

**Population and Environment:  
Draft Chapter for the ICPD Pakistan  
Country Report**

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# Population and Environment: Draft Chapter for the ICPD Pakistan Country Report

## Population and Environment

The interaction between natural resources and its users outlines the concept of environment, thereby making it a dynamic phenomenon wherein a society determines its use pattern to sustain its population and enhance their life chances. Sustainability of the system and continuous availability of needed resources, in civic societies, is ensured by regulating human behaviour, making them responsible towards resource generation, and regulate consumption pattern keeping in view the renewability of the resources. Environment is seen as an issue when sustainability is in a state of disequilibrium and increased threat to life support system and life chances of the people is experienced. This equilibrium is an outcome of increased population pressure leading to indiscriminate use of limited renewable or non-renewable resources such that creates resource management problems. External factors like, increased inequality in access to valued resource, decline in absolute quantum of resources, control by exploitative interest groups, misplacement of industrial units and careless waste disposal, type of technology is use, increased income disparities, linkage to external markets, social segregation, etc. impinge on the natural resource utilisation pattern and people's life chances who are conditional by their environmental gradation. Finding solutions in isolation for each phenomena is nothing but a futile exercise, as overtime the dynamics of disequilibrium generates other process leading to much more rapid deterioration. The interrelationship between various phenomena is evolutionary, vary from place to place and bear gradual deteriorating effects. Solutions lie in correct understanding of systemic interrelationships at grassroots and regional levels.

## Population Pressure and Resource Constraint

The historical trend in the growth of population of Pakistan exhibits a very high rate varying on average around 3 percent. The population is conceived as a problem in terms of constrained resources or in terms of lost opportunities. With the current rate of population growth Pakistan is estimated to acquire 308 million population in year 2020 implying a steady increase in child dependency and a marginal increase in economic well being. The pressure built on limited natural resource base be imagined that for each additional 3.6 million children added every year would require an additional: (1) an investment of Rs. 200 billion to create additional jobs for the new entrants to the labour force, (2) 6 lac new housing units, and (3) 6 lac tons of additional wheat for consumption. The trend depicted in Table 1 shows requirements growing much faster than the population growth itself depicting changes in lifestyle. How does a developing country like Pakistan expect to fulfil its developing needs of energy and petroleum especially with hardly any such resource available locally?

Table 1: Trend in Requirements

Year	Population (million)	Wheat (MMT)	Energy (MMTOE)	Petroleum (MMTOE)
1990	114	16.0	28.0	10.0
2001	154	22.0	68.6	24.5
2020	308	45.4	323.1	115.2

*Source:* Estimates prepared by The National Institute of Population Studies, Islamabad

Though Pakistan has an agricultural economy and tremendous efforts have been made towards the 'green revolution' and 'self sufficiency' in agricultural production but still the

mounting population pressure seems to have countered all productive efforts. Out of its total geographic area of 79.6 million hectares, only 21.02 million hectares was available for cultivation in 1989-90 (Table 2). This area has witnessed a marginal growth since early 1980s. The noticeable increase is in the 'land not available for cultivation' since early 1950s-about 2 million hectares seem to be lost. In order to meet the rising demand for food and fibre, expansion in productive capacity lies in making use of cultivable land lying waste or increased intensification of cropping would need to be strengthened. Unfortunately, the productivity of various crops have remained very low over the last several years.

