POPULATION, RESOURCE UTILIZATION AND DEVELOPMENT

by

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Today is the age of crises. There are at least half a dozen world problems of crisis dimensions such as population crisis, food crisis, environmental crisis, poverty crisis, energy crisis, raw materials crisis and others. All the countries, developed as well as developing, are responsible for this state of affairs, and all together should find solutions to these problems.

There are two main factors responsible for the present situation: rising population and rising affluence with its characteristic consumption-based life-style. The developing countries, by their high rate of population growth, are contributing to the problems by increasing the number of people, and the developed countries have added to these problems by their rising affluence. Since 1950 the annual growth in global demand for goods and services has been about 4 per cent. The world’s population has been growing at a rate of about 2 per cent per annum. The remaining 2 per cent has been absorbed by the rising rate of consumption.

The race among the countries to achieve a higher rate of economic growth is a significant dimension of the 'crisis' problems. Economic growth means more consumption of resources. For example, the annual GNP of Western Europe in the late 1960s was about 4.4 per cent which was associated with 7 per cent annual growth in oil consumption. Japan’s annual growth of about 12.4 per cent in that period was accompanied by 17.4 per cent rate of oil consumption. Similarly, the North American economy grew at an annual rate of 3.7 per cent during the period 1965-70 and the oil consumption increased at the rate of 4 per cent. The same situation prevails with regard to the consumption of other resources. This does not necessarily mean that there should be no economic growth, but it has to be well planned in the light of the limited natural resources of the planet earth. Most of the developing countries of course need to achieve
higher GNP than at present in order to meet the basic needs of man such as food, housing, clothing, education, employment, health services, etc. At the present rate of consumption, it has been estimated that most of the vital natural resources will be exhausted by the end of this century. If there are no natural resources there will not be any economic growth, and there is always a limit to any kind of growth. Growth is a determinant process and self-limiting. It becomes self-destructive when it exceeds the capacity of organization and the capacity of the environment.

In today's world, no country, however large and wealthy, can any longer live independently of other countries. The economic development of any country is dependent on the resources and/or technological know-how of other countries. All countries share the common global ecosystem. The dependence of national economies on international resources is rising with each passing year. For example, the United States influences the composition of diet in many countries in the world by its decisions on exportable surplus of food grains. On the other hand, the size of the automobiles and the thermostatic levels in the United States and other countries are being influenced, to a great extent, by oil production and export decisions in the Middle East. In the new conditions exemplified by the global crisis syndrome, the world community has been transformed to a world system. Each country or region has its own contribution to make to the organic or differential growth and development of humanity. In such a system the over-growth of any one part of the world means non-growth or under-growth of others. With increasing scarcity of resources, the harsh realities are that for some to consume more means that others must consume less.

Let us consider the direct effect of rising affluence on the basic problem of food. Until the last few decades there have always been food reserves in many countries. In fact, during the 1950s one of the major problems of the International Agricultural Trade was considered to be that of food surplus. During the recent years the total global reserve of food grains has fallen and has reached a very low level as a result of the 1972-73 drought conditions and bad harvests in most of the countries. With the release to production of
all the land in the so-called 'land bank' in America, the production rose again and for 1973-74 once more it looked that at least the present level would be maintained. Even in these so-called 'good' days, about half the world's population, that is about 2,000 million people, is inadequately nourished and at least 460 million people are actually starving. Crop failure in the food surplus countries such as the United States in any one year would mean starvation for more people around the world. Another factor that we must realize is that we cannot continue increasing food production beyond a certain limit.

The increase in population means an increasing demand for food. In addition there is a trend in the dietary habits of the people in developing as well as developed countries which is contributing equally to the problem of food supply. With the increase in economic status of the people in many countries, their composition of diet has been changing. The effect of rising affluence on the world's demand for food is perhaps best understood by examining the grain requirements in different countries. During 1969-70 the high-income countries, forming about 30 per cent of the world population, accounted for 51 per cent of the total consumption of cereals. The higher rate of consumption of cereals in the developed countries is due to indirect utilization. The cereals which can be directly consumed by man are fed to cattle. Even protein-rich cereals, such as soya beans, form an important ingredient in livestock and poultry feeds throughout the world. In order to produce one pound of beef, we have to feed the cattle 7 to 8 pounds of cereals, over and above other animal fodder. This is because not all the grains which are fed to the cattle are converted into meat: from 80 to 90 per cent of the energy is wasted during transfer from cereals to meat. The cereals which are thus fed to the cattle to get one pound of meat could instead feed 7 or 8 people.

