

DROUGHT-PRONENESS AND HUMAN RESPONSE

Case Study of Orissa

THESIS

**SUBMITTED TO THE INDIAN INSTITUTE OF TECHNOLOGY,
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DOCTOR OF PHILOSOPHY
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By

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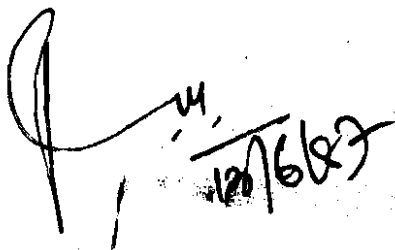
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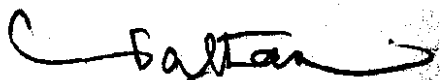
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C E R T I F I C A T E

This is to certify that the thesis entitled "DROUGHT PRONENESS AND HUMAN RESPONSE" which is being submitted by Ms. Manjurani Patnaik for the award of the Degree of DOCTOR OF PHILOSOPHY IN PLANNING to the Indian Institute of Technology, Kharagpur, is a bonafide research work carried out by her under my supervision and guidance.

She has worked for four years in this Department and fulfilled the requirements laid down for the Degree. The results embodied in this thesis have not been submitted to any other University or Institute for the award of any Degree or Prize.


12/6/85


(C. R. Pathak)
17.10.85

P R E F A C E

The phenomenon of drought as a natural hazard is not new to Indian Agriculture, especially in the areas of marginal rainfall. The economic life of the people in the drought prone areas precariously rests on the vagaries of droughts. Our incapacity to develop the water resources and to utilise properly the precious rain water though uncertain and of untimely laid for the occurrence of flood in 1978. After copious rain and frequent floods here and there, drought occurred in the following year (1979) and then in 1982 were much more widespread and the intensity was very severe in some places.

Droughts are usually defined as periods of dryness due to lack of rain water. Its intensity and frequency vary spatially and in duration depending upon seasonal concentration and annual variation of rainfall, land-use pattern, agricultural practices, cropping pattern and other regional factors. While some areas are chronically drought prone, others may also experience it even if they are not identified typically drought prone. Human response is a function of such drought proneness and vice-versa.

The study of human response, so far made is largely limited to the external aspects of human activity as displayed in the habitat, food, clothing, occupations and like, a very routine and superficial way of trying to understand human problems in relation to environment. But human response to physical environment is a product of many complex forces, both external and internal to man. Initially human response stems from mind, may it be an individual or a group. Apart from the conditional reflections of situations, it is the perception of such environment that seems to be the motivating factor. Perception undergoes a four stage behavioural process of sensation/apprehension of a situation, cognition (reaction to the situation), memorisation and decision making. This is largely influenced by socio-cultural factors, levels of living, present attainment of knowledge and available technology. However, in the present study an attempt is made to understand, to investigate and to link the human response to drought prone physical environment.

The drought prone areas in India as well as in Orissa (Study Area) are generally associated with low level of development, low and uncertain moisture conditions, limited scope of agricultural growth, predominance of small holdings, large incidence of agricultural labourers, non-availability of suitable variety of crops and lack of viable infrastructure to stimulate economic growth.

An attempt has been made here to identify the drought prone areas of Orissa State with intensity zones based on certain selected indicators. A detail investigation into the human response is done through intensive field study in the sample villages of various drought intensity zones of Orissa to highlight the issues and to arrive at meaningful operations for the management and development of drought prone areas.

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