**Table 2: Trends in Land Use**

Land Use	Years			
	1953-57	1968-72	1983-86	1989-90
Reported Areas (m ha)	46.61	53.22	57.96	57.90
Forest area	1.27	2.31	3.03	3.43
Not available for cultivation	20.68	20.13	22.69	24.06
Cultivable waste	9.10	11.53	11.72	9.39
Current fallow	3.53	4.76	4.88	4.93
Net area sown	12.03	14.49	15.64	16.03
Sown more than once	1.30	2.14	4.39	5.73
Total cropped area	13.33	16.63	20.003	21.82

*Source:* EUAD and IUCN

Water management is attributed a major factor towards increased land use and production of grain crops. Increase in soil and land degradation due to erosion, salinity and water logging both land in use and productivity have been negatively affected. Agriculture production could increase if water resources are well harnessed, well managed with minimal loss, and timely availability on demand. Increasingly constrained availability of surface water for irrigation under growing demand to enhance agricultural productivity requires innovative methods and ensuring increased care and efficiency in water use. Grassroots management of water courses and water supply schemes have proved very successful in enhancing productivity in Northern Areas reflecting institutional growth and sharing of responsibilities.

## Population Distribution and Deterioration Environment

Distribution of population is an important factor in determining the carrying capacity of ecological zones in relations to its resources base. Major urban areas of Punjab and Sindh with basic infrastructure and ample job opportunities attracted population from all regions to evolve high density zones. Karachi city experiencing a phenomenal growth rate of around 5 percent, if remains unchecked, is expected to accommodate 32 million people by year 2018. Tremendous demand for housing, utilities and services will emerge. Over the years, supply and maintenance of urban housing and utilities have lagged behind demand due to limited resource generative capacity of urban areas would be inversely related to population concentration especially when we examine the boom in urban slums living in inhuman and miserable conditions. Karachi, for example, has 38 percent of its population residing in squatter settlements with no decent sewerage disposal system or access to drinking water facility. It was the emergence of grassroots organisations in Orangi, Karachi that paved way for people to take responsibility in bringing change in their own lives under constrained resource situation. The successful and sustainable approach to construction of low cost housing and development of infrastructure provides ample evidence to solve new emerging urban problems under severe resource constraint.

Migration of young males, mostly landless labourers, to urban in search of employment left women and older men in position of greater responsibilities but under scarce resources.



Besides, child bearing and rearing, women were pushed to care for household livestock and poultry, fetching of drinking water and fuel wood, and in some cases do the marketing of goods. Increased number of female entrepreneurs in rainfed or hilly areas is quite visible depicting changing female roles reflecting people's response to new situations.

### **Forest Management Crises**

Though only 4 percent of Pakistan's total land was estimated to be covered by forests but tremendous demand for wood for construction purposes only meant utilising the resource indiscriminately. Increased falling of trees due to commercialisation of forest wood and lack of alternate source of household energy and livestock forage for the rural poor, created enormous management problem for its sustainable growth. Moreover, shortened fallow periods and increased use of marginal lands for agricultural purposes, especially in hilly areas by poor contributed to soil degradation, land erosion, flooding and siltation of rivers.

### **Women and Environment**

Over the years, role of woman as a resource manager is being acknowledge in all developmental efforts. This has sensitised her vulnerable in societies where deterioration in environment is rapid. Historical neglect of women in getting education, adequate access to health, proximate location of resources, equitable returns to work, and social inequality leading to her undernourished and anaemic physique, etc. has made her worst off under environmental strains. Increased incidence of anemia among women especially pregnant women and higher rate of spontaneous abortions are matter of great concern. Deteriorating environment has further constrained her choices and power to make decisions in productive and reproductive avenues. Proponents of population planning argue that use of family planning methods supplement the choice element in a woman's life through making these methods accessible and to get her participation in managing fast deteriorating rural resources, and ensuring greater powers in decision making towards the well being of the community. The emergence of community based women organisations and their placement in development process in several developing countries have proved a real change in quality of life of all. Programmes developed by NGOs including income generating schemes, human resource development, and their involvement in development of indigenous technology and resource management have proved sustainable and successful for the communities.

### **Development Process in Isolation**

Industrial development, in Pakistan, took the traditional approach of economic growth, employment generation, capital gains and reinvestment in Pakistan. It was justified to in light of meeting urgent basic consumption needs of developing nation. The unfortunate part is the isolation in which this industrial development took place both with regards to its environmental effects and fulfilling welfare needs of the people. Similarly, the population programme initiated in early 1950s by NGO maintained a narrow focus on population control and neglected other important demographic events reshaping social structure in the light of massive rural to urban migration, emergence of Katchi abadis (urban slums), emergence of industrial estates, increased income disparity and skewed distribution of social services in favour of urban centers.

