



# Climate Change and Food Sovereignty

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*A concept note to initiate discourse within the Asia-Pacific Network for Food sovereignty (APNFS)*

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## Climate Change and Food Sovereignty

Climate change is a global problem but communities in developing countries are likely to suffer most from the negative impacts of climate change<sup>1</sup>. Over the last 100 years (1906–2005), global temperature has increased by 0.74°C. The global average temperature is expected to increase by about 0.2°C per decade over the next two decades<sup>2</sup>. The atmospheric concentration of carbon dioxide is now far higher than in the last 650 000 years and has been growing faster in the last ten years<sup>3</sup>. The best estimates indicate that the Earth could warm by 3° C by 2100. Global average sea level is expected to rise by 18 to 59 cm by the end of the 21<sup>st</sup> century. Projected sea level rise could flood the residence of millions of people living in the low lying areas of South, Southeast and East Asia. Throughout Asia one billion people could face water shortage leading to drought and land degradation by the 2050<sup>4,5</sup>.

Climate change presents significant threats to achieving all of the Millennium Development Goals, particularly those related to eliminating poverty and hunger and promoting environmental sustainability<sup>6</sup>. Climate change may also undermine capacity of the government to support people to sustain livelihoods<sup>7</sup>. Climate change may undermine human security by reducing access to, and the quality of, natural resources that are important to sustain livelihoods. One study has documented that there is a strong association between poverty (income levels) and environmental problems related with pollution, water and sanitation, solid waste and the risk of disasters, e.g. floods<sup>8</sup>. Research in South Asia has also revealed that people with sufficient assets can protect themselves physically and socially from the impact of a cyclone or flood even if physical defense barriers are absent or fail<sup>9</sup>. Large-scale

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<sup>1</sup> Jarraud, M (2003) Climate change and global energy needs: A 21st century perspective, World Meteorological Organization in Renewable Energy 2003, World Renewable Energy Network (affiliated to UNESCO), Sovereign Publications Ltd., London.

<sup>2</sup> IPCC, 2007: "Fourth Assessment Report (AR4)", Intergovernmental Panel on Climate Change (IPCC), 2007

<sup>3</sup> <http://www.greenfacts.org/en/climate-change-ar4/index.htm>

<sup>4</sup> Christensen J H, Hewitson B, Busiuc A, Chen A, Gao X, Held I, Jones R, Kolli R K, Kwon W-T, Laprise R, Magaña Rueda V, Mearns L, Menéndez C G, Räisänen J, Rinke A, Sarr A and Whetton P. 2007. Regional Climate Projections. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt K B, Tignor M and Miller H L (eds)]. Cambridge University Press. Cambridge, United Kingdom and New York, NY, USA

<sup>5</sup> Cruz R V, Harasawa H, Lal M, Wu S, Anokhin Y, Punsalmaa B, Honda Y, Jafari M, Li C and Huu Ninh N. 2007. Asia. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Parry M L, Canziani O F, Palutikof J P, van der Linden P J and Hanson C E (eds). Cambridge University Press. Cambridge, UK. pp. 469 – 506.

<sup>6</sup> <http://www.undp.org/climatechange/adap01.htm>

<sup>7</sup> Barnett, J and Adger, N, 2005: Security and Climate Change: Towards an Improved Understanding, Paper presented at an International Workshop "Human Security and Climate Change" Holmen Fjord Hotel, Asker, near Oslo, 20–21 June 2005

<sup>8</sup> Smith D, Timberlake M 2002: "Global Cities" and "Globalization" in East Asia: Empirical Realities and Conceptual Questions. University of California. Paper 02-09. <http://repositories.cdlib.org/csd/02-09>

<sup>9</sup> Winchester, P. (2000). Cyclone mitigation, resource allocation and postdisaster reconstruction in South India: lessons from two decades of research. *Disasters* 24, 18-37.

disasters such as floods and cyclones intensify household food insecurity and increase the prevalence of chronic energy deficiency and micronutrient deficiencies among poor.

