

Introduction

Anthropological Dimension of Global Change

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This is the first publication project undertaken by the Commission on Anthropological Dimension of Global Change of the International Union of Anthropological and Ethnological Sciences (IUAES). The ideas presented here were originally discussed by the Commission members during the 1996 Inter-Congress of the IUAES and the International Geography Union (IGU) in Linköping, Sweden. We would like to acknowledge the generous support for the Commission's activities by the IUAES, and the International Council of Social Sciences/UNESCO. Let me first explain about this Commission and its activities.

During the 13th International Congress of Anthropological and Ethnological Sciences in Mexico City in 1993, the Commission on Cultural Dimensions of Global Change was established and chaired by Dr. Lourdos Arizpe, the then-president of IUAES. However, the Commission became inactive until the Inter-Congress in Florence, Italy in 1995, when the IUAES executive committee revived it under the current chairperson Tomoko Hamada. During the first business meeting of the IUAES Commission, its name was formally changed to "the IUAES Commission on Anthropological Dimensions of Global Change." Dr. Emilio Moran was elected to serve as the Commission's executive secretary, and Dr. Eduardo Brondizio was elected to become a member-at-large. This Commission is among the twenty commissions currently operating under the IUAES.

The Commission's major task is to promote international collaborative research, scholarly

exchanges and public education on the topic. It encourages social scientists to discuss key ideas and perspectives among themselves and with their "sections" of the global change research community. It will focus on the networking strategies to broaden the audience base. Of particular significance is to inform non-anthropologists and graduate students about our debate on global change. We are concerned about the problem of linking levels of analyses in social and natural science research. Our first task is to assess the state of art in anthropological research in this field. We will need to identify various levels of anthropological analysis on global change, and will examine research methodology. Out of this collective endeavor, we will be able to summarize theoretical perspectives and accumulated knowledge in our discipline, and to set our future research agenda. We will then disseminate our findings widely through the proposed outreach and publication projects. In this collection of articles, each author is asked to answer one of the following three categories of questions raised during the 1996 Commission meeting.:

1. THEORY QUESTIONS

We would like to clarify major theoretical contributions that anthropology has made in the field. We also collectively attempt to define our research field and the boundary of our research. During the series of cross-cultural conversations, colleagues from around the world have realized that key terms and concepts such as "culture" and "development" are used quite differently by different professionals, and that different disciplines and sub-disciplines in social and natural sciences across nations use key concepts quite differently. Thus our first task as the Commission members is to clarify major scientific concepts within and outside the discipline. We

conceptualize key terms such as "culture," "resource flow," "technology," "global," "local," "ethnicity," "indigenous knowledge," "sustainable development," "health," "nature," and "society," so that our scientific dialogues with non-anthropologists become more meaningful.

2. METHODOLOGY

We attempt to identify how anthropological methodology compliment and/or differ from those of other social sciences. We conduct field research. Some of methodological questions discussed among the Commission members are: Are we different from other social scientists, who also conduct field research? What are our levels of analysis? What are the strengths and weaknesses of our methodology?

We hope to create innovative approaches to investigate ecological issues. Some of us have conducted research on changing values, norms and meanings of human communities that are responding to the powerful forces of globalization. Others have done research on conflict resolution, human settlement, institutional arrangements, livelihood and technological transfer that affect ecological settings of our universe.

3. CASE STUDIES

Anthropology is an empirical science. We present several case studies to illustrate how anthropological perspectives are applied to environmental problems in different parts of the world. Anthropologists collectively recognize that human life and livelihood are linked to the biological and physical world in a complex way, and that such linkages encompass values, symbols, knowledge systems, institutional arrangements and technology as well as allocation and flows of resources, demography, and political alliance. We recognize that local and global production and reproduction of knowledge systems and cognitive processes often involve modeling of reality and creation of meanings. There are many anthropological "realities." We agree that the indigenous knowledge, and especially the underlying cosmological values cannot be ignored in planning and implementing sustainable development. Indigenous knowledge systems examined in this volume include those of Ameri-

can industrial workers, European scientists, Japanese corporate elites, the Shipibo-Conibo people in Brazil, East-Indian eco-feminists, the Bantu-speaking people of the northern province of South Africa, and the Tanzanian pastoralists. We pose universal questions that are raised with particular insistence by the peculiarities of certain cases. The critical examination of these cases located in different points of time and geographical sites contributes to progress towards a theory of human ecology that can encompass and transcend all epistemological regionalism. We discuss important theoretical perspectives that have emerged from empirical studies of diverse human groups. For example, the reader will be introduced to the theoretical perspectives of cultural ecology, material flow analysis, ethnicity and health, indigenous value system analysis, eco-feminism, and corporate environmentalism. The levels of analyses also range from a micro analysis of a specific human group that faces global environmental changes to a macro analysis of international trade, production and consumption.