Breaking down of traditional social structure also played a key role in stimulating unabated population growth in Pakistan. In order to meet the rising demand for consumption items and services, intensified production in agriculture and industrial sectors encouraged problems like increased run-off and ecological hazards from agricultural chemicals, reduced genetic diversity in plants, increased threat to life of rare birds, besides water logging and salinity. Unfortunate destruction of fresh water fish in rivers like Kabul, Ravi, Chenab, etc. due to heavy discharge of

industrial organic effluents, severely, threaten the major source of livelihood of hundreds of families.

The high incidence of water pollution in urban areas, particularly with faecal waste, is a major cause of continued diarrheal disease and emergence of other diseases that were not prevalent earlier prominently. Increase in cancer problems is also phenomenal in Pakistan, in cities like Karachi, and around industrial concentrations like Kasur, Lahore, SITE (Karachi), Multan, etc. especially among poor and rural women.

Urban areas with population concentration and industrial estates encouraged another range of environmental hazard to its people. Labour union activities helped reduce work hazards in large industrial units but their irresponsible waste disposal and the mushrooming informal sectors industrial units with hardly any administrative control on resource utilisation and waste disposal play havoc with ecological complexion. These are a leading cause of water and air pollution, thereby ripening the case of forced massive migration in the near future. Rapidly growing urban concentrations also exhibit deteriorating environment due to industrial pollutants in atmosphere supplemented by smoke from ever increasing numbers of vehicles on the road. Increased respiratory ailments, sore throats, chronic cough, and eye ailments, etc. in the vicinity of Lahore industrial estates is indicative of considerable risks to human life. Similarly, cement industry in various locations show clear signs of severe ecological destruction besides health threat to residents in its vicinity, most of whom are poor labourers can not afford to migrate.

The industrial development that intended to bring welfare to the people seems to have taken a U-turn to bring spectrum of hazards to their source of livelihood and their life chances.

The complexity of interrelationship between environmental changes and population dynamics takes intricate shape over time. This dimension of associations is revealed through changing health problems, mortality patterns and fertility conditions over time. Emergence of high risk population groups especially those exposed to hazardous environment over longer durations, like low paid industrial and construction workers, women exposed to risky work conditions, and infants exposed to polluted water, air, and food intake could result in tremendous loss of productive capacities and human life. Unhealthy and undernourished mothers increase their chances of pregnancy loss and reproducing low birth weight infants. Historical evidence relates increased fertility to rising morbidity and mortality pattern, especially infants, and also due to increased incidence of poverty. Increased stress level, tension in relations, lower satisfaction, etc. could generally be expected, thereby, accumulating low self esteem for women. Two significant demographic events could be speculated: migration and changing age composition of the population. Increased rate of infant deaths overtime would encourage rapid ageing process of the society, while migration of the poor to safer havens would further frustrate the environment-population relationship. A revival of conservative and old traditional fertility behaviours to overcome fears of loss of infants and children, enhance insurance of family continuity, and old age security would put society in an other transitional state. Given the severity of issues, unless corrective measures are taken this predicted change may not have to wait for distant future.

## **Response to Population-Environment Concerns**

### ***Legislative Aspects***

Traditional society in the subcontinent provided communities and village people much higher responsibility and control over their immediate surroundings. At the time of independence, Pakistan inherited a resource exploitation system instituted by British colonists. The damage to sustainability of resource base, population growth and general welfare was long term and irreversible. Unfortunately, the phenomenon continued ever since with focus on resources use

again in an isolated form from the economic developmental process and population changes occurring in the society. A large number of piecemeal legislations on individual concerns following a sectoral approach were instituted to protect environment and enhance the quality of life. The intent of these legislations revolved around regulation of human behaviour and use of technology that does not lead to deterioration in environment. The focus of these legislations pertained to mostly to infrastructure and industrial sectors, followed by water management and forestry and wildlife covering quality control, waste disposal and health status, resource conservation, and policy direction. The promulgation of Pakistan Environment Protection Ordinance (1983) stays practically ineffective due to lack of powers necessary to get it implemented.

