Tomoya Akimichi, ed. *An Illustrated Eco-history of the Mekong River Basin*. Bangkok: White Lotus, 2009, 211p.

Reading this book, I have, at least, the following expectations: which ecological aspects of the Mekong river basin are examined, what is the present situation of its ecology, and how and why have those aspects managed to change or remain unchanged in the decades following the Second World War?

To answer these expectations, the authors deal firstly with the preconditions for the survival of the people mainly in the Mekong river basin, that is, in order to survive, the people have to interact with nature and their man-made or man-influenced environments, including adaptation to their environments. By interaction, what is meant is that the environments influence the people and vice versa with people's survival contingent on their use or management of natural resources available in the environments. Those natural resources primarily include plants, animals, fungi, and water for food, clothing, shelters and communications.

The authors do examine the plants and their products. They pay special attention to the forests, the most important natural resources, including primary monsoon forests, secondary forests, rice-producing forests, water conservation forests, bamboo groves as well as teak and rubber plantations. In the Monsoon Forests of Part 1, Kono Yasuyuki's evaluation of the monsoon forests is that they provide the flora and fauna upon which the people's livelihood depends. He describes the various types of people's interactions with the forests, for example, how they protect them in order to collect building materials and fuel (p. 3). The four kinds of mutualism in the tropical monsoon forests are worth reading for the description of the ecology of the Mekong river basin.

However, what is of most interest is people's interaction with forests through practices such as swidden farming. Also in the Monsoon Forests of Part 1, Kono argues that single cropping is conducted through swidden, and secondary forests are regenerated in the fallow period, providing forest products, including food, medicines, and materials for clothing and commodities. He claims that swidden farming in the forests is one of the most outstanding and successful complimentary interactions established between humans and forests (p. 2), and the alleged role of swidden agriculture in deforestation is limited (p. 4). And, as Yamada Isamu puts it in the introduction of the book, if the rotation interval is well managed, swidden is the most sustainable farming method in the regions (p. xxvii). In the Secondary Forests of Part 1, Takeda Shinya and his Lao co-author Anoulom Vilayphone closely look at fallow or secondary forests in swidden, believing most of the remaining forests in the Mekong river basin to be secondary forests consisting primarily of bamboo, where the regenerative process of secondary forests is repeated. These kind of forests provides many forest products, namely, grass plants and shrubs, such as cardamom, rattan, and alpinia. They also note the changes in swidden in Laos, where the Lao government is promoting the intensification of land use through the Land Allocation Program for stabilizing swidden, thus decreasing land available for the practice. The Khamu people grow tea and eaglewood in the secondary forests (guided by Takeda I did observe the eaglewood plantation in Luang Prabang in our fieldwork trip for Prof. Kobayashi Shigeo's tropical forest rehabilitation project in 2008). This practice may be a means of employing the knowledge of mountain people. In the Land of Part 1, Shaoting Yin's description of the history of swidden agriculture in China's Yunnan is a full and perfect account of how swidden has decreased due to five factors: swidden perceived as an old method, political laws limiting or prohibiting it, the national government's social reform, population growth, and the commercial market economy that drives some swiddeners to abandon the practice and start growing fruit, tea, and rubber for the markets. Books of the same interest of swidden can be consulted, such as *Agricultural Involution* [Geertz 1963: 15–28] and *Swidden Cultivation in Asia* [Sachchidananda *et al*. 1983]. In the end, a flowchart demonstrates the eco-history of swidden agriculture. This method of ecology, changes and causes, as well as possible solutions, is followed in describing the eco-history of other forests, plants, animals, land, water, crafts, diet and health as well as regional eco-history. Of personal interest is Kosaka Yasuyuki's introduction of rice-producing forests in the Forests of Part 1, which is yet another case of people's interaction with forests typical of the Mekong river basin, and brings to mind the book *Farmers in the Forest* [Kunstadter *et al*. 1978].

By including accounts of the interaction between the Mekong river peoples and their

environments, this book sets itself apart from other writings on general ecology which are concerned simply with the interactions between organisms and their physical, chemical and biological environments. For example, some of the authors pay special attention to people's food and health, which put people first, a very unique addition to the ecological description of a region in a historical context. This may be thought of as a new direction in writing ecology or eco-history towards human ecology. The book provides a comparison with the environmental history developed by Roderick Nash [Nash 1970: 349–361; 1972], Donald Worster [1984; 1988; 1990], William Cronon [1983; 1990; 1992; 1993], and Richard White [1985].