First, an industrial anthropologist, Marietta Baba of the United States applies the theory and methods originated in human ecology to the small-scale work group. Baba demonstrates variability in human work group responses to new technology, and incorporates the concept of culture as an adaptive system, that includes locally distinctive meanings, values, norms, behaviors and material artifacts.

Stefan Anderberg of Sweden presents the flow perspective in his analysis of the development of society-environment interactions. The material flows in the world have grown rapidly, and they have become more complex. Most materials flow through several major stages, from extraction of raw materials to use and disposal. Environmental scientists must understand linkages between different areas of knowledge and sectors that connect to these in space and time, as well as socio-economic dynamics and power relations that interact with flows. Using the Rhine Basin as an example, Anderberg presents the "flow perspective" and "industrial metabolism" studies that show possibilities of integrating analyses of nature and society, and

of understanding juxtapositions between different scales and management structures.

Tomoko Hamada moves her anthropological lens to examine Japanese corporate power elites, and their current interest in the emerging set of International standard ISO 14000 for environmental quality management. Hamada argues that environmentally sound management in line with total quality control methods continues to aim at manufacturing processes based on the product-specific life-cycle analysis. However, such approach fails to capture dynamic linkages between manufacturing, trades, consumption and waste disposal that cut across different industrial and non-industrial products and sectors globally. Hamada argues that new corporate environmentalism must include more holistic, lateral, interconnected configurations of different constituencies through international economic activities and political relations.

Maj-Lis Follér offers a dynamic human-ecological view by focusing of the health of populations. In analyzing intensified local-global connections, she examines a "human-being/environment/society" triangle and the relations between them. She notes that one way to analyze such relations is to conduct empirical studies in various social and cultural settings in different parts of the world, and to examine how human beings, as biological creatures, adapt to their physical environments through their cultures, including their behaviors and lifestyles. Using a case of an ethno-linguistic group the Shipibo-Conibo in Brazil, Follér shows how this ethnic group is being caught up in the process of unequal globalization. Strategies of local persistence are expressed in the articulation of ethnic differentiation which is shaping present-day world politics or "creolization". And yet serious inequality among different human groups tends to increase and a significant breakdown of the social support system, cultural loss, and deterioration of health may result. Health is a phenomenon that arises from individual well-being, from the well-being of society and the environment. She argues that health provides an integrated measure of how well, or how badly, we are doing as a people and a species. Follér notes that this wisdom about the health of *Homo sapiens*, although gaining a renewed interests in

Western societies, has never been lost among indigenous people.

Saraswati Raju in India presents a critical review of ecofeminism in relation to recent debates on environment, sustainability and development. She argues that no ecological understanding of human impact on environment can afford to ignore the crucial role women play in environmental protection in wide-ranging geographical circumstances. However, she cautions against the view that the women's interests and those of environment and conservation are necessarily synonymous. Raju's critical reading of ecofeminist discourse is followed by an alternative explanation, that the culturally constructed sexual division of labor put women into a position where meaning attributed to nature is historically and culturally specified through gender-related symbols. At the core of the cultural representation of women-nature lies their struggle for contested domain for income-generation, decision-making and power. Ecofeminist assumptions of nature/women-culture/man must be placed within the historical, economic, and contextual realities of power, resource allocation, social organization, and environmental struggles.

The value of indigenous knowledge is emphasized by F.C. De Beer who writes from the Republic of South Africa. He argues that the perceptions of nature and the cultural values of people at the grassroots level must be incorporated in the macro-level planning for environmental management. De Beer illustrates how the deterioration of the agricultural land, and grazing and forest areas stem not from the lack of public projects, but because of the epistemological problems and premises of environmental projects that did not effectively incorporate local philosophical views about nature. The root of the problem was change agents' ignorance of the "meaning-given context" of the local people who give meanings to past experiences, create metaphors and believes and perceptions and world views. The local people's meaning-giving context is the only framework within which they can relate to developers. Unless the development initiative has positive meaning within their local context, people will not be steered, influenced. Establishing an effective linkage between the outsider's perspective for environmental management

and the local meaning-context and the underlying cosmological values is the key for successful implementation.

An important case study comes from A. J. Mwilawa, Kidunca R.S. and Kusekwa M.L., who analyze agrosilvopastoral systems in the semi-arid areas of Tanzania. African pastoralists have acquired extensive knowledge of the nutritional values of trees, shrubs and woody species, that are essential to their livelihood and management of livestock. They argue for the need for integrating the local knowledge system of pastoralists and agro-pastoralists, and policies for resource utilization and silvopastoral system. Their paper points to the research needs for combining and re-ordering different knowledge

systems on natural resources in order to develop strategies for sustainable uses of natural resources.

This volume collectively presents important anthropological perspectives that stress diversity of human knowledge systems and their inter-relationships. The articles also exemplify current research on human aspects of global environmental change research. The Commission members are ready to engage in active intellectual discourse in order to improve our understanding of global dynamics between human societies, cultural representations, resource utilization, and environmental change. We hope that this volume will stimulate fruitful discussion for environmental research and policy initiatives.