Need and Reasons for Population Control

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NOW-A-DAYS, ecology is the key word of health philosophy. It is the study of the relationship among living things and their environments. It includes the study of biological processes and the need of plants and animals as well as the effects the plants, animals and environment have on each other. The basic theme of ecology is that everything is related to everything else. The living community together with the non-living environment is known as an eco-system in which the living part of the community interacts with the non-living part to maintain a stable and steady system.

Its disturbances may occur in two ways :

Natural Disasters

Floods are a very common phenomenon in India. The intermediate impacts are on drinking water and food supply. Therefore, epidemics with faecal-oral transmission may be forecast. Receding of flood and water levels leads to malarial epidemic. Earthquakes, cyclonic catastrophes lead to different types of epidemics. In cyclones the problem of water-borne diseases, caused by the presence of an infective agent or an aquatic host in water, comes up.

Construction Sites

Construction sites attract a large section of population from different parts of the country. This leads to imbalance of human and animal reservoirs of infectious host and the environment and often causes outbreaks. Construction of dam/hydel projects also leads to changes in the local eco-setup leading to outbreak of epidemics. The broad setting of man in his environment is concerned with human ecology.

Environment means everything outside the plant and animal which influences, in any way, the life of plants and animals. It covers all the external forces, e.g., light, heat, soil, water, air, other organisms, etc. It affects the size, shape and colour of the plants and animals and the way in which they grow and live. It has a great role in sparking out an outbreak of its capacity to support different forms of life. Therefore, the surveillance of environmental conditions is becoming increasingly important. The meteorological data and monitoring of environmental conditions is becoming increasingly important. The meteorological data and monitoring of environmental sanitation will help in forecasting the epidemics, because it is the product of interaction of agent, host and environment. The environmental characteristics serve as interacting variables promoting or counteracting human wellbeing in a complex interaction with population characteristics. It is defined as the aggregate of all external conditions and influences affecting the life and development of an organism, human behaviour or society. It is an established fact that environment has a direct impact on the physical, mental and social wellbeing of those living in it.

Man is constantly altering his environmental system by such activities as urbanization, industrialization, deforestation, construction of dams and irrigation channels, use of insecticides and chemical fertilizers. As a result newer health problems associated with pollution, spread of epidemic and endemic diseases and social disorganization have emerged. The health of a community is intimately related to its economic status. The low economic status or poverty involves a person's total life—his food, clothing, housing, education, health, family life—and also predisposes to crime, violence, drug abuse, depression, alcoholism and other forms of deviant behaviour.

The health status of an individual, a community or a nation is determined by the interplay and balanced integration of two

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ecological universes — the internal environment of man himself and the external environment which surrounds him. The external environment consists of three major components, physical, biological and social, all closely interlinked or related. The physical environment encompasses the non-living things and physical forces affecting man *via* water, air, ventilation, lighting, noise and climate. The biological environment is the universe of living things which surrounds man, including man himself. The living things are the viruses and other microbial agents, insects, rodents, animals and plants. These are constantly working for their survival and in this process, some of them act as disease producing agents, reservoirs of infection, intermediate hosts and vectors of diseases. The social environment deals with a complex interplay of factors and conditions such as cultural values, customs, habits, beliefs, attitudes, economic status, occupation, religion, standard of living, social and political organizations.

The Ecological Crisis

The current human ecological crisis is derived from the great technical advances by which man has placed himself in the position of a self-protected species for whom natural ecological regulation is suspended. Inevitably, his expectations have increased to the point where all the resources of the earth cannot supply his wants. Certain environmental phenomena could, if allowed to be continued, threaten the survival of man. They are derived basically from alterations in certain ecological systems brought about by man-made interferences. The deterioration in the heat balances of the earth, ocean, and effects of radioactive waste emission in the air or water and genetic mutation triggered by chemicals are a few examples of such contingent threats. These contingencies deserve the most careful investigation and monitoring today because here even a very small probability of a very serious result should give rise to remedial action. There still exist numerous environmental hazards that could be at least partially controlled.

The environment, natural or man-made, viz., physical, chemical, biological and social, has a significant effect, whether direct or indirect, on human development. If the environment of the community is grossly unhygienic the child is exposed to a host of infectious agents that he is physically unable to withstand. Such exposure, with modifications, continues throughout life, but children who survive the initial encounter with infection and infestation, acquire their own defences of active immunity. For millions of people of poor communities, the hygiene of the physical environment remains extremely unsatisfactory and dangerous. The absence of adequate facilities for the disposal of excreta accounts for the high prevalence of bacterial, viral, protozoal and helminthic disease. Lack of a plentiful, convenient and safe water supply complicates the system to maintain a sanitary environment to keep food clean and to practise good personal hygiene. Over-crowding and lack of ventilation predispose children to a host of airborne infections. Despite notable advances in control, insect vectors continue to be the major carriers of infection in many parts of the nation.

