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PLANNING TO AVERT CHAOS

by Dr Norman Borlaug

Nobel Prize winning scientist Dr Norman Borlaug is best known for his work on the development of high yielding varieties of wheat at the International Centre for Maize and Wheat Improvement in Mexico, where he still continues his research. Less well known is the fact that Dr Borlaug started his career as a forester, and still maintains close contact with the profession. The following article is extracted from a speech by Dr Borlaug to the Convention of the Society of American Foresters and the Asociacion Mexicana de Profesionales Forestales in Mexico.

If one is involved in food production, one must be concerned about the land base upon which we depend for food. Anyone attempting to increase world food production soon comes to realize that the human misery resulting from world food shortages and the misery resulting from world population are part of the same problem -- in effect two sides of the same coin.

Unless these two interrelated problems and the energy problem are brought into better balance in the next several decades, the world will become increasingly chaotic. The terrifying human population pressures will adversely affect the quality of life, if not the actual survival of the endangered animal species. Human civilization itself will be endangered.

Unfortunately, even affluent, well-educated nations have recently been concerned more with the symptoms of the complex malaise that threatens world stability than with the cause -- geometric population growth.

One such symptom is environmental pollution. It is discouraging and confusing to hear the cliché concerning the fragility of the environment as environmentalists and neo-ecologists lobby for their pet, often elitist, preservation projects -- and meanwhile ignore the needs of the masses and disregard the fragility of the social and political system of which they are a part.

Many of the activists, moreover, seem to take pleasure in blaming science and technology for most current world problems. But without science and technology, what would be the standard of living (or, perhaps better stated, level of chaos) of the world's present population? It does not follow that, because the world managed a moderate standard of living in 1900, when the population was about 1.5 billion, it therefore can produce the basic necessities for the current population of 4 billion with turn-of-the-century methods.

New legislation, emotional crusades, and an avalanche of lawsuits will not protect our environment of our endangered flora and fauna. In their zeal to correct past abuses, many people have begun to search for utopian conditions on a planet that is actually approaching its maximum carrying capacity for living things.

We must instead use common sense, weighing benefits against risks, to make the hard decisions presented by these complex problems. We must expand out scientific knowledge, improve and apply technology, to make our finite land and water resources more productive.

We must produce more food and fibre, more basic human necessities, while the terrifying "population monster" is being tamed. We must, in addition, increase production fast enough to keep worldwide social chaos at bay. The time is later than most of us are willing to recognize.

In developing nations in Africa, Latin America, and Asia, land clearing and forest destruction go on at an accelerated rate. For centuries, many of these countries have had sizeable but stable populations living in the mountain forests of the temperate zone. In the past two decades, however, with better control of human disease, many of these populations are increasing at a rate of 3.0 to 3.5 percent. Since the amount of land available for slash-and-burn agriculture is dwindling, an ever-increasing proportion of the land is being cleared and cultivated permanently, adding significantly to the problems of erosion, silting, and firewood shortage.

India and Pakistan, which have spent huge sums of money on the construction of dams in order to increase irrigation and develop hydro-electric generating capacity, are seeing these reservoirs silt up at a frightening rate. In Pakistan the effective life of the billion-dollar Tarbela Reservoir on the Indus will probably be only 25 to 30 years, less than half the life expectancy calculated earlier. The obvious cause is clearcutting without reforestation, exacerbated by ruinous overgrazing of the nomads' sheep and goats, and the resulting loss of any protective cover on the steep slopes of these watersheds. Similar disasters are sure to occur elsewhere in the future.

World population is estimated to have been approximately 15 million at the time of the discovery of agriculture, about 10,000 years ago. In 1975 it reached 4 billion, a 266-times increase. At the current rate of growth it will double again in 40 years, reaching 8 billion by the year 2015. This means that in the next 40 years world food and fibre production must be increased more than it was increased in the long 10,000-year period from the birth of agriculture up to 1975. We must deal quickly, effectively and humanely with the inescapable population pressures.

This is a tremendous undertaking, vital to the future of world civilization. Failure to solve production problems will plunge the world into economic, social and political chaos.

Can the goal of doubling food and fibre production in the next 40 years be achieved? In my opinion it can, provided world governments give high enough priority to agriculture and forestry. It cannot be achieved, however, with the miserly and intermittent support that has been given during the past 50 years.

To reach this goal will require the best efforts of agricultural scientists and foresters everywhere. The goal cannot be achieved if different sectors of the affluent nations continue bickering over minutiae rather than concentrating on the important issues.

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