For another example, in the foreword of Part 2, Moji Kazuhiko *et al.* point out that human ecology in the Mekong river basin is undergoing four transitions: a demographic transition that has brought about a decrease in the mortality rate with many people living to old age (the average life expectancy extended from 37.82 years in 1950 to 58.23 years in 2005); a childbearing female population increase and birth rate decline; a health transition that has given rise to the decline of mortality rate from acute infectious disease and increase in lifestyle-related diseases such as diabetes and cancer as well as mental illness; and a nutritional transition that has brought about "change from a small lean physique formed by hard physical labour and inadequate nutrition to a large and sometimes obese physique associated with the improvement of dietary and nutritional status, an urban lifestyle, and the promotion of growth during childhood" (p. 87). The authors are right in saying that the original diversity of the diet of glutinous rice, raw fish and crabs, fermented foods, seared meat, distilled spirits and edibles such as bamboo shoots and mushrooms are experiencing "equalization and complication," (p. 87) because of the introduction of various foodstuffs. There are less species of glutinous rice, less food from forests and rivers, and more food purchased. Nutritional environmental changes refer to more rice, the loss of animals and plants, and imported food including snacks, instant noodles, and junk food that are rich in fat and salt and contain less micronutrients such as vitamins and minerals. The important reasons for the changes in the food environment are less arable land caused by deforestation, the mechanization of agriculture, the introduction of irrigation, polarization, and market economy. To my knowledge, the most immediate reason for the ecological disorders in the human body is an unbalanced diet, that is, an imbalance in the trinity of carbohydrate, fat and protein, the most basic intake for the human body. The authors offer some typical facts: more glutinous rice, more diabetes, more obesity. They also point out cases of depression among the elderly and the effect of human migration on the ecology. Interestingly, similar food diseases are can also be found here in Yunnan, China. For instance, *Laap* (minced beef, water buffalo, and pork) is similar to the raw pork popular among the Han and Dai natives in Xishuangbanna, Dehong, Baoshan and Nujiang, which is responsible for incidences of trichinosis (or trichinellosis).

As Akimichi Tomoya puts it in the foreword of Part 3, the last part of the book, aims "to look into the history of resource management and governance," and "proposes a comprehensive exploration of the eco-history of the monsoonal Asia" (p. 129). This can also be read as a way of writing an eco-history, that is, "to move from individual instances to general theories using a proxy method in measuring changes in resource management" (p. 129). Kono states that eco-history "describes the transforming interaction between people's livelihoods and their environment" (p. 171). I believe the evolution of cross-

border management of resources is one part of the regional eco-history in the Mekong river basin. The authors provide a brilliant picture of how the resource management has changed and why. These cases include Nagatani Chiyoko's introduction to rubber (pp. 129–131), Masuda Atsushi's chapter on the spread of tea (pp. 135–138), Abe Kenichi on the collection of natural resin and forest conservation (pp. 139–141), Akimichi on fish conservation (pp. 141–143), Takeda on opium poppy (pp. 143–145), Sato Yo-Ichiro on corn (pp. 154–155) and Thongvanh Thepkaysone on water buffalo and rubber plantations (pp. 168–170), etc.

I think the most comprehensive fact of the book, as Christian Daniels and Nomoto Takashi state in their chapter on the traditional management of natural resources and economic development in Part 3, is that "the understanding and cooperation of each individual is essential for maintaining a balance between human activity and ecological systems," (p. 155) which I do hope refers to resource management. They continue to believe that "human activity invariably causes change in the ecological environment; however, we still have not arrived at an optimum balance between the two... The eternal problem is how to make humans realize that their well-being is contingent upon nature's bounty" (p. 158). In the introduction of the present book, Abe describes the changing world of the Mekong river basin and identifies the reasons for these changes: the Second Indochina War and market economy. To cope with the ecological problems, Kono offers solutions to the problem: (1) there is a need to achieve "co-existence with the ecosystem using local people's wisdom and technologies"; and (2) the "indigenous knowledge and technology empirically developed by people in mountainous regions provide another important message regarding resource management," (p. 174) e. g. the swidden system, the multiple land use achieved by the cyclic approach to resource management.

The book, a page-turner, can be used as an encyclopedia, a helping hand with texts, maps, figures, tables and plates about the Mekong river basin's ecological history. However, some corrections are necessary. The title of the book is about the ecology of the Mekong River basin, yet the parts of the Mekong river basin that are located in Qinghai and Tibet are not included in the book, while the basins of Honghe (Red) river, Pearl river, Nujiang (Salween) river and Yangtze river are presented. If the authors do value these facts, the book could be better entitled *An Eco-history of Tropical Monsoonal Asia*.

Akimichi writes in the book that the Mekong river originates from the Tibetan Plateau (p. 35), and Anoulom Vilayphone and Takeda also affirm this (p. 5). However, the river actually originates from Qinghai-Tibet Plateau. Akimichi thinks that the whole length of the Mekong river is 6,500 km (p. 35), but usually it is thought to be 4,880 km; Doi Inthanon in Chiang Mai in northern part of Thailand should not be considered as part of the Mekong river basin in the context of this book. Kashinaga states that Dien Bien is one of Vietnam's provinces (p. 83). It indeed is one of the districts of Lai Chou province in northwest Vietnam, not part of the Mekong river basin, and its full name is Dien Bien Phu.

Two recommendations can be made here: the land referred to in Part 1 of the book (p. 16) should be qualified as farming or agricultural land, for land is too broad a term covering all natural resources, such as forests, water and animals, and the water mentioned on p. 35 should be "the use of water." Yet, some unanswered questions remain: what has become of the changes in the habitats of elephants, bears and monkeys and other wild animals, the ecological effect of eucalyptus (together with rubber trees), the

present situation of wild rice, *Taxus Chinensis* (Pilger) Rehd, exotic plants (tobacco, potato, etc) and animals (such as the snails that eat rice) in Yunnan, China? Furthermore, what has become of the ecological changes in the wetlands of Tonle Sap in Cambodia and the Mekong delta in south Vietnam, for instance, the mangroves at the mouth of the Mekong river to South China Sea; as well as the ecological effects of dams on the Mekong river? An in-depth quantitative analysis is still required to answer these questions.

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