Chapter 9
Indigenous Knowledge Management and Humanitarian Supply Chain for Disaster Mitigation and Sustainable Development in the Eco Communities of India:
Holistic Systems Modeling Approach

Sanjay Bhushan
Department of Management, Faculty of Social Sciences, Dayalbagh Educational Institute, India

Saurabh Mani
Department of Applied Economics, Faculty of Commerce, Dayalbagh Educational Institute, India

ABSTRACT

The shift in focus from hazards to underlying vulnerabilities has provided disaster managers with a richer understanding of the factors that erode the coping capacities of communities and social systems. This chapter presents ideas such as a globally shared digital platform developed as a functional web-portal branded—A.A.D.I.GYAN—augmenting action for disaster management through indigenous knowledge-gyan. Humanitarian supply chain (HSC), on the other hand, plays a central role to any developmental program meant for sustainable capacity building in the eco-communities. The chapter also highlights that HSC and community-based IK resource management can collectively promote more resilient communities promoting social, economic, and environmental equity and ethical imperatives. Towards this end, system dynamics modeling and simulation can be invoked to capture and simulate the causal dynamics of the inter linkages prevailing within the system and suggest some critical intervention strategies for policymakers.

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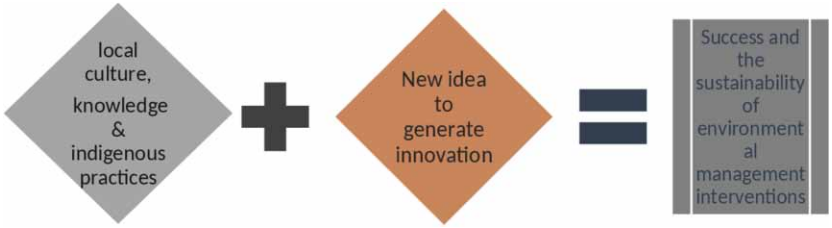
INTRODUCTION

As early as in 1994, the United Nations World Conference on Natural Disaster Reduction in Yokohama called for paying more attention than before to traditional knowledge and community based actions. The Kobe earthquake also led to a switch from a technocratic view of natural hazards to a focus on vulnerability. It has also been acknowledged that by appreciating and making use of peoples' knowledge the global community can also promote the principle of equity of knowledge (Pandey, 1998) which in turn being clubbed with formal sciences may result in empowerment, self-determination, security and opportunity for local people. Human ecological perspective thus proves vital in creating the fundamental framework for natural resource management on sustainable basis.

According to the United Nations Environmental Program (UNEP), traditional communities rely on indigenous knowledge to conserve the environment and deal with disasters. These communities, particularly those in hazard-prone areas, have generated a vast body of indigenous knowledge on disaster prevention and mitigation. This knowledge is the sum of facts that are known or learned from experience or acquired through observation and study and handed down from generation to generation (www.unep.org). Further, it is said that the success and the sustainability of environmental management interventions at the community level depend, among a number of factors, on the availability of relevant local culture, knowledge and indigenous practices that can combine with new ideas to generate innovation. Thus, the importance of indigenous knowledge contributes not only to the success of intervention, but more importantly to its sustainability in the longer term. In a particular reference of disaster management, considering the participation and integration of these communities in all disaster-related processes as a necessary means, the importance of indigenous knowledge acquisition can well be appreciated. Even before the advent of high technology based early warning systems, or standard operating procedures (SOPs) for response, numerous local communities worldwide have prepared, operated, acted, and responded to natural disasters using indigenous methods passed on from one generation to the next.

Figure 1. Indigenous Knowledge and Sustainability



The United Nations already considered indigenous knowledge within Priority-3 of the Hyogo Framework for Action (2005-15), which extensively focused on education and knowledge (WCDR, Hyogo 2005). One of the key activities identified under this priority action focuses on the importance of information management and exchange, and highlights the use of "relevant traditional and indigenous knowledge and cultural heritage" to be shared with and adapted to different target audiences. In order to fulfill this objective, we all need to understand, acknowledge and respect indigenous knowledge as a valuable source of information and as a key contributor to reducing risk in many parts of the world.