Food and Agriculture Organization (FAO) projections indicate that between 1970 and 1985, there will be relatively higher annual rates of increase in demand for fish (3.4 per cent), meat (3.1 per cent) and cheese (2.8 per cent) in preference to cereals (2.4 per cent) per annum. In all the regions of the world, the use of cereals
for livestock feed would grow more rapidly than the demand for direct consumption. By 1985, the developing countries would use 14 per cent of the total demand for cereals as cattle feed, whereas 66 per cent of the overall cereal demand of developed countries would be utilized as cattle feed. On the per-capita basis the total demand for cereals in developed countries, which was nearly three times that of developing countries in 1970, would continue to grow more rapidly than in the developing countries. Assuming no substantial changes in the production techniques, it is assumed that the demand for cereals as livestock feed will increase from about 420 million tons in 1970 to 650 million tons in 1985, of which approximately 520 million tons would be required by developed countries.

The per-capita amount of grain consumption directly and indirectly continues to increase as per capita income climbs. The dietary habits of most of the countries in Western and Eastern Europe and Japan are now more or less comparable to those of the United States in 1940. As income continues to rise in these countries, a sizeable fraction of the additional income is being converted into demand for livestock products, particularly beef. A similar trend in dietary habits is visible in developing countries with the increase in their per-capita income. Because many countries lack the capacity to satisfy the growth in demand for livestock products entirely from indigenous resources, they are importing increasing amounts of either livestock products or feed grains and soya beans with which to expand their livestock production. As a result, in recent years soya bean has become one of the leading export products of the United States — surpassing export sales of wheat, corn and even high technology items. As yet, no nation appears to have reached the level of affluence where its per-capita grain requirements have stopped rising. During 1964-66, the per-capita consumption of grain consumed by an average Canadian, American and British was five times, four times and three times respectively that of an average Indian. Similarly, during 1971, energy use in the United States, United Kingdom and France was 96 times, 47 times and 34 times respectively that of Indonesia and Pakistan. Even in countries where population growth is less than 1 per cent per annum,
HUMAN WELFARE AND DEVELOPMENT MODEL

CAUSES
- Rising Population
- Rising Affluence
- Uneven Distribution of Population and Resources

PROBLEMS
- Poverty
- Food and Nutrition
- Energy
- Raw Materials
- Pollution

STRATEGIES

Developing Countries
1. Lower the rate of pop. growth
2. Adopt a life style of conservation and efficient utilization of resources
3. Develop national strategies of technological and economic growth with minimum ecological, socio-cultural and environmental disruption

Developed Countries
1. Lower the rate of consumption of resources
2. Lower the rate of economic growth
3. Adapt the technological progress to minimize disruption of ecological balance and environmental pollution

Both Developed & Developing
Develop a world system of rational distribution and utilization of natural resources

Development and Human Welfare
the demand in domestic food supplies is much higher. For example, in Japan and France, where population is growing at about 1 per cent per annum and in West Germany where population has almost stopped growing, there is a trend towards higher demand for food supplies. This is attributable to the growth of per-capita income in these countries and due to change in their dietary habits.

For all the countries, developed and developing, the basic challenge today is to design a developmental strategy that will provide a relatively satisfactory standard of living for everybody with minimal level of resource consumption. As has been rightly pointed out in "The Ecologist, A Blue Print for Survival" (1972) we should try to develop a world system in which there is (i) minimum disruption of ecological processes; (ii) maximum conservation of material and energy or an economy of stock rather than flow; (iii) a population in which recruitment equals loss, and (iv) a social system in which the individual can enjoy, rather than restricted by, the first three conditions. In order to have such a system we shall have to reverse the trend of over consumption and wastage of resources to conservation and efficient utilization of resources.