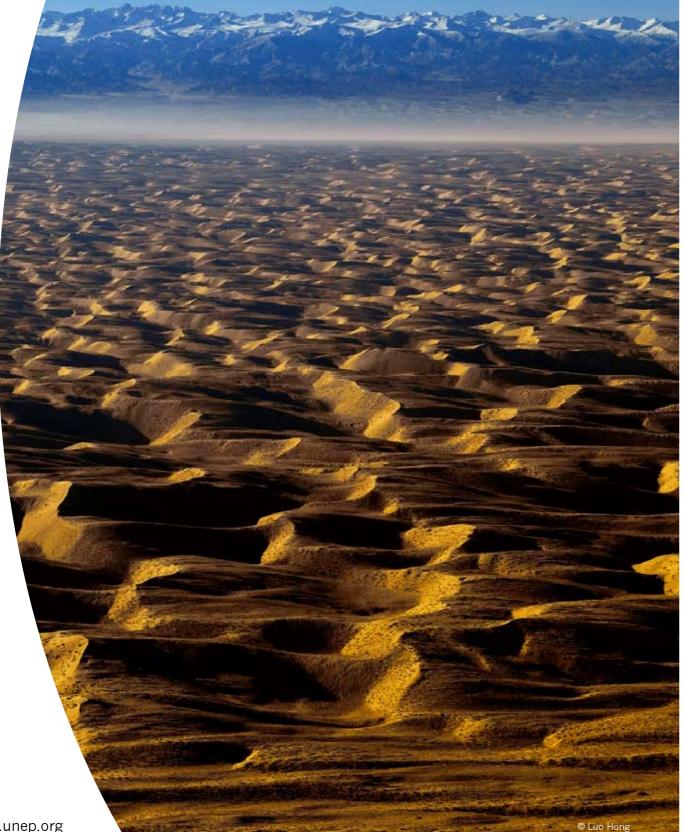


Agriculture, Agro-biodiversity and Climate Change



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The agricultural sector is one of the largest contributors to greenhouse gas emissions, second only to the energy sector.¹ Conversely, climate change affects agriculture throughout In light of the foregoing, the agricultural sector faces the world. According to the fourth assessment report of multiple challenges. While intensification and diversification the Inter-governmental Panel on Climate Change, crop yield of agriculture is key to securing food for local people, in losses as a result of climate change will be more severe in the the absence of clear understanding of their impacts on tropics than in temperate regions. Estimates indicate that agriculture, they can be problematic. Though measures to between 75 million and 250 million people in Africa will be reduce the use of fertilizers, to increase organic inputs and affected by water shortages caused by climate change.² As to deploy new varieties of crops are suggested as better in any situation of economic imbalance, the poor will be the agronomic practices, more clarity is required regarding most affected – losing livelihood opportunities and access to their impacts on climate. For example, the selection of rice food and water. Many mitigation and adaptation measures varieties that include wetland rice in sub-Saharan Africa are beyond the reach of countries with severe resource can reduce deforestation as well as management costs and constraints. emissions.5

Adapting to climate change Agriculture could also benefit from emerging areas of climate change action. For example, it could profit from the benefits Adaptation to climate change should be considered from of land uses that sequester carbon, from the emerging a contingency planning process perspective. Many least markets for trading carbon emissions. Such activities offer developed countries have had the opportunity to develop higher returns than those arising from forest conversion to National Adaptation Plans of Action in the context of the agricultural land. Post-2012 discussions under the Kyoto United Nations Framework Convention on Climate Change Protocol to the United Nations Framework Convention on but implementation of those programmes and strategic links Climate Change might consider exploring credits for the to resourcing actions are often lacking. Adaptation in the sequestration of carbon in soils through conservation agricultural sector can be seen in terms of both short-term tillage in agriculture as well as agroforestry in agricultural and long-term actions. The provision of crop and livestock landscapes.6 insurance, social safety nets, new irrigation schemes and local management strategies, as well as research and Livestock improvements brought about by more research development of stress resistant crop varieties form the core on ruminant animals, storage and capture technologies of short-term responses. Long-term responses include refor manure and conversion of emissions into biogas are designing irrigation systems, developing land management additional contributions that agriculture can make towards systems and raising finances to sustain adoption of those mitigating climate change.7 systems.³

National agricultural priority setting should consider climate The Canadian agricultural sector has identified 96 distinct change responses. While the biophysical impacts of climate adaptation measures in agriculture including altering the change on agriculture and vice versa are better understood, topography of land; changing farming systems; using different the social and economic impacts have not been researched crop varieties; making governmental and institutional changes adequately in many developing countries. With increasing and researching new technologies to take up the challenges trade distortions and the changing prioritization of agriculture posed to agriculture by climate change. in developed countries, developing countries affected by climate change should focus on developing suitable national, Agriculture and mitigation regional and global measures that will provide a safety net in the short term, should productivity fail owing to climate Livestock and crops emit carbon dioxide, methane and nitrous variability and change.

oxide making agriculture a major source of greenhouse gases. Some 80 per cent of these emissions come from developing Institutional and human resource capacities supported by countries. Agriculture is also a major cause of deforestation sustained funding options in the form of direct or indirect according to reports of the United Nations Framework investments into adaptation to climate change in agriculture Convention on Climate Change. Nitrous oxide emissions from are essential. Mainstreaming climate change issues into soils, because of the use of fertilizers and manures and national economic and development plans is critical to methane from livestock production account for a third of nonenabling countries tackle the impacts of climate change on carbon dioxide emissions. Land use change, compounded by agriculture and reducing the negative effects of agricultural agriculture, also reduces carbon sequestration.⁴ practices on climate change.

Challenges

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³ FAO, 2005 Background document for thirty first session of the Committee on World Food Security. FAO, Rome.

⁴ World Development Report, 2008. World Bank, Washington, United States of America.

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