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**Book** *in* Economic Analysis and Policy · December 1973

DOI: 10.1016/S0313-5926(76)50005-1

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**MANKIND AT THE TURNING POINT –  
THE SECOND REPORT OF THE CLUB OF ROME  
(M. Mesarovic and E. Pestel  
Hutchinson of London 1975)**

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The multi-level regionalized computer model propounded by Mesarovic and Pestel in the Second Report to the Club of Rome to analyse the global development crises syndrome improves on the methodology and specifications of the earlier M.I.T. world systems models of Professor Forrester and Professor Meadows. The Mesarovic-Pestel model by disaggregation on the basis of ten regions overcomes the criticism of the First Report to the Club of Rome where the world was viewed as a monolithic whole. The regionalization captures the diverse life-styles, socio-economic and politico-cultural patterns prevalent in the real world. Moreover, the model recognises the interdependence and dynamics of the world development process. The need for a multi-disciplinary approach for the solution of global crises is heeded by stratification of the model. The stratification factors start with man at the apex, and is followed by group, demo-economic, technology and environment strata. This facilitates the incorporation of data from different branches of specialisation like sociology, demography, economics, agro-technology, in order to analyse global crises. The computerised model evolved by the authors is not a mere data-crunching algorithm, it is rather a man-machine symbiosis based on a conversational mode between man and machine. It is offered as a framework for decision-making based on a heuristic or interactive approach. The most authoritative and elaborate data matrices and hypotheses regarding the world crises are fed into the computer to chart out alternative development paths or socio-political events and choices called scenarios. The scenario analysis is mainly confined to a planning horizon of fifty years (1975-2025) in the Mesarovic-Pestel thesis.

The need for anticipatory and concerted action, transcending parochial nationalistic and short-term interests, is clearly illustrated by the results of the numerous scenarios of the global crises portrayed in the book. The world's foremost crisis today is the poverty and income inequality problem between countries and regions. The narrowing of this gap between man and man is as important as the narrowing of the gap between man and nature. Several scenarios are mapped out under different assumptions and time pro-

files. A massive aid infusion from the developed world to the developing world is advocated by the authors to achieve the Tinbergen target of a gap of 5:1 between developed and developing countries in 50 years time and self-sufficiency in food in 25 years. The annual aid injection required for the implementation of this "early action scenario" is costed at \$250 million (or an amount equivalent to the annual military expenditure by developed countries). But the dismal performance of the aid-donors up-to-date on the aid targets agreed for the Second Development Decade leaves no room to assume the materialisation of the Mesarovic-Pestel aid scenario. Even if the required aid is forthcoming, it is doubtful whether the corrupt and elitist political organisations and the "absorptive capacity" of some developing economies would make a pure aid strategy deliver the world from the tensions gripping the world due to the inequitous gap between man and man.

Seven population scenarios have been mapped out in the book to show the misery and havoc that will result due to food shortages in the face of exploding global population. The depletion of non-renewable resources and its repercussions are simulated through several pricing policies using oil as the cause célèbre. Low and optimal pricing scenarios are analysed and the ultimate solution to the resource dilemma is couched in terms of long-term co-operation. Oil embargoes or similar restrictions on scarce resources and their impacts on the world are illustrated postulating "squeeze", "retalitory", and "co-operation" scenarios. The resource problem unravels the interdependent nature of the energy crisis and the constraints it imposes even on super-powers like U.S.A. The computer scenario analyses clearly indicate the astounding mutual benefits that would accrue to all contenders, big or small, if the co-operation strategy rather than a confrontation strategy is implemented.

The only feasible solution to the imbalance in the food-population equation is proffered in the context of malnutrition and starvation of 500 million children in the world and dwindling grain production in the world today. A "standard scenario" emphasises the persistency of the global food crisis even on the assumption of the realisation of an equilibrium fertility rate over the next fifty years. A "tragic scenario" based on all optimistic assumptions of the "standard scenario" maps out that normal mortality rates would double if no grain imports to developing countries occur, during the plan period. A third scenario explores the repercussions of agricultural development at the expense of industrialisation in developing economies and a fourth scenario deals with results of a more stringent population control policy. Finally, the most favoured scenario of the authors is unfolded as comprising of suffi-

cient investment aid to overcome the food supply-gap and the trade-gap. The latter would imply the simultaneous fostering of export-oriented industries in developing economies, *inter alia*. The basic ingredients of the feasible solution to the global food crisis is adumbrated in the thesis in the following terms:

- “1. A global approach to the problem.
2. Investment aid rather than commodity aid.
3. A balanced economic development of all regions.
4. An effective population policy.
5. World-wide diversification of industry leading to a truly global economic system.” [p.127]

