



CHAPTER 10

The Social Dimensions of Climate Change

CHAPTER 10

The Social Dimensions of Climate Change⁶⁸

The Human Face of Climate Change

Climate change could be the defining human-development challenge of our time. The likely impacts of climate change threaten to make it more difficult to reduce poverty and to stall the hard-earned progress made in achieving the Millennium Development Goals (Box 10.1). In South Asia, the early signs of dangerous climate variability are already threatening the lives, livelihoods, and health of millions, especially the poor and vulnerable. Future changes in precipitation, sea level, glacial cover, and incidence of extreme events are expected to affect food security, nutrition, availability of

water, sanitation, shelter, health, labor productivity, productive sectors, and household incomes. These changes may exacerbate the already low levels of human development in the region (Table 10.1).

Climate change affects everyone, but not equally. Vulnerability is dictated by both individual and social factors. The livelihood context, location, level of income, education, asset holdings, gender, age, social class, and ethnicity all combine to determine vulnerability and coping abilities. Different social groups will be able to adapt and respond differently to climate variability depending on the scope and strength of their coping mechanisms, and the level

Table 10.1 Human Development and Vulnerability in South Asian Countries

Country	Daily per Capita Calorie Supply (kcal) in 1999	Population (%) Living below US\$1/day (1990–2002)	HDI* Rank
Bangladesh	2,201	36.0	139
Bhutan	–	–	134
India	2,417	34.7	127
Nepal	2,264	37.7	136
Pakistan	2,462	13.4	135
Sri Lanka	2,411	6.6	93

Source: Watkins 2007

* Human Development Index

⁶⁸ Authors in alphabetical order: Nilufar Ahmed, Hari B. Dalal, Samantha L. Forusz.

of societal influence. Within social groups, too, some may be more vulnerable than others depending on their economic status, level of education, and physical location.

Those most heavily dependent on natural resources and exposed to multiple risks of climate change are the most vulnerable—the rural and urban poor, the women, children, and indigenous peoples. As a result, they will suffer disproportionately from the expected adverse impacts of climate change. Poor women are vulnerable because of socially constructed gender roles and behaviors, while the rural poor and indigenous people, with their greater dependence on climate sensitive sectors and lower asset holdings, are more exposed to climate shocks

and also have limited coping capacity. Urban slum dwellers, with poor amenities and poor access to basic sanitation, are the first to suffer from damages to assets, spread of disease, and loss of lives as the incidence of flooding and other extreme events become more prevalent in the future.

Vulnerable Groups to Climate Change

The likely impacts of climate change will not be gender-neutral. Climate change affects women and men differently because of differential access to resources and economic opportunities. The women’s labor force participation rate in South Asia is among the lowest in the world and varies between 7 and 40 percent. Wage disparities are also striking. On average, women earn 30–50 percent

Box 10.1 Potential Impacts of Climate Change on MDGs

Millennium Development Goal	Examples of Link with Climate Change
Goal 1: Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> Climate change is projected to reduce poor people’s livelihood assets such as health, access to water, homes, and infrastructure. Climate change is expected to alter the path and rate of economic growth due to changes in natural systems and resources, infrastructure, and labor productivity. A reduction in economic growth directly impacts poverty through reduced income opportunities. Climate change is projected to alter regional food security. In Africa, in particular, food security is expected to worsen.
Goals 4, 5, and 6: Health-related goals: <ul style="list-style-type: none"> Combat major diseases Reduce infant mortality Improve maternal health 	<ul style="list-style-type: none"> Direct effects of climate change include increases in heat-related mortality and illness associated with heat waves (which may be balanced by fewer cold-related deaths in winter in some regions). Climate change may increase the prevalence of some vector-borne diseases (for example, malaria and dengue fever) and vulnerability to water-, food- or person-to-person borne diseases such as cholera and dysentery. Children and pregnant women are particularly susceptible to vector- and waterborne diseases. Anemia—resulting from malaria—is responsible for 25 percent of maternal mortality. Climate change will likely result in declining quantity and quality of drinking water, which is a prerequisite for good health, and it may also exacerbate malnutrition—an important cause of ill health among children—by reducing natural resource productivity and threatening food security, particularly in sub-Saharan Africa.
Goal 2: Achieve universal primary education	<ul style="list-style-type: none"> Links to climate change are less direct, but loss of livelihoods and assets (social, natural, physical, human, and financial capital) may reduce opportunities for full-time education in numerous ways. Natural disasters and drought reduce children’s available time (which may be diverted to household tasks), while displacement and migration can reduce access to educational opportunities.