Population Growth

While scientific knowledge of the environment is growing, there is still much to be learned about its immediate and long-term effect on human development. Furthermore, current knowledge is not always applied or used in the best way to improve the quality of human life. There is an urgent need for organized programming of research in the field of environmental contamination. The issue of population growth is often raised in connection with concern about environmental protection and the quality of life. This means that an increased emphasis must be laid on social policy, on psycho-social aspects and on reformulation of social goals.

Pollution is defined as the introduction by man of waste matter or surplus energy into the environment in a manner directly or indirectly causing damage to persons other than himself, his household, those in his employment or those with whom he has a direct trading relationship. Therefore, wastes that are disposed of in a manner which does not cause damage is not pollution. Environmental pollution is, generally, the poi-

soning of air, water and soil of the earth. Usually pollution and contamination are the result of human activity.

Pollution and Deterioration

1. Pollution is the result of progress in technology and the increase in population because his needs are getting increasingly sophisticated.

2. The development of agriculture, exploitation of forests for fuel, building of ships and houses, have deteriorative effects on eco-systems.

3. The developments in industry are subsequently superimposed on the agricultural way of life and the industrial revolution brought man into the space, jet and computer ages. But everything on land and in sea are polluted in various ways at an alarming rate and many species of animals are disappearing.

4. Vast increases in population are rendering our air, water and agricultural area less fit for breathing, drinking and getting food. The expansion in economic activity designed to feed a growing population is not only leading to all round shortages but is also contributing to an environmental crisis.

5. Someone feels that population pressures have already stretched the biological systems of earth to the breaking point.

In the last few decades, population pressures, economic crises, aspirations for higher standards of living, recognition of human rights and environmental pollution have all led to the need for population control. Population of India has become problematic not only to some demographers but also to ecologists and environmentalists, economists, public health workers, administrators, politicians and statesmen. The problem of population, if not tackled in an organised way, can be as serious as an epidemic and its effects as disastrous.

Population development has passed through the three stages of (1) high fertility/high mortality (2) high fertility/low mortality and (3) low fertility/low mortality. The entire sequence, which has reached different stages in different parts of the country, is usually referred to as the demographic transition. The first and last stages are characterised by low population growth whereas the second stage is one of rapid growth. The second stage now prevails in many parts of the country and is accordingly influencing the entire population of India. Bhattacharjee (1984), Rele (1987), Mishra *et al* (1990, 1993) and others reveal in their study that population growth could be checked not only by various family planning measures but also by higher literacy, higher age limit for marriage, improvement in the status of women in society, recognition of importance of children in society, breaking the barrier of old customs and beliefs, increasing opportunities for women and better economic living standards, etc.

The population problem implies the problem that arises on several fronts due to rapid population growth. The rapid population growth in recent years has led to a population explosion which indicates that population growth has outpaced economic growth which is taking place at a much slower rate. The over-population in a given area is readily shown when one examines the three key resources that have traditionally been used by most demographers : food, space and jobs. It exists when the population of a country is expanding faster than its economy in the same time thereby leading to inadequate support of its peoples. It may be measured through population pressure. The population pressure is not absolute, but must be seen as a kind of balance between population size on the one hand and the resources available to it on the other.

Conclusions

On the basis of the above discussion, the following conclusions are derived :

1. The problems come up because of over-population. They may be solved only after a thorough understanding of the factors, acting and interacting, in between nature of the population and the environmental characteristics.

2. Simultaneously, we need an independent powerful Population Commission like Planning Commission or Election Commission for population control. The existing rules should be implemented by them without political influences for all individuals to modify or change the present accelerating trends towards population explosion.

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Recommendations

1. There has been very little experimentation with modified shift systems to provide a 24-hour service in hospitals. The Nurses preferred a 12-hour shift system as reported in one of the studies by Ganong, Ganong & Harrison (1976). The introduction of this system reduced the staff 'turn-over'dramatically. Yuska *et al* (1984)introduced a 12-hour system at weekends only and found it cost-effective as it slightly reduced the Nursing costs per patient day. In view of some of these studies a new shift system suitable to Nurses working in the study area may be tried to solve some of the problems which lead to shortage of Nursing manpower.

2. A study may be conducted to find out Nursing staff requirement in accordance with the nature of work and leave entitlement availed of by the nurses.

3. The 'turn-over' rate and its reasons need to be studied in detail.

4. A comparative study may be planned to find out if married Nurses living in the campus take lesser leave in comparison to married Nurses living outside the campus.

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Over-urbanization, malnutrition, under-employment, poverty, environmental pollution, plant eating, illiteracy and inequality automatically comedown due to modifying the population growth or reducing the population size of the country and gearing up the national economy. For this purpose the psycho-social factors of motivating all people to a common national goal may be the most important ones. The motivation is needed both for those who will give and those who will benefit.

3. There are no appropriate environmental indices and Census statistics to reveal all the factors which are affecting the people of the country. Therefore, it should formulate comprehensive measures including more or less all the important factors to study the system which would provide a much better understanding with respect to time. After all man is still part of nature, not master of it.

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