Population programme also followed in isolation from developmental process and environmental changes has never been linked with each other. The government programme focused on provision of contraceptive methods and increasing awareness about methods while population programme in private sector also focused on income generation and other developmental issues. Unfortunately, population policies and programmes have not been effective in making any change in population growth trend or even the uplift in the status of woman at national level.

### ***Awareness and People's Participation***

It is only in the recent past that public awareness about environmental issues and population concerns have increased tremendously mostly because of their direct interaction and some through mass media. Most of this awareness is an understanding of isolated problems not placed in proper context for generating adequate reaction for solutions. Due to massive nature of these problems, individuals and even communities take passive roles and avoid taking charge and evolve solutions to it. The neglect of NGOs and over emphasis on governments to undertake population-environment programmes has led to gross misdirection of strategies and emphasis to overcome the problem. The inability of government agencies to understand and translate population-environment relationship lies in its bureaucratic organisation which takes a one-time and static picture of isolated events to formulate broad generalisable policies. Experiences of Orangi Pilot Project (Karachi) in handling the sewerage disposal problem provides ample guidance to organise communities around environmental concerns, provision of the facilitator, and linking with appropriate government agencies to find viable solutions. It is only through this implementation and sustainability of the welfare activities in an integrated manner, such that no one problem is handled in isolation but with due consideration to community needs and resources an equilibrium for sustainability is reached.

### ***Resource Management***

Afforestation and reforestation efforts of hillsides and uncultivable land, and farm forestry has been accelerated considerably all over Pakistan under the provincial forest departments. At an aggregate level, these afforestation efforts try to provide protection to watershed, land erosion, and wild life besides providing alternate source of energy and forage, cover only a small portion of fragile areas. With growing demand for wood, domestic and commercial (3.5 mln Cub mts 1993 to 9.9 m cub mts 2018), the Forestry Master Plan estimates 8.8 million cub meters to be planted every year for sustainable growth. Protection of range lands is mostly left to non-public sector, mostly to communities to regulate grazing, which is hardly maintained. Reclamation of lost lands to increased desertification and salinisation is mostly public sector's responsibility. People's participation, institution building, and education process has emerged as strong processes of strengthening development be it use of agricultural chemicals, affluent and waste management, energy conservation, afforestation, controlling air pollution, etc. With unabated rise in demand for consumption items and services, the policy of sustainable development would seek elimination of imports of food grains. Growing constraints on cropable lands and water availability would seek growth of indigenous technology to support high yielding seed

multiplication, food security, immunity against disease, improved farm and water management, etc. to supplement development process.

### ***Need for Research***

The environmental problem varies among regions and social groups because of their degree of contact with specific types of pollutants. Most authorities consider environment to be a development issue but lack of adequate statistics and background research about population-environment nexus fails them to come up with adequate methodologies and sustainable solutions at grassroots. Exploratory research needs to be undertaken with direct participation of communities involved to examine not only the interrelationship but also to help in evolution of adequate linkage with development agencies to provide coverage and technical support. Identification of high risk groups, long term strategies and emergence of demonstration sites should be the prime goals of such undertakings. Moreover, due to non-generalizable situations especially, with high risk and affected groups, replication of research exercise at large number of locations must be acknowledged. Focus on fragile areas, high health risk zones in urban and rural would elaborate the role of pollution contributing agencies, the impact on effectees, and responsibilities of all concerned in eradicating the problem on long term basis. Non-governmental organisations and research oriented agencies in development could play vital role here.

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