Millennium Development Goal	Examples of Link with Climate Change
Goal 3: Promote gender equality and empower women	<ul style="list-style-type: none"> Climate change is expected to exacerbate current gender inequalities. Depletion of natural resources and decreasing agricultural productivity may place additional burdens on women's health and reduce time available to participate in decision-making processes and income-generating activities. Climate-related disasters have been found to impact more severely on female-headed households, particularly where they have fewer assets to start with.
Goal 7: Ensure environmental sustainability	<ul style="list-style-type: none"> Climate change will alter the quality and productivity of natural resources and ecosystems, some of which may be irreversibly damaged, and these changes may also decrease biological diversity and compound existing environmental degradation.
Global partnerships	<ul style="list-style-type: none"> Global climate change is a global issue and response requires global cooperation, especially to help developing countries to adapt to the adverse impacts of climate change

less than men. Though primary school enrolment has increased, gender parity dropout rates for girls across the region are higher than those for boys; and literacy rates of women are lower than men's. Low levels of education, poor health, and limited access to resources and employment not only depress women's quality of life but also limit productivity and hinder and growth.⁶⁹ The so-called benign neglect of girls has led to large gender-based health disparities. Female child mortality rates are typically high across South Asia (see Table 10.2). This is a consequence of nutritional deficiencies, lack of preventive care (specifically immunization), and delays in seeking medical intervention (Fikree and Pasha 2004). Contrary to global norms, in some states in India and Pakistan, there are fewer women than men. Climate-induced shortages of resources would likely accentuate these prevailing inequalities, suggesting an urgent need to address the underlying socioeconomic drivers of gender disparities.

⁶⁹ Girls are married off at a young age and about 50 percent have their first child by age 20. In many parts of the region—notably India and Bangladesh—dowry puts pressure on families of girls to marry them early, leading to a preference for sons. In some countries, deaths of women associated with childbirth are among the highest in the world. Contrary to demographic norms, more girls than boys die at a young age in some countries. Legal and judicial systems, as well as law enforcement mechanisms, have failed to address the high incidence of violence against women in both private and public domains.

Climate change would place additional burdens on women by altering the roles and tasks they perform. Low-caste, tribal, and poor rural women that depend on the natural environment for water, fuel, fodder, and food are the ones that would be most affected by climate-induced changes. As crop yields decline and natural resources become scarce, women's workloads increase, jeopardizing their chances to work outside the home or attend school. In times of drought, they will also have to spend more time performing another typical female responsibility: carrying, purifying, and supplying the family's water.

Rural women are also disproportionately affected by natural disasters. In natural disasters female mortalities vastly outnumber those of males.

Table 10.2 Probability of Dying under Age 5 (per 1000)

Country	Male	Female
Bangladesh	71	73
Bhutan	93	92
India	87	95
Maldives	38	43
Nepal	81	87
Pakistan	105	115
Sri Lanka	20	16

Women accounted for 90 percent of the 140,000 people killed in the 1991 cyclone in Bangladesh. Social exclusion makes women more vulnerable to natural disasters. Cultural and behavioral norms often restrict women's mobility, while economic inequality such as the lack of assets, shelter, and resources make them more susceptible to disaster-related physical impacts. Effective adaptation strategies would need to address these fundamental gender disparities.

The rural poor whose livelihoods are based on agriculture will be directly impacted by climate change. Recent research suggests that by the middle of the 21st century, the output of major crops in Central and South Asia could fall by as much as 20–30 percent in some scenarios. The yields of key cash crops such as tea, rubber, and coconut would also be adversely affected, though the magnitude is unknown (MENR 2000). The consequences would be particularly severe for women and children. Through much of South Asia, custom dictates that male members of the household are favored in the distribution of food, suggesting the possibility of increased nutritional deficiencies amongst women and children. This cultural phenomenon is responsible for chronic nutritional deficiencies among women. For example, in Bangladesh the nutritional intake of women is 88 percent that of men. In Nepal, approximately, 28.7 percent of rural women have a body mass index below the cut-off point and 60 percent of women in the region suffer from anemia (IFAD 2000). The prevalence of anemia in women ages 13–39 years is the highest in South Asia (see Table 10.3). The likely impacts of climate change could exacerbate the inequalities in food consumption.