The authors warn grimly that mankind's options for avoiding a major global catastrophe are becoming scarce and any delay in initiating new policies on population, food, aid, energy would be literally deadly for a vast populace of humans. A 20 year delay would treble infant mortality rates. The pursuit of the nuclear option to bridge the projected exhaustion of known fossil fuel reserves in a couple of decades time is condemned as a Faustian bargain! “We would be selling not merely our soul to satisfy our immediate comfort needs, but the well-being and perhaps the very existence of generations still unborn.” [p.135]. The authors remonstrate that the world energy crisis is a socio-political problem and a mere technological fix cannot resolve it. The alternative strategies for the solution of the crisis have been mapped out in terms of a series of regionalised time scenarios. In the short-term (10 years) the oil producing nations of the world are to be guaranteed a permanent stake in energy production in a post-oil era, in exchange for the present uninterrupted oil supplies to the developed world. In the medium term, (10 - 15 years) other sources of fossil fuels should be harnessed to bridge the primary energy gap. In the long-term (over 50 years) the solar energy option should be assiduously implemented. This would involve the establishment of solar energy farms in regions like the Middle-East. The thesis is most emphatic in its rejection of the nuclear energy option. It points out that to supply all primary energy by fast-breeder reactors in 100 years, two reactors per day would have to be built from now on. The radio-active waste (deadly plutonium) that would be generated would be lethal to humans for thousands of years and only ten pounds of it would be required to produce an atom bomb! The dangers of nuclear blackmail and catastrophe in a tense world are pin-pointed. The authors lament: “We are not the developed world; we are actually the overdeveloped world.” [p.14] For the first time man is admonished to refrain from economic and technological advancement – in the

name of human survival and organic growth. One ponders along with others, whether the authors are using a biological evolutionary analogy to advocate the stifling of man's continuing evolution. For technological progress could be interpreted as extra-biological evolution!

The Mesarovic-Pestel thesis argues that the world development process lacks the master-plan or genes encoded in bio-organisms that regulate their balanced growth. In order to steer away from the path of undifferentiated growth mankind is advised to take a cue from nature and evolve a master-plan to replace the genes' of nature in the world growth process. Even if we accept the plausibility of the biological analogy for a while, the exact propelling mechanisms of the master-plan are left unexplicated. A series of lofty ideals are preached by the authors for the education of the individual in a new ethic that would nurture the co-operative spirit necessary to evolve and operate the proposed blue-print for survival: At societal level decision-making should avoid counter-productive short-term gain and decisions should be made in the context of the international scene. Solutions to the global crises should be assigned top-priority in the agenda. At individual level a new ethic of world consciousness, resource conservation, economising technology, a spirit of harmony with nature rather than conquest and a concern for the welfare of the unborn generations should be inculcated.

If within the near future the organic growth strategy of development is not implemented, the authors warn that mankind would continue its fateful march towards eco-doom! Assuming a longer time-horizon, the thesis probes the operation of "outer-limits" due to the destruction of the life-supporting biosphere by industrial pollution and the binding of "inner limits" due to psychological and organisational ramifications emanating from the present pattern of growth. The authors conclude that if during the next half-century, a viable world plan does not emerge by the exercise of options facing mankind, the world would drift on to a collision course with doom! "And it is in this sense that mankind is at a turning point in its history: to continue along the path of cancerous undifferentiated growth or to start on the path of organic growth". [p.9]

The operational guidelines to evolve and implement the master-plan of organic growth are shrouded in ambiguity, and as if to cover up the thesis is replete with exhortations for international co-operation and harmony. For instance, it is not explicated what the new development path the developing economies should pursue means, if they are not to "follow the path traversed by the more developed world" [p.153]. If the innovative path implies a "freeze" of industrialisation which has showered material benefits on the developed countries since the dawn of the industrial revolution, it is unlikely

that planners in developing economies would cop it. One could pick many noles in the Mesarovic-Pestel panacea for the resolution of the "problématique humaine". Several lacunae in the data, assumptions, specification, and interpretations of the elaborate systems model which abstracts the complex real world could be listed, but such criticisms are general to any model building exercise and could be easily extended to this gigantic effort. The Mesarovic-Pestel attempt should be credited with attempting successfully the Herculean task of global planning despite the inevitable pitfalls in such a venture.

The Mesarovic-Pestel book presents some of the major strands of the current Neo-Malthusian eco-debate succinctly. It greatly reinforces the arguments of the trendy environmental lobby in the developed world. In spite of the complicated and sophisticated mathematical modelling the results and interpretations cannot claim immunity from value-judgements of the authors. The Mesarovic-Pestel thesis vividly portrays the environmental consciousness and cultural milieu of the industrial world. It has a smack of mea culpa for the woes of the third world, but it does not reflect the socio-economic aspirations and cultural ethos of the developing world adequately. Nevertheless, it must be conceded that the Second Report is more sympathetic and realistic in its appraisal and recognition of the third-world problems than the First Report to the Club of Rome.

In conclusion, I cannot but fail to describe the Mesarovic-Pestel model as the latest and most numerate addition to the growing family of models of eco-doom. The ultimate fate of humanity as projected in this model is the same as in the Meadows "Limits to Growth" model. But catastrophes will appear at a regional level first and eventually snow-ball into an apocalyptic disaster, if no timely corrective, collective action is taken. The parameters and variables fed into the computerised model are basically Malthusian: The food-population equation, resource scarcity, the premise of technological pessimism (as elaborated in the nuclear Faustian bargain), the neo-Malthusian concern for the environment. Malthus has been fed into the Mesarovic-Pestel model. Hence, "Mankind at the Turning Point" is a "Malthus In Malthus Out" computer job. The print-outs that emerge have been interpreted with a touch of melodrama and a justifiable sense of urgency in some instances. The main arguments of the thesis are logically and cogently presented. Copious and authoritative sources of data, briefs, diagrams and charts are referred to in order to clarify and supplement textual descriptions. The presentation is, in short, masterly and should appeal to the lay reader, academic purveyors of futurology, and to the decision-makers of every kind to whom the book is addressed: viz. bureaucrats, politicians, businessmen and the like. It would certainly be another powerful source of ammunition for the vocal eco-doomsters. This could well be their "bible" till another dismal prognostication is propounded.