Building Urban Resilience

Assessing Urban and Peri-urban Agriculture in Dar es Salaam, Tanzania

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Assessing Urban and Peri-urban Agriculture in Dar es Salaam, Tanzania

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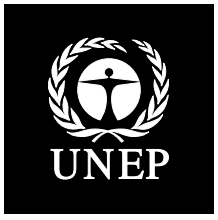

Preface

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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In addition to the numerous authors listed in each of the separate reports, we are grateful to the following people for providing useful insights and feedback during the early conception of the knowledge assessment, and helpful review comments on the various manuscripts: Rafael Tuts, Anna Skibevaag, Stephen Twomlow, Elizabeth Migongo-Bake, Trang Nguyen, Volodymyr Demkine, Jane Battersby, Marielle Dubbeling, Anna Kontorov, Richard Munang, Jesica Andrews, Fatoumata Keita-Ouane, Jacqueline McGlade, Keith Alverson, Stuart Crane, Martina Otto, Robert Yennah, Beverly McIntyre, and Tom Downing. We would also like to express our sincere appreciation for the generous support of colleagues at the University of Cape Town's *Climate* Systems Analysis Group who with the climate projections for six African cities.

Acronyms and abbreviations

CIDA	Canadian International Development Agency
CMIP5	Coupled Model Intercomparison Project Phase 5
DSM	Dar es Salaam City
DAWASA	Dar es Salaam Water and Sewage Authority
ENSO	El Niño–Southern Oscillation
FAO	Food and Agriculture Organization (of the United Nations)
FGD	Focus group discussion
GCCP	Global Climate Change Partnership (of the United Nations)
GTZ	Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation Agency)
IDRC	International Development Research Centre (Canada)
ILO	International Labour Organization (of the United Nations)
IPCC	Intergovernmental Panel on Climate Change
ITCZ	Inter-Tropical Convergence Zone
MLHHSD	Ministry of Lands, Housing and Human Settlements Development (Tanzania)
MKUKUTA	Mpango wa Kupunguza Umasikini Katika Taifa (*National Strategy for Economic Growth and Poverty Reduction, Tanzania*)
NGO	Non-government organization
NRCA	National Research Council of Academies
RCP	Representative Concentration Pathway
RUAF	Resource Centres on Urban Agriculture and Food Security
SCINAP	Sustainable Cities International Africa Program
SCP	Sustainable Cities Programme
SDP	Sustainable Dar es Salaam Project
START	global change SysTem for Analysis, Research, and Training
TMA	Tanzania Meteorological Agency
UA	Urban Agriculture
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office of Disaster Risk Reduction
UPA	Urban and Peri-urban Agriculture
URT	United Republic of Tanzania
WHO	World Health Organization of the United Nations
WMO	World Meteorological Organization

List of local terms

Daladalas	Minibuses and minivans
Lishe	A protein fortified *Amaranthus spp.*
Matembele	Sweet potato leaves sold as a green leafy vegetable
Masika	Long rains
Mtaa	Sub-ward
Vuli	Short rains

Contents

Executive summary

This report presents the findings of a knowledge assessment on urban and peri-urban agriculture (UPA) for the city of Dar es Salaam, Tanzania that was conducted in 2012. It examines the state of UPA in the city through the lens of intensifying urban pressures and increasing climate risks with the objective of identifying how these and other drivers potentially interact to affect the long-term sustainability of UPA, and what response options are needed to address existing and emerging challenges. The assessment is intended to:

1. describe the dominant characteristics of urban and peri-urban agriculture, and identify key knowledge gaps in these UPA systems;
2. explore the array of stressors that contribute to vulnerability of UPA systems to climatic and other environmental changes; and
3. identify critical areas for strengthening policies and institutional capacities that contribute to sustaining the UPA sector within the larger context of resilient cities and food systems.

Urban and peri-urban agriculture contributes to Dar es Salaam's food basket, constituting an important source of the city's green leafy vegetables, eggs, poultry and dairy products. The characteristics of the city's UPA sector are quite variable, reflecting an engagement of low-, middle- and high-income groups. In recent years, high-income groups have become increasingly involved in UPA through the production of high-value crops and livestock products in urban and peri-urban areas, thus reflecting the fact that UPA is neither merely a survival option for the urban poor nor a rural remnant within the urban space.

The UPA sector faces many challenges stemming from increasing population pressure, environmental degradation of the land and water resource base, and urban encroachment that leads to loss of agricultural land. Access to suitable land and water for UPA is a particular concern for the sector's long-term sustainability. Farmers in both urban and peri-urban areas are experiencing significant