In semi-arid areas of South Asia, households dependent upon pastoral lands for livelihoods face the threat of food and water insecurity and malnutrition. Loss of soil moisture due to temperature increases and inadequate precipitation will reduce water supplies and intensify foraging and grazing activities that degrade soil quality and

Table 10.3 Prevalence of Anemia in Women Ages 13–49 Years, 1992

Region	Nonpregnant (%)
Sub-Saharan Africa	40
Near-East and North Africa	31
South Asia	64
South-East Asia	47
Middle America and Caribbean	27
South America	21

Source: Walker 1997

land productivity. The drylands of Pakistan, India, and Afghanistan are most susceptible to the risks of more intense drought and desertification. Even moderate growth in population will increase the competition for scarce water and pasture resources. In other areas, new disease burdens could be brought by higher temperatures and more variable rainfall patterns. The incidence of climate-sensitive diseases such as malaria is already high and could emerge as leading cause of child mortality in the future.



Michael Foley/World Bank

Indigenous people, with their dependence on forests and natural resources, are especially sensitive to climate variations. Nearly half of the indigenous peoples in the world live in South Asia (around 100 million). They are among the poorest in the world. Indigenous livelihoods and cultures are closely intertwined with ecosystems upon which they depend. They are therefore especially vulnerable to climate-induced fluctuations in ecosystem productivity. In addition, many of the proposed mitigation measures, such as the replacement of forests with plantations and biofuel crops, have the potential to undermine the customary rights to lands and natural resources of indigenous peoples.

Recognition of indigenous peoples' customary rights and their inclusion as key partners and decision makers in the design and implementation of mitigation and adaptation interventions is necessary to enhance coping capacities. They should be recognized as repositories of traditional ecological knowledge passed down over many generations and having the potential to complement and enrich existing scientific knowledge of changing climates and coping mechanisms. Interventions also need to recognize that indigenous people, with their limited human capital, may have limited capacity to adapt to changes in livelihood and economic circumstances.

In the coastal area, communities will have to confront storms of greater magnitude and frequency, rising sea-water level, and ocean acidity. Most vulnerable are those with poor climate-resistant dwellings and a high dependence upon fishing and eco-tourism. As an example, the communities of the Sundarbans, among the poorest in the region, could be trapped to a systemic cycle of poverty as seasonal flooding and natural disasters erode their coping capacities, damage their settlements, and undermine livelihoods.

Climate change may also induce forced migration from rural areas. Distress migration

patterns are typically shaped by assets, community social capital, networks, and support from local institutions. The possible immediate impacts of climate stressors such as sea-level rise, increased flooding, and prolonged droughts would fall on local communities and ecosystems. Ripple effects could be felt beyond the borders of these countries if there is large-scale displacement of populations. Migration could increase tension and competition for resources in urban areas and limited space in already crowded cities. Poor households are usually forced into urban slums that are vulnerable to climate risks and where there is limited access to safe water and sanitation and high rates of child mortality. The gender dimension of migration is also significant. Male members of households are typically more mobile and leave vulnerable areas in search of employment opportunities, resulting in social disruption. In some areas the status of women is defined in relationship to their male partners. The absence of male members of the family may add to already existing barriers to accessing public services and health care facilities, often located at a distance from local villages.

