Building Urban Resilience

Assessing Urban and Peri-urban Agriculture in Kathmandu, Nepal

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Assessing Urban and Peri-urban Agriculture in Kathmandu, Nepal

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Preface

Food production in and around cities is an integral part of the urban fabric in much of the developing world. In these regions, urban and peri-urban agriculture (UPA) plays an important role in diversifying urban diets and providing environmental services in urban and peri-urban areas. As such, there is growing interest in UPA as a strategic component of urban resilience and climate change adaptation planning. However, advocacy for UPA in this capacity is outpacing the body of evidence regarding important stressors and drivers that act on UPA. Such knowledge is especially critical in the developing world where urban areas are experiencing rapid growth and transformation. In these regions, UPA is facing intensifying pressures from urban encroachment, waste disposal, pollution, and climate change that may undermine the sector's long-term viability.

The need to better understand these critical sustainability dimensions provided the impetus for city-level knowledge assessments of UPA, whose main findings are contained in nine underlying assessment reports including this one. The assessed cities were Dakar (Senegal), Tamale (Ghana), Ibadan (Nigeria), Dar es Salaam (Tanzania), Kampala (Uganda), Addis Ababa (Ethiopia), Dhaka (Bangladesh), Kathmandu (Nepal) and Chennai (India). All of the reports and the synthesis report can be found at *http://start.org/programs/upa*. The assessments were conducted in 2012, with initial stakeholder engagement beginning in 2011. The assessments were led by city-based teams, the composition of which varied, with some of the teams being comprised predominately of researchers and other teams comprising of a mix of researchers, city officials and urban NGO representatives.

The assessments seek to better understand the changing nature of UPA systems, and the critical interactions at the land-water-climate nexus that influence resilience of UPA in rapidly growing developing-country cities. The audience for these assessments includes national and city-level policymakers, sectoral experts and city planners, the research community, and non-governmental organizations (NGOs) that interface with urban farmers and other actors within the broader UPA sector.

The UPA assessments are part of a larger project on strengthening understanding of critical links between climate change and development planning in West Africa, East Africa and South Asia. The premise for the project is that progress towards undertaking effective action to address climate change risks in these regions is hindered by low levels of awareness of global climate change, lack of understanding of the findings of the Intergovernmental Panel on Climate Change (IPCC) and other sources of scientific information, lack of location and sector specific knowledge, and the need for strengthening capacities to undertake integrated assessments that support decision making. This multi-year project has been a collaborative effort between the World Meteorological Organization (WMO), the United Nations Environment Programme (UNEP), START, the University of Ghana, the University of Dar es Salaam, and the Bangladesh Centre for Advanced Studies (BCAS).

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Acronyms and abbreviations

ADB	Asian Development Bank
CBO	Community-based organization
DADOs	District agriculture development offices
DDC	Dairy Development Corporation
DHM	Department of Hydrology and Meteorology
DUDBC	Department of Urban Development and Building Construction
ESPA	Ecosystem Services for Poverty Alleviation
ESRC	Economic and Social Research Council
FAO	Food and Agriculture Organization of the United Nations
GCM	General circulation models
GDP	Gross domestic product
GLOF	Glacial lake outburst flood
GoN	Government of Nepal
HMG	His Majesty's Government of Nepal
ICIMOD	International Centre for Integrated Mountain Development
IFPRI	International Food Policy Research Institute
IPCC	The Intergovernmental Panel on Climate Change
IPM	Integrated pest management
ISET-Nepal	Institute for Social and Economic Transition-Nepal
KFVWM	Kalimati Fruit and Vegetable Wholesale Market
KUKL	Kathmandu Upattayka Khanepani Limited
KVTDC	Kathmandu Valley Town Development Committee
LPG	Liquefied petroleum gas
LSGA	Local Self-Governance Act
MLD	Million litres per day
MoAC	Ministry of Agriculture and Cooperative
MoEST	Ministry of Environment Science and Technology
MOFALD	Ministry of Federal Affairs and Local Development
MoPE	Ministry of Population and Environment
MT	Million tonnes
NARC	Nepal Agricultural Research Council
NCVST	Nepal Climate Vulnerability Study Team
NDRI	Nepal Development Research Institute
NWCF	Nepal Water Conservation Foundation
PRMD	Pesticide Registration and Management Division
RUAF	Rural Centre of Urban Agriculture and Food Security
SLD	Shared learning dialogue
UNEP	United Nations Environment Programme
UPA	Urban and peri-urban agriculture
VDCs	Village Development Committees
WFP	World Food Programme of the United Nations

Contents

Executive summary

This report presents the findings of a knowledge assessment on peri-urban agriculture in the Kathmandu Valley. This assessment locates peri-urban agriculture within larger, ongoing change occurring in the Kathmandu Valley's food system by identifying and describing the multi-stressor context related to intensifying urban pressures, environmental degradation, and increasing climate risks. The assessments objectives are to:

1. explore links between peri-urban agriculture and Kathmandu Valley's food system and possible future changes in these;
2. estimate the additional challenges that will be incurred in accessing food in the future given the transforming pressures of urbanization in the valley; and
3. examine components of Kathmandu Valley's food system that are vulnerable to disruption from extreme climate events and the implications of this given intensification of climate change risks.

Kathmandu's food and energy security are increasingly subjected to regional and global forces that bring significant risk as well as some measure of opportunity to the city. At the local scale, rapid urban expansion into agricultural areas of the Kathmandu Valley are undermining the viability of local food production and subjecting it to additional vulnerabilities. In the past, agriculture in and around Kathmandu constituted an important source of vegetables and cereals for the city. However, as is the case elsewhere in the country, farmers in peri-urban regions of the Kathmandu Valley are abandoning their traditional occupation due to low financial returns, lack of labour, climatic variability, environmental degradation caused by urbanization and, conversely, attractive job opportunities created by urbanization. These dynamics present a critical challenge to food production, particularly when considering the ever-increasing demand for food from this rapidly growing city.

Beyond concerns around localized food production, the food system of the valley is increasingly interlinked with regional and global food chains, which exposes residents to multiple sources