INDIGENOUS KNOWLEDGE IN PLANT PROTECTION PRACTICES: A STUDY OF PEASANTS AND SCIENTISTS IN ORISSA

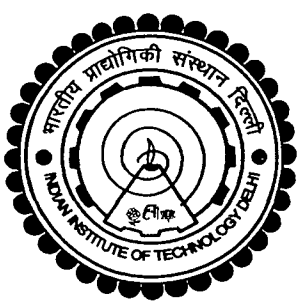
By
SUNITA DHAL

Department of Humanities and Social Sciences

Submitted
In fulfillment of the requirements of the
degree of

DOCTOR OF PHILOSOPHY

To the



INDIAN INSTITUTE OF TECHNOLOGY
DELHI
SEPTEMBER 2006

CERTIFICATE

This is to certify that the thesis entitled "Indigenous Knowledge in Plant Protection Practices: A Study of Peasants and Scientists in Orissa" being submitted by Sunita Dhal to the Indian Institute of Technology, Delhi, for the award of the degree of Doctor of Philosophy, is a record of bona fide research carried out by her.

Sunita Dhal has worked under our guidance and supervision and has fulfilled the requirements for the submission of this thesis, which, to our knowledge and satisfaction has reached the requisite standard.

The results contained in this thesis have not been submitted, in part or in full, to any other University or Institute for the award of any degree or diploma.

(AMULYA KHURANA)

Associate Professor
Department of Humanities
& Social Sciences
Indian Institute of Technology, Delhi

(T.K.OOMMEN)

Professor (Retd.)
CSSS
Jawaharlal Nehru University,
New Delhi

Date:
Place:

ACKNOWLEDGEMENTS

I sincerely wish to acknowledge the support of all those, without whose help and cooperation, this study could not have been completed.

At the very outset, I would like to express my heartfelt gratitude to Dr. Amulya Khurana and Prof. T.K.Oommen, under whose able guidance and supervision, this work has seen the light of the day. I am indeed grateful to both of my supervisors, for their continuous support, encouragement, and expert advice, throughout the study. They have been extremely kind and patient in seeing the study through. I owe my deepest respect to both of them and shall always be indebted to them.

I am grateful to all the faculty members of the department, especially Prof. V. Upadhyaya (Chairman, DRC), Dr. Ravinder Kaur, Dr. Sanil V. and Dr. P. Vigneswara, for giving me their valuable suggestions at various stages of this study.
I also wish to express my sincere thanks to all the respondents and informants for sparing their time, for helping me in data collection. The peasants revealed through the bits and pieces of information on various aspects of their life whereas the scientists gave detailed information on their involvement in agricultural research while sharing their live experiences about the research on indigenous knowledge of plant protection. I remain grateful to each of them.

I am grateful to Mr. Banamali Dash, Ms. Laxmi Dash, Ms. Premosi Nayak, Mr. Bipra Charana Sahoo and the entire team of NIPDIT (a local NGO), for the help I have received in identifying the localities and in reaching out to the peasants, during the fieldwork. I am thankful to Ms. Sugatha Panigrahi and Shri. Antaryami Sahoo who helped me in conducting the interviews, while translating the Oriya into Kui language. I am also thankful to Mr. L.N.Patnaik and his family, for providing me accommodation in Kandhamal.

Academy of Tribal Dialects and Culture, Tribal and Harijan Research-cum-Training Institute, Behavioural Science Centre, Ahmedabad, and NGOs such as NISWAS, CARE, and PRADATA provided me information and insights into the life of peasants in Kandhamal. I am indebted to each of these institutions.

My gratitude also goes to Indian Institute of Technology, Delhi, for all the administrative and infrastructural support that I have received all through this study. I am thankful to the staff of JNU Library, Nehru Memorial Library, IARI, NISTADS, NISCAIR, Ratan Tata Library, Institute of Economic Growth, Centre for Study of Developing Societies, Development Alternatives, Navdanya and Centre for Science and Environment, for letting me avail the library facilities. I thank Prof. Anil K. Gupta to allow me to access the documentation centre of SRISTI (an NGO), Indian Institute of Management, Ahmedabad. I am grateful to him for introducing me to the immense collection on indigenous knowledge literature. I also wish to thank Ms. Bhumi and Ms. Nisha for their support in accessing the documents at SRISTI library.

I take this opportunity to thank Prof. Parasar Sahoo for helping me during the initial stage of scale construction. I thank my father Dr. N.K. Dhal, for explaining me the scientific terminologies concerning my topic and helping me to reach the scientists. I am grateful to Dr. Paul D' Souza, Rajan Kumar and Dr. Pravakar Sahoo, in helping me to obtain certain books from Ahmedabad and USA.

Drafts of this study have been enriched by corrections and comments from my husband Jeevan Prakash Mohanty. I am thankful to Ms. Anindita Pande for editing my thesis at a crucial stage. I am thankful to Dr. Paul D' Souza, Subrata, Tila Kumar, Prachi, Bijaya, Rajeshree, Uday, Rafi, Mira, for continuously supporting my endeavours while writing the thesis.

Finally, my "Family Members and Friends", who were always there with their emotional support and wishes, to each one of them I say "Thank You".

Sunita Dhal

Sunita Dhal

Abstract

This is a sociological study on indigenous knowledge in agriculture. The study locates the knowledge in the broader understanding of science and society, and envisages an integrated approach in plant protection. The integrative approach is conceived here, with the idea of reconciliation of both indigenous and new knowledge in the developmental context. Development is inclusive of the principle, i.e., selective acceptance of indigenous knowledge by the scientific community and selective adoption of new knowledge among the indigenous communities. The integrative perspective discussed in the study enables one to recognize the importance of indigenous knowledge as a cultural resource of the peasants, which needs revival and further documentation. The study deals with visible characteristics of the indigenous knowledge systems along with the inherent processes involved in the continuation of the knowledge and its formation. Further, it addresses the issue of knowledge transformation by reflecting its contingent relationship with modern knowledge, and emphasizing the etic frame of analysis of the knowledge.

Chapter 1 discusses the background of the study while focusing on the exclusion of indigenous agricultural knowledge systems and the marginalization of indigenous practices of plant protection, in the process of agricultural modernization. Chapter 2 contextualizes the theoretical issues pertinent to the study. It discusses the nature of indigenous knowledge, i.e., indigenous knowledge being a method of scientific inquiry in the process of development of science. The chapter looks into the position accorded to indigenous knowledge in the course of the development of scientific tradition. Further, it elaborates on the development of a tool to measure the attitude of scientists towards indigenous knowledge in plant protection practices. Chapter 3

discusses the study area (Kandhamal) along with its broader profile such as geography, demography, and agriculture. Simultaneously, it gives a brief description of the peasant and scientific communities. Chapter 4 documented the knowledge that is practised for plant protection traditionally by the peasants of Kandhamal. Chapter 5 makes an attempt to explain the socio-economic and ecological factors that are substantially essential for both internalization and continuation of these practices, in the Kandhamal agricultural system. The thrust is on the social desirability and cultural appropriateness of the practices within the peasant community. In chapter 6 the extent of acceptance of indigenous practices as a significant category by the scientific community for the generation of new scientific knowledge is the central idea. Chapter 7 discusses evolving forms of interaction between indigenous and modern plant protection knowledge, practised by both peasant and scientific communities. Chapter 8 summarizes the key findings of the study along with the recommendations, and scope for future research.

CONTENTS