Climate change impacts can be considered as a function of severity and importance of the affected resource, timing of significant or noticeable impacts and certainty of climate change or the pattern of the climate change itself. Climate change will have a massive impact on food production and may jeopardize food security in many regions. Warmer temperatures will affect crops and crop production, changes in rainfall patterns will be as important. Climate change will also influence the availability of water for human consumption and for food production. Loss of land through sea level rise and other consequences like erosion caused by wind and water will also affect the agriculture production. The Food and Agriculture Organisation (FAO) has estimated that climate change could cost 65 developing countries about 280 million tons in lost cereal production, equivalent to about 16 percent of agricultural output<sup>10</sup>. Across the developing world, climate change could potentially reduce the amount of rain-fed land by 11 percent by 2080. A United States Department of Agriculture study indicates that initially staple crop yields may rise but, as temperature increases beyond 1.2 degrees, yields will begin to decrease<sup>11</sup>.

Food sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self reliant; to restrict the dumping of products in their markets. Food Security is an integrated part of Food Sovereignty. Food sovereignty ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty does not negate trade, but rather, it promotes the formulation of trade policies and practices. In the global context, only ten big multinational corporations control about 40% of world seed market that which indicates that the food security of the planet is more-and-more controlled by only few multinational corporations. Food security can not be ensured by few corporations who are increasingly monopolizing food production and food chain, and „right“ to food does not mean that State will purchase any kind of food, including GM food, and can dump on the poor in the name of „rights“. So, narrow „right“ base approach has the imminent danger of providing an alibi to create

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<sup>10</sup> <http://www.planetark.com/dailynewsstory.cfm/newsid/31554/story.htm>

<sup>11</sup> <http://www.ers.usda.gov/publications/aib765/aib765-8.pdf>

effective demand for transnational food corporations. This is the reason why we demand „food sovereignty“ and not merely „food security“.

Climate change will disproportionately affect the world's poor, approximately two thirds of whom are women.<sup>12</sup> Women and children are most vulnerable to hunger related deaths and illness which would be indirectly exacerbated by climate change through increasing food and water shortages. According to the FAO 2006 State of Food Insecurity in the World report, the number of hungry people in the world is growing at a rate of four million a year. In general, food sovereignty critically requires promotion of food availability (e.g. diversification of agriculture production and food processing and storage infrastructure, pro-poor market mechanism, continual food access (income diversity, prices, employment creation, control of assets and resources), and reducing risk (improve coping mechanism, better risk management, adequate disaster shelters, household and community focused flood-proofed facilities development). Hence, the linkage between climate change and food sovereignty requires risk-reduction focused strategies.

The lack of scientific information and its critical understanding as well as social perception regarding climate change imposes a major challenge for people at all levels from making the critical decisions that are necessary to adapt. It is important to devise viable strategies and pro-poor policy approaches by integrating climate change, Food Sovereignty & Agriculture for reducing climate change vulnerability. However, without social and technical data about the nature of climate change, a decision for choosing the viable strategies to mitigate climate change impact is often difficult. For climate sensitive regions, the policy should take into account the unique natural characteristics of the region. It is essential to have climate adaptation planning in such a way that conserves and sustains the ecosystems and support the poor and ensures food sovereignty for the growing population. We have to consider that since farming systems might be seriously disrupted due to climate change, a few coping mechanisms might be available to local people to ensure food sovereignty. The consequences of climate change will increase livelihood insecurity, malnutrition, unemployment, lack of safe drinking water and water-borne diseases throughout the Asia-Pacific region. It is axiomatic that there is no way except to explore the process and options that could ensure food sovereignty in the Asia-pacific region through climate vulnerable people“s increased access to resources, institution, transfer and adoption of new technology, and diversification of livelihood options.

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<sup>12</sup>Friends of the Earth Australia, 2003, "Changing the future of the world's poor?" [http://www.foe.org.au/download/future\\_poor.pdf](http://www.foe.org.au/download/future_poor.pdf)