

# Climate change and migration: An emerging nexus

*It is true that forced and unplanned displacement has incurred massive economic, social and environmental costs to us. But at the same time it is also true that migration can both be the problem and solution in the context of climate change. Migration has the potential to be an adaptation strategy also.*

MD. MASHRUR RAHMAN MISHU

**S**INCE the dawn of human evolution, people have migrated across different places and sought a livable environment that would support their survival as well as aspirations for better life. The fundamental relationship between environment and migration has therefore been rooted in the human history. Now the reality of climate change adds a new dynamic to this nexus. Climate change is feared to accelerate the frequency of natural disasters and gradual environmental degradation which may induce people to migrate because of threats to their lives or livelihoods. Intergovernmental Panel on Climate Change (IPCC) in its first assessment report warned that the greatest single impact of climate change might be on human migration. However, there are uncertainties about the exact scope and scale of it as migration is essentially a multi-causal phenomenon and interacts with lots of other socio-economic factors. But the influence of climate change on migration is quite discernible and growing. International Organization of Migration (IOM) has predicted that the number of environment induced migrants may exceed 200 million by 2050 (IOM, 2010).

The effect of global climate change is not the same for all the countries of the world. Bangladesh is one of the countries which are on the frontline in this issue -- already booking its spot to be the most vulnerable according to the global climate change vulnerability index. 80% of our country's land is low-lying deltaic flood plain and one meter increase in sea level can inundate 18% of it and displace 20 million people (IPCC, 2007). However, physical exposure is not all about people's vulnerability to the climate change. In fact vulnerability is a function of exposure as well as their capac-

ity to adapt. Wealth and technology generally enhances this capacity while poverty limits it. In Bangladesh, lack of accessibility to resources especially of the marginalized social groups in the disaster prone areas is the major reason why people here are much more vulnerable than others to the impacts of climate change.

The first and foremost impact of climate change will be on the people who solely depend upon natural resource and crop production for their life and livelihood. But already farmers are not able to sustain the expected level of production against the growing demand. They are being forced to search for employment outside agriculture mostly in urban areas, especially Dhaka City which is already suffering from over concentration. The bulk of these urbanites are poor and they fail to avail accommoda-

tion and employment through formal mechanism. The consequence is nothing but the ever increasing number of slum dwellers. In the context of Dhaka City, the growth of urban slums is presently outpacing the urban growth by a wide margin. Each year, the city alone attracts between 300,000 to 400,000 new migrants (World Bank, 2007). According to an estimation of IOM, 40% of Dhaka city population live in slums and what is more concerning is that 70% of them are migrated due to some kind of environmental hardship in their place of origin. The situation can deteriorate in the coming decades when climate change impacts will be more pervasive.

In fact, the poor are not responsible for this human induced climate change but they are its worst victims. Again, the irony is that, it enforces the migrants living in more conflict prone areas. In maximum cases these people do not get the facilities of city services in legal terms. It is unfortunate that city authorities are trying to exclude the poor from city in the hope that it will discourage rural-urban migration. But it has to be considered that protecting the displaced people at their destination should be a priority not only because of the human rights or humanitarian concern, but also

because it fosters community resilience. They contribute significantly in urban economy and also help to diversify income of rural areas.

It is true that forced and unplanned displacement has incurred massive economic, social and environmental costs to us. But at the same time it is also true that migration can both be the problem and solution in the context of climate change. Migration has the potential to be an adaptation strategy also. It can allow income diversification and help reduce risk to lives and livelihoods. Circular and seasonal migrations create opportunity to supplement livelihoods in the vulnerable region by extracting resources from outside that region. That is why a comprehensive stance in this circumstance should be to minimize the forced, unplanned migration as far as possible as well to facilitate the role of migration as an adaptation strategy where such kind of displacement becomes inevitable. In the coming decades the later could be more important as only local in-situ resilience system may fail to support the distressed people due to the irreversibility of loss and continuous depletion of income and livelihood in the disaster prone areas.

Yet, for climate migration to be a viable adaptation strategy, it needs to be well managed enhancing positive and sustainable development outcomes. Especially, the movement pattern which is primarily directed towards Dhaka City needs to be controlled. Urban oriented movements need to be dispersed to other small and medium sized cities.

Unfortunately, the rights and needs of climate induced migrants fall by way side as there is no national and international framework which explicitly address this issue. Bangladesh has two comprehensive policy documents in climate change concern -- the National Adaptation Programme of Action (NAPA) and the Bangladesh Climate Change Strategic Action Plan (BCCAP) launched in 2005 and 2009, respectively. However, it is fair to say that contemporary migration issues are not effectively mainstreamed in either of these documents. Hence, given our vulnerabilities to climate change, it has become imperative for us to conceptualise the human security dimension and mainstream migration policies into our adaptation strategies.

