Environmental Change and Agricultural Sustainability in the Mekong Delta

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Environmental Change and Agricultural Sustainability in the Mekong Delta





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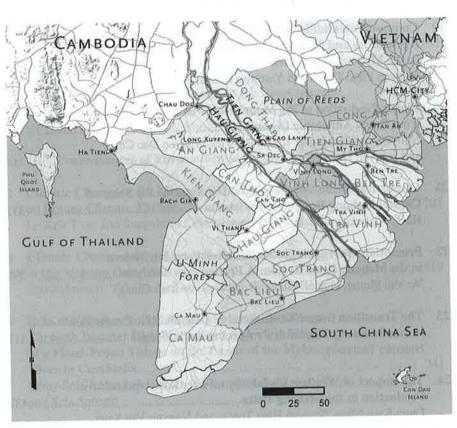
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Mekong Delta of Vietnam: Provinces, cities, and major branches of the Mekong River (created by David Biggs)

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Chapter 1 Introduction

Mart A. Stewart and Peter A. Coclanis

The Mekong Delta of Vietnam is one of the most productive agricultural areas in the world. The Mekong River fans out over an area of about 40,000 km², and over the course of many millennia has produced a region of fertile alluvial soils and constant flows of energy. Today, about a fourth of the Delta is under rice cultivation, making this area one of the premier rice granaries in the world. The Delta has always proven a difficult environment to manipulate, however, and because of population pressures, increasing acidification of soils, and changes in the Mekong's flow, environmental problems have intensified. The confluence of agriculture and economy in the region with larger flows of commodities and capital over time has also had an impact on the region: For example, its reemergence in recent decades as a major rice-exporting area has linked it inextricably to global markets and their vicissitudes. And most recently, the potential for sea level increases because of global warming has added a new threat, one that makes the Delta a place where local, regional, and global environmental changes are dramatically converging.

Because most of the region is on average only a few meters above sea level and because any increase of sea level will change the complex relationship between tides and down-river water flow, the Mekong Delta is one of the areas in the world which is most vulnerable to the effects of climate change. A meter increase in sea level could displace millions of people and wreak havoc on the productive capacity of agricultural lands in the Delta - and would at the same time, according to a recent Oxfam report, severely set back Vietnam's overall development goals. Moreover, larger environmental justice issues are at stake as well: The Mekong Delta will likely bear a severe burden from climate change despite the fact that as

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recently as 2000 Vietnam as a whole produced only 0.35% of the world's greenhouse gasses, one of the lowest contributions in the world.

Climate change presents a particular, and a particularly recent, challenge to agriculture and livelihoods in the Delta. Other challenges continue to shape the Delta environment and in turn the capacity for agricultural sustainability in the region. Though Delta residents have always known how to live with floods, changes in flooding patterns pose a particular challenge, especially when they transform patterns of water flow that are essential for rice agriculture. The modernization of Delta agriculture has increased productivity but has created a growing problem with pesticide pollution. The pests that thrive in monoculture continue to plague - in spite of massive and increasingly sophisticated control programs - rice agriculture in the region. Long-term problems with soil fertility, saline intrusions, and soil acidification shape and modify and sometimes challenge substantially different strategies for wresting a living out of the Delta soils. In some locales adjacent to major branches of the Mekong, changes in water dynamics and in shorelines because of massive excavations of sand for sale to developers in places such as Singapore have also caused problems. Moreover, wetlands and forests that are important buffers to agricultural lands have shrunk as rice cultivation has expanded, and biodiversity in general has suffered the same fate in the Delta as it has everywhere that monocultures have expanded. Perhaps the biggest challenge to Delta agriculture comes from far upstream, and is as much a political and technological change as an environmental one: Dams constructed or soon to be constructed on the upper reaches of the Mekong, mostly by the Chinese, have already begun to make it a different river altogether - one with less water, reduced fisheries, and fewer seasonal rhythms and enriching sediments from upstream. The new highly managed Mekong will impoverish environments on the lower Mekong, and make the Delta and Delta farmers more vulnerable to water shortages and droughts as well.

Environmental challenges and changes are amplified by social, economic, and political ones. Livelihoods in the Delta are currently shaped as much by the wrenching changes of modernization and urbanization as by increasingly erratic flows of water and nutrients from upstream and changing tidal flows from down. Many Delta households have a member or more who contribute nonfarm income to the household by working in the new urban industrial zones of Ho Chi Minh City or Can Tho. The flow of resources, commodities, capital, and labor between the Delta and the burgeoning metropolis of Ho Chi Minh City has grown to such intensity and has acquired such complexity that as one of the chapters in this volume argues, it no longer makes sense to think about parts of the Delta as "rural" at all, but as peri-urban. If links to global commodity markets drive even the smallest rice farmers to produce one crop and not another, the powerful market middlemen who represent their personal contacts with these markets compel them to produce certain varieties of rice and do it in certain ways. Rapidly changing institutional arrangements have also had an impact on Delta agriculture and those who practice it: the decline of social welfare networks in the last 20 years, the changing relationship between private and public sectors and the consequent modulation of government authority, the development of agricultural research programs and

Introduction 3

outreach programs for farmers, and the growing influence of donor economies and of nongovernmental organizations in agricultural research and reform programs have all shaped Delta agriculture – and efforts to develop new strategies of adaptation to environmental change.

This collection represents altogether a mosaic of investigations into environmental change and agriculture in the Mekong Delta. While many of the authors attempt interpretive contributions, mainly in the interest of informing or connecting to emerging agricultural policy discussions, most of them report research about discrete topics that nonetheless are deeply related to the larger problem of mitigation of and adaptation to environmental change. Much of the interpretive writing about the Delta and about agriculture in dynamic environments in the developing world in general attempts to develop new insights into ideas about development trajectories, the roles of different actors within national or regional contexts, the history and larger context of human and environmental relationships in the site of study, and are more focused on engaging with other scholars and scientists to develop analytical and interpretive frameworks than in solving real-world problems. They are, in a word, academic. To be sure, most of the chapters in this collection depend on analytical models that come out of traditional academic disciplines, but they focus on strategies for understanding environmental change in the Delta that might yield real policy and/or real solutions to the challenges that millions in the Delta currently face. Rather than swooping down over the Mekong Delta terrain in an interpretive flyover, they wade around in it, and do so in a way that attempts to tell us what to do about problems at the same time that they describe them. Several of the chapters in this volume do provide us with valuable discussions of the larger historical context of environmental change in the Mekong Delta, or link current changes comparatively with similar developments elsewhere in an effort to illuminate those changes, or talk about cultural values or the political culture of NGOs and other important actors. But most of the chapters focus on discrete research questions that are relevant to understanding environmental and related changes in the Delta and what might be done about them. Many of the scholars also live and work in the area as well, and understand just what the stakes are for residents of the place – that their work is rooted in the Mekong Delta in more ways than one makes their research contributions especially valuable. Much of the work on environmental and related problems in the developing world also seeks to make an ideological argument beyond the problem itself, to persuade as well as explain. The value of problem-based research is that it focuses on the problem; the value of a collection of problem-based research papers is that collectively something can be made of them that addresses the problem, and not simply the discursive world of those who are thinking about it. There is a profound need, given the seriousness of the problems at hand in the Delta and the noisy distractions that prevent us from seeing them clearly, for such "shovel-ready" scholarship, written by people with boots on the ground.