Social Development Adaptation Strategies

Strengthening local governments and communities: In order to increase their preparedness to adapt and mitigate the impacts of climate change, local governments and communities will need to build their capacity to raise awareness, engage stakeholders, undertake adaptation and resilience-building programs, and deliver critical services in postdisaster settings. Robust governance mechanisms will help ensure the effective delivery of adaptive responses, strengthen a community's capacity to cope, and mitigate the impacts of a climate-related shock. Cohesive communities are better equipped to respond to external shocks, including the growing risks associated with climate change. Human society has an inherent quality to work collectively

and respond to any urgent problem or crises. As most rural societies in South Asia are community based, social capital and social networks can play a role in building climate resilience. Not only are communities with strong social capital more climate resilient, but they can also play a role in promoting local government accountability. Finding ways to strengthen communitarian responses to climate crises would provide an effective way of building climate resilience. Already existing approaches that promote decentralized, participatory decision making and accountability can be utilized for climate-change-related initiatives to strengthen social capital, improve livelihood options, and increase food security. Local institutions and other first responders will need to deliver or facilitate short-term relief and safety-net measures. Close institutional coordination and partnerships are needed among public and civil society institutions. As part of the process, poor and vulnerable groups will need to strengthen their voice and effectively use their political capital to demand access to services and support.

Promoting consultation and participation: In crisis situations, communication systems play a critical role. Poor and vulnerable people are often

the last ones to understand what is happening and may be excluded for reasons of caste, ethnicity, gender, and education from public dialogue. As overreliance on one-way communication can result in the exclusion of vulnerable groups from critical information. Work on the promotion of participation among communities and civil society organizations can become a useful tool in diversifying the available avenues of communication.

Managing resettlement and rehabilitation: Estimates show that with just a one to two degree increase in temperature in a country like Bangladesh, more than 35 million people may need to be physically relocated. The same is also true for countries with expanded valleys or plains like India and to some extent Pakistan, particularly in its central province (Karachi Bay). There are a number of likely climate-change scenarios that could result in the need for mass involuntary resettlement and economic rehabilitation. Multisectoral experience in helping governments and other agencies design and implement context-specific resettlement and rehabilitation plans (under Operational Policy 4.12) across the region could be effectively applied to the resettlement and rehabilitation needs associated with climate change.

Enhancing resilience of indigenous peoples in culturally appropriate ways: Through the process of “free informed prior consultation,” Social Development could be directly involved in ensuring that indigenous peoples participate in and benefit from Bank-funded operations in a culturally appropriate way. It is important that any adverse impacts are avoided, or where not feasible, minimized or mitigated. Experience in safeguarding the assets and indigenous knowledge of these communities, as well as knowledge of how these communities have adapted to changes in their external environment over time, would be a valuable resource in designing adaptation plans or interventions that will involve indigenous and traditional communities as key partners.



Michael Foley/World Bank

Filling knowledge gaps: In addition to providing operational support, there is a need to undertake research and analytical work to better assess the socioeconomic implications of climate change. Further work is needed to improve our understanding of social risk management,

migration, social capital, conflict management, and so forth—areas where local and country knowledge could be effectively applied—and their impact on helping the poorest and the most vulnerable adapt to and mitigate the effects of climate change.

Box 10.2 Good Practice Example: Community-level Involvement in Jharkhand, India

Kanke, a small village in Ranchi District in Jharkhand, India, serves as an example of how social capital aids in climate-change adaptation. In the 1970s, state government initiated a small irrigation project, which after three years of implementation, became nonfunctional. Nonparticipation of community in the planning and implementation stage of the project was cited as the main reason behind the project failure. In 2001, senior citizens from Kanke approached the state government officials and expressed a need of an irrigation project. They proposed their own plan and mechanism of water distribution. Except for the cost of a water lifting device and conduit pipes they did not seek any other external assistance. With their own local knowledge, villagers implemented the project themselves by forming a ‘village development committee.’ An impact study of this project shows that crop production increased and almost stabilized.

Source: Prasad et al. 2008

Table 10.4 Climate-change Risks and the World Bank’s Potential Role

Risks	Priority Response
<ul style="list-style-type: none"> • Increased poverty, vulnerability, and nutrition insecurity • Social conflict • Aggravation of social exclusion and inequity • Indebtedness in climate vulnerable areas • Migration • Increased urban slum population 	<ul style="list-style-type: none"> • Awareness raising, social mobilization, and capacity building • Education and skill training for women, indigenous populations, and other vulnerable groups for reducing agricultural dependence. • Promotion of SHGs; enhancement of access to microfinance and banking services • Strengthening public-private partnerships and social capital of vulnerable groups, their access, and decision making • Promotion of community-based asset building and sharing of natural resources