The writer studies Urban and Regional Planning.  
Email: mashrurmishu@yahoo.com



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**Continuous depletion of livelihood assets and resource base due to climate change force people to be migrated into big cities and cause proliferation of slums devoid of civic amenities.**

## Urban forestry for green city

*Green space in Dhaka city is now questionable in the context of global standard. Inadequate tree coverage in The city is resulting in many environmental debilities as well as human health related problems.*

MD. ZAHIDUR RAHMAN AND SAEED AHMED SIDDIQUEE

**T**HE global population pressure has increased in urban areas with people thronging the cities in quest of a better life. According to the UN Population Division, about 44% of the total populations in developing countries are living in urban areas. There is no doubt that the urbanization will proceed to have significant impact on the ecology, economy and society at local, regional, and global levels. The great impact has been observed in the urban green spaces including urban forestry, parks, playgrounds, domestic gardens, roadside open spaces and urban vegetation.

According to World Health Organization (WHO) there should be 9 sq. meter green space per city dweller for ensuring better life. In developed countries, normally, they have more trees (more than 20 sq. meter green spaces per city dweller) to meet the ecological balance for human well-being compared to cities in developing countries, which often fall below the minimum standard of open green spaces set by WHO. For example, most of the cities of China have 6.52 sq. meter green coverage per head.

Now let us look at the capital city of Bangladesh, Dhaka, which is one of the fastest growing mega cities in the world. This metropolitan city has an area of 131 sq. kilometer with more than 15 million population. Already unplanned urbanization has caused serious ecological imbalances in the city. FAO (2008) pointed out that Dhaka city has 21.57% open space of which city parks occupy 0.89%, urban forestry 0.02%, gardens 0.90% and 12.12% belongs to agriculture. The green space has been reducing gradually while increasing is the number of buildings without considering environmental protection. According to the Chief Town Planner of Dhaka City Corporation (2003), an ideal city needs 20% area covered by trees but there is only 8% vegetation in the city. Currently, almost 15 million dwellers of

shown as 42.3 degree Celsius in Dhaka city. The urban heat has sharply increased in the recent decades.

Department of Environment (DoE) pointed out that air pollutant (SO<sub>x</sub>, NO<sub>x</sub> and CO<sub>2</sub>) levels in Dhaka city are about 4 to 5 times higher than the prescribed levels of Air Quality Standard (AQS) in Bangladesh. Such pollutants remain and persist with air due to lack of tree coverage. Several research in US shows that trees can remove pollution by intercepting airborne particles. Another study of BAPA (2002) pointed out that air pollution causes headache, burning of eyes, pain in throat, bronchitis, breathing problems, heart disease, anemia, mental problems, kidney disease and even cancer. According to experts, about 33% of Dhaka dwellers suffer from hearing problems due to noise pollution. In US one research estimate suggests that 7db noise reduction is achieved for every 33 meter of forest. Therefore, vegetation can play an important role in attenuating noise and absorbing sound energy.

Another important hydrological func-

tion is growingly distressed as protection of drinking water resources is being lost by reducing woodland and trees.

Undoubtedly it is true that increasing the area of green space will increase the volume of pure water for city dwellers. The limited trees in the parks and streets in Dhaka are unable to help infiltrate and recharge required volume of rainwater underground. Considering importance of woodland for water purification, Denmark has demarcated woodland close to the cities.

Forthrightly, we should emphasize urban forestry and incorporate it into the urban planning and development. Generally, we can do this in narrower scale beside the river and canal banks around the city, government office spaces, both private and public universities, schools and colleges, parks and the play grounds, private open spaces, and slums in Dhaka city. The sum total can present a remarkable contribution in the urban forestry towards building a green city, which will play an important role for green job gener-

ation, and improving health, environmental quality as well as aesthetic value of urban landscapes.

Apart from that, the master plan of Dhaka city should consider remarkable green space for ensuring urban dwellers a healthy life in future. Rajdhani Unnayan Kartripakha (RAJUK) should emphasize housing with garden strategy for the planned area under its master plan. A research is crucial for selecting and introducing types of tree in the open areas of Dhaka city. A concrete coordination among Forest Department, Dhaka City Corporation (DCC), RAJUK and other stakeholders is needed to extend the urban forestry. Yet, the forest policy didn't consider urban forestry. Hence, possible sensitization of policy makers is urgent now. Considering all the advantages of urban forestry, a holistic approach is needed for representing green cities of future.

Md. Zahidur Rahman and Saeed Ahmed Siddiquee work in the field of environment and climate change and can be reached at zahidao@gmail.com and shaikatbangla@gmail.com, respectively.



Urban forestry is a must for building a green city.

