

## **Climate Change, Migration and Urbanization: An Indian Scenario**

In this paper an attempt has been made to examine the role of migration as an aggravating factor which either in isolation or in conjunction with other factors like climatic change makes the circumstances more vulnerable for the urban population. The paper discusses the need for a planning document which is to be prepared in the context of demographic dynamics and its importance not only to city but to the regional planners and managers.

The consequences of climate change, including changes in the frequency and violence of extreme weather events and changing precipitation patterns (floods and droughts) are expected to have large impacts on people's livelihoods, especially in poor and vulnerable rural societies. In many of these societies migration has already been a livelihood strategy for generations. Changing climate that threatens people's livelihoods is therefore also likely to have impacts on their migratory behaviour. In the countries like India, it is rural to urban.

It warns water sources will become more variable, droughts and floods will stress agricultural systems, some coastal food-producing areas will be inundated by the seas, and food production will fall in some places in the interior. Developing economies and the poorest of the poor likely will be hardest hit.

In India, agriculture is the largest user of water, using more than 80% of usable freshwater, and a large proportion of the population derives its livelihood directly or indirectly from it. As concerns over water scarcity have mounted – accentuated by possible impacts of climate change like a general reduction in the quantity of available surface water and unanticipated alterations in the hydrological cycle with an increased severity of droughts and floods – there is a growing realization that water resource management focused on food security is urgently needed.

Moreover, a variety of factors have led to a fall in the average annual growth rate of the agricultural sector from more than 4% (1992–1997) to less than 2% (1997–2003), leading to a widening gap between food grain demand and supply. The water constraint in agriculture, due primarily to the sustained stress on limited freshwater resources that have become vital for increasing yields, is also affected by the rapid growth of non-agricultural water demand,

unsustainable overdraft of groundwater, and a slowdown in growth of investment in water supply infrastructure.

Agriculture, water, and poverty are inherently linked. It is highly likely that the rising water insecurity from climate change will mainly affect the poorest and most vulnerable by further limiting their access to the diminishing quantity of water available for domestic and productive purposes. Besides affecting agriculturalists, water scarcity will also have a deleterious impact on agriculture-related activities like animal husbandry and fisheries. Often, these activities as well as several domestic users and small-scale producers outside agriculture depend on irrigation systems for their water. Therefore, water for agriculture ensures not only food security but also livelihood security in a more general sense, for a large number of landless men and women.

The census data of India, 2001 shows that Mumbai received immigrants from all the states of India. Immigration is mostly dominated by the males of which more than one third is residing in the suburban districts of Mumbai. The immigrants are in the age groups of 20-39 years and cause of the immigration is work/employment. The urban population growth of Greater Mumbai and Mumbai urban agglomeration is increased over the decade 1991-2001; it is 20.03 and 29.94 percent respectively. Increased urbanization and the population influx into the city, geographical location of the city will then, in turn, exacerbate Mumbai's experience of the effects of deteriorating weather conditions. The city will not be able to meet the needs of population like air, water, open space, transportation, sanitation, housing, healthcare, power, communication, drainage etc. Half of the Mumbai population lives in slums. If there is the deluge of July 26, 2005, the elite's imagination of Mumbai turning into Shanghai will be shattered.

Census India 1991 depicts that rural to urban migration from Bihar, UP, Orissa, Kerala is high. 53 percent migrant reason for outmigration was employment and 52, 51 for Bihar and Kerala migrants respectively. Natural calamities were also the reason for outmigration in 1991 census. Assam, Orissa west Bengal and Andhra Pradesh migrant were high among this category of reason. Since, Natural calamity as reason of outmigration is not included in the 2001 census it is

difficult to say more. But naturally, the migrant affected due to natural calamities come under the employment cause.

Three mega-urban regions: Mumbai-Pune-Nasik (50 million), the national capital region of Delhi (more than 30 million) and Greater Kolkata (20 million) may be among the largest urban concentrations in the world will be largely affected due the rural outmigration.

In India, the recent NAPCC (National Action Plan on Climate Change) reiterates the commitment towards developing a multi-pronged, long-term, and integrated strategy for achieving key goals in the context of climate change. Two of the eight sector-specific missions within it deal with the different aspects of water meant for agriculture, namely the NWM (National Water Mission) and the NMSA (National Mission for Sustainable Agriculture).

Migration on a permanent or temporary basis has always been one of the most important survival strategies adopted by people in the face of natural or human caused disasters. However, our knowledge of the complex two-way relationship involving environmental change as both a cause and consequence of migration remains limited.

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