

Project Title	Contact Person	Description
2020 Focus No. 16: Agriculture and Climate Change: An Agenda for Negotiation in Copenhagen	Gerald Nelson	This 2020 Briefs series on Agriculture and Climate Change provides an overview of the importance of including agriculture in the international climate change negotiations, with successive briefs providing more specific policy recommendations related to adaptation and mitigation.
Climate Change and Drought in Central Asia and China	Ephraim Nkonya	This project aims to increase knowledge related to climate change and drought management, especially on how different ecosystems can adapt to climate variability and extreme climate events to achieve sustainable, equitable, and productive use and conservation of natural resources—including water, soils and biodiversity—within an ecosystem approach.
Addressing Climate Change in the Asia and Pacific Region: Building Climate Resilience in the Agriculture Sector	Mark Rosegrant	This project is providing i) a critical synthesis of the evidence of the impact of agriculture on climate change, as well as the impacts climate change is projected to have on this sector; and ii) clear recommendations for development practitioners and policymakers on how to cope with the threats, as well as to understand the development opportunities, surrounding ongoing climate change.
Food and Water Security under Global Change	Claudia Ringler	This project aims to understand the impacts of global change on agriculture and water resources at the global, national, and river basin levels; to assess the effects of global change on water and food security in vulnerable rural areas of Africa, particularly rural Ethiopia and South Africa; and to identify adaptation measures that reduce the impacts of global change on these communities.
Strategies for Adapting to Climate Change in Rural Sub-Saharan Africa: Targeting the Most Vulnerable	Jerry Nelson	This project is examining the interaction of the biophysical impacts of global change and socioeconomic vulnerability to better predict the behavior of households and their ability to adapt to changes in selected countries in Sub-Saharan Africa. The results will be used to guide policymakers in promoting adaptation among the most vulnerable groups.

Incorporating farmers in global carbon markets	Jerry Nelson , Maximo Torero	This project is identifying opportunities for new “bankable” projects related to markets for high-value commodities and climate-change mitigation services, and policy and institutional innovations needed to facilitate the access of poor rural people in developing countries to these markets.
Greenhouse gas mitigation through alternative rice production systems in China	Tim Sulser	Prepared for the U.S. Environmental Protection Agency's "Global Mitigation of Non-CO2 Greenhouse Gases" (June 2006), IFPRI's International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) was augmented with data on the effectiveness, productivity impacts, and costs of various GHG mitigation options available in the agricultural sector.
Assessing the Costs of Climate Change and Adaptation	James Thurlow	These studies estimate the impact of climate change (including shifting variability) on economic growth and social welfare. Both empirical and calibrated crop models determine yield effects of global climate scenarios. Economic costs are then estimated using regionalized economywide models. Adaptation options are identified through national consultations, and these are also modeled to determine benefit-cost ratios for directing national investment plans.
Assessing the Costs of Climate Change worldwide	Jerry Nelson	This report provides preliminary estimates of the costs of agricultural adaptation to climate change. It focus on three types of investment—agricultural research, rural roads, and irrigation infrastructure. IFPRI's IMPACT partial equilibrium model of world agriculture is used, with 32 commodities and 281 regions around the world. Two indicators are used to assess the impact of climate change on agriculture—child malnutrition count and per capita calorie consumption. The costs of three sources of increased agricultural productivity—research, rural roads, and irrigation—are estimated that are needed to return the values of the two indicators from their 2050 values with climate change to their 2050 values without climate change.

Case Studies of Sustainable Land Management Approaches to Mitigate and Reduce Vulnerability to Climate Change in Sub-Saharan Africa	Ephraim Nkonya	This project is providing case studies as part of an overall effort to collect and present climate change and land management data in an integrated information system for Sub-Saharan Africa, with some specific sub-regional focuses. The case studies will generate recommendations of sustainable land management approaches and practices that aim to improve food security and economic prospects while reducing climate-related risks and greenhouse gas emissions.
Climate Change Adaptation for Smallholder Agriculture in Kenya	Claudia Ringler	This study aims to 1) assess the impacts of climate change and variability on the agriculture sector in Kenya; 2) identify and assess ongoing and alternative household-level and collective adaptation strategies for rural communities; 3) identify agricultural land management practices that enhance livelihood resilience and assess their potential synergies with greenhouse gas mitigation and increased productivity objectives; 4) identify perceptions of climate-related risks by agricultural producers and decision makers, and assess the feasibility of adaptation options; and 5) explore how individual and collective adaptation options and strategies can be supported through public action.
Climate Change Impact and Adaptation Strategies for Agriculture and Water	Tingju Zhu	This study analyzes climate change impacts on agricultural production and water supply and prioritizes adaptation measures through modeling of crop production, river basin hydrology, water resources systems management, and cost-benefit analysis.
Strategies for Low Carbon Growth Greenhouse Gas Mitigation in India through Land-Use Change	Jerry Nelson	This report assesses the scope for cost-effective greenhouse gas (GHG) emissions and sequestering carbon in India's agriculture through four sources of GHG release and mitigation—methane emissions from irrigated rice production, nitrous oxide emissions from the use of nitrogenous fertilizers, and the release of CO ₂ from the energy sources used to pump groundwater for irrigation and land use change to increase carbon sequestration.

The Impact of Climate Variability and Change on Economic Growth and Poverty	James Thurlow	This study focuses on the effects of existing climate variability on economic growth and poverty, but also estimates the additional economic costs associated with climate change. Hydrological-crop models are used to translate past and future climate scenarios into yield changes, while economywide modeling at the sub-national level translates these and other impacts into economic outcomes.
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