human history. Given this assumption, no hope for mankind, not to speak of hope in technology, is possible. Mr. Jhavbala seems to adopt this point of view, which is reinforced by reference to Schumacher's forecast of the destruction of the 'profligate life-style.'

Mr. Jhavbala addresses the problem of the developing countries specifically. The global gloom overshadows the third world countries too. This is logically consistent: if there is no hope for mankind in general, there can be little hope for any part thereof. Although in *Limits* no specific reference was made to this aspect, in the organic growth or differentiated structure of the model of *Mankind* such implications receive attention. Mr. Jhavbala seems to share this view. He, however, has made an attempt to resurrect hope in terms of 'new economic order', technology transfer, etc., but to no avail. Such optimism derives implicitly from two assumptions: technology can contribute to development of mankind, and it is possible to transmit the technology from the western developed world to the developing world. The first assumption is contrary to the *Limits* model, and in talking about transfer as a source of benefit to the third world, Mr. Jhavbala implicitly, but unmistakably, renounces the *Limits* model. Further, in thinking of technology transfer as a source of benefit to the third world, Mr. Jhavbala describes a center-periphery relationship between these two sets of countries: technology is available, and the problem of the poorer nations will be solved by transferring the same, with appropriate modifications where necessary. But since in this model the center has gone into decay, it is difficult to understand how it could be the source of regeneration for others.

The proponents of *Limits* hold out a faint hope that by reducing the use of non-renewable resources and decelerating the rate of growth the sources of growth can be preserved. No behavioral assumption has been posited to support this optimism. The general assumption in the model, as shown above, is that of a 'predatory' human element. Consequently, the hope held out derives from sources outside the model, and is untenable given this assumption. At best, this source could consist of a council of wisemen, withdrawn from the rest of mankind, prescribing what is good for them. In operational terms, thus, this reveals traces of

reactionary political thought or a manipulative attitude towards society. Thus the hope sounds hollow and invidious.

In the ultimate analysis, whether one would accept or reject the *Limits* thesis depends on one's attitude towards the assumption about human nature posited in the model. There is no historical evidence or a priori reason to establish this hypothesis as incontrovertible. It follows, therefore, that there is no reason to accept this model of doom as the final word on mankind's future.

### *Todd Friedman: On North Sea Oil*

Ms. Huger's article on North Sea oil policy is noble in intent, but deficient in effect. Whereas she purports to focus on the evolving government-company relationship, in reality she does not. This failure is due to a major contradiction between method and purpose, which, although apparent at the outset, does not emerge completely until the conclusion.

To start with, Ms. Huger only presents the public policies of the two host governments under investigation. She never poses and never answers the question of where the private petroleum firms stand (or have stood) on the various issues affecting North Sea oil development. Consequently, a situation is created in which the respective roles of the governments and companies are mutually exclusive. The governments are always depicted as being the active parties, making all of the policy proposals; the companies are stereotyped as passive parties, merely reacting positively or negatively to each government decision. Within the context of an all-pervasive conflict of interests, i.e., both parties trying to "maximize their own individual profit or interests," the outcomes over particular issues are always viewed as being determined by either the government's choice of policy or by the company's reaction to it. In other words, the solutions to problems in North Sea oil development result from the unilateral action of one or the other party; there is never any interaction between the parties. Although she obviously believes that a reciprocal relationship exists between the governments and companies, Ms. Huger does not present any evidence to that effect.

In fact, despite her subtitle, Ms. Huger describes a situation in which the governments and companies either peacefully coexist or are at war.

For example, she writes that "warfare" solutions are "solutions resulting from either the government nationalization or expropriation of company assets or company withdrawal from exploration and exploitation in the area." Has she not confused effect with cause? Is it not in fact the case that "warfare" solutions result from unsuccessful negotiations between the parties? What does Ms. Huger mean when she concludes that "during the 1974-76 period development policies . . . have resulted in three instances of warfare solutions in Norway due to company withdrawal . . .?" Did the choice of government policies have nothing to do with it, and did the companies not try to modify Norway's policies before withdrawing?

What I am arguing is that there is a fundamental contradiction between Ms. Huger's stated methodology and purpose. Because she does not ask anything about the companies' positions, she cannot establish a relationship between the companies and governments. Without a mutually interactive relationship, she cannot establish causes for the outcomes she describes, and hence cannot analyze the evolution of their alleged relationship. Ms. Huger's methodology only allows her to describe the matters in conflict and to record the ultimate, issue-specific outcomes. With only a little more sophistication than this, her inquiry, as expressed in her concluding chart, amounts to asking, have the adopted governmental policies taken separately resulted in private oil companies staying and working their licensed areas or not? This is clearly a descriptive question requiring reportorial treatment.

Ms. Huger points out her own mistake in the conclusion, but unfortunately it is too late to be corrected. She states, "The type of solution finally achieved in development policy will depend on the factors which contribute to the relative bargaining strength of both the governments and the companies." If this crucial aspect of Raymond Mikesell's theory had only been introduced on page one, she surely would have realized that something had to be asked about the companies' positions or bargaining strengths over time. Furthermore, she would have had a theoretical framework to fill out with selected facts, facts which would have made some analytical sense. As it was, she necessarily had to use her facts descriptively and could only organize them by discussing specific issues, issues which could not in any way be interrelated to give us some sense of the overall thrust of (at least) official policy over time.

Because she uses a descriptive, issue-oriented approach, Ms. Huger cannot properly employ Mikesell's model in her conclusion. From what the author says, Mikesell's classification of possible solutions to resource-related, company-government conflicts is based on the sum of the actors' respective bargaining positions, that is, on the interaction between the

entire package of government policies and the corporation's bottom line at each stage of oil development. His model is not supposed to be used on an issue-by-issue basis. Ms. Huger's issue-specific descriptions do not fit his broad theoretical framework. She presumably uses it to give her technical information some major significance which it just does not have. Her conclusion is a pseudo-theoretical one which tries to bridge an unbridgeable contradiction between statement of purpose and choice of methodology, the kind which tries to pass off mere description as objective analysis.

Given that Ms. Huger wanted to analyze the evolving government-company relationships, there is a methodology which would have suited her purpose. The proper organizing principle is not issues in dispute, but rather the stages of oil development-exploration, production, distribution. If the overall bargaining positions of both the companies and the governments had been viewed within each successive stage, then it would have been possible to judge whether the general and specific outcomes were becoming more or less favorable to the companies or governments over time; the conclusion would be analogous to the product-life-cycle theory in the manufacturing field, and hence of some practical value to companies and governments planning natural resource investments and development. Furthermore, such a conclusion might have led to some interesting speculation as to whether the host country's level of development determines the rate at which leverage is gained and lost by companies and governments.

