

Rainfed Farming Development in Central India



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FOREWORD

It is a fact that the benefits of Green Revolution ushered in mid-sixties of the last century seem to vanish if monsoon rains are not timely and normal. Our Prime Minister, therefore, rightly emphasised the need for second Green Revolution. Fortunately seventy percent part of India receives an annual rainfall greater than 500 mm which if managed appropriately can definitely result in ushering an era of Ever Green Revolution in rainfed areas which extend over about two thirds of the total cultivated area of India, but notably suffer from twin problems of low and instable crop-yields. The prospects for the development of rainfed farming are bright as very useful information on crop-plans, their management practices has been made available by All India Coordinated Research Project on Dryland Agriculture (ICAR), land and rain-water management practices on watershed basis have been evolved by Operational Research Projects, soil and water conservation research centres, watershed development projects and State Agricultural Universities. Based on their long experience, the authors have done a commendable job of compiling the available information on land and water management, appropriate crop-plans and integrated farming systems so as to synthesize various components into a technology for the holistic and sustainable development of rainfed farming in various agro-climatic zones of Central India. Also, only those practices have been emphasized which have been successfully tested on farmers' fields.

I have every hope that the book entitled "Rainfed Farming Development in Central India" will serve as a good field manual for workers of the Department of Agriculture, as a comprehensive treatise on rainfed farming/watershed management and thus a valuable teaching material for undergraduate and post graduate courses of rainfed farming/watershed management offered by Agricultural Universities. Besides, the book gives an insight into problems and their solutions in respect of rainfed farming to those responsible for planning and guiding the development projects on rainfed farming/watershed management.



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PREFACE

The importance of rainfed farming in Central India can not be over emphasized as development of canal irrigation had taken place at snails speed and tube-wells and open dug wells were the main source irrigation in Uttar Pradesh, Madhya Pradesh and Bihar, resulting in excessive exploitation of under ground water. Further, a significant decrease in number of tanks has aggravated the situation by a fall in recharge of underground water. This points out the urgent need of rainwater management particularly the aspect of run-off collection in different ways for tank/farm pond irrigation, domestic use, and recharging underground water. This is really the strategy of developing the rainfed farming on watershed basis. Under All India Coordinated Research Project on Dryland Agriculture launched by Indian Council of Agricultural Research throughout the country in 1969-70, good research work was conducted to identify (i) most remunerative crop/variety, (ii) nutrient requirement of crops/cropping systems, (iii) most remunerative cropping sequence, (iv) more remunerative intercropping system, (v) alternative land use and (vi) water balance studies: run-off collection and recycling. Further, the ICAR also sanctioned 23 Operational Research Projects (ORPs) to test and transfer the research results on important problems of crop production and livestock to farmers' fields. The results of All India Coordinated Research Project on crop-production and management practices, of operational research and development projects on watershed management, relevant information available in various publications, results of rain-water management research conducted by various State Agricultural Universities and other Institutes and valuable information from personal communications of many senior scientists, have all been synthesized into a technology for holistic and sustainable development of rainfed farming and presented in this book entitled Development of Rainfed Farming in Central India.

The book has 10 chapters *viz.* (1) Problems and prospects of rain-fed farming, (2) Present status and strategy of rain-fed farming development, (3) Land and water resources, (4) Technology for watershed based rain-fed farming development, (5) Land and water management practices, (6) Improvement of productivity of rain water, (7) Cropping systems and crop management practices, (8) Planning for aberrant weather conditions and drought management, (9) Farm machinery and implements and (10) Integrated farming systems for livelihood security. In support of various recommendations and conclusions drawn, reliable

data have been presented in 62 tables. Further, the book is well illustrated through 24 figures/sketches.

While land and rain water management practices recommended in the book are applicable to whole country except arid regions, crop husbandry and alternate land use practices are locality specific. That is why the title of the book is “Rainfed Farming Development in Central India”.

It is hoped that the book will serve as (i) a manual for field workers of the Department of Agriculture, (ii) a good teaching media for undergraduate and post graduate courses on Watershed Management/Dry farming offered by Agricultural Universities and (iii) a thought provoking material for those responsible for planning and executing development projects on rain-fed/dry farming.

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LIST OF ABBREVIATIONS

AICRPDA	All India Coordinated Research Project on Dryland Agriculture
CGWB	Central Ground Water Board
CIMMYT	International Centre for Maize and Wheat Improvement
CRIDA	Central Research Institute of Dryland Agriculture
CSARD	Centre of Sustainable Agriculture and Rural Development
CSWCRTI	Central Soil and Water Conservation Research and Training Institute
DES	Directorate of Extension Services
DFW & AD	Department of Farmers Welfare and Agriculture Development
DFP	Dry Farming Project
IARI	Indian Agricultural Research Institute
IASRI	Indian Agricultural Statistics Research Institute
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crop Research Institute for Semi-arid Tropics
IGKV	Indira Gandhi Krishi Vishwa Vidyalaya
JNKVV	Jawaharlal Nehru Krishi Vishwa Vidyalaya
NAIP	National Agriculture Innovation Project
NATP	National Agriculture Technology Project
NBSSLUP	National Bureau of Soil Survey and Land Use Planning
NCHSE	National Centre for Human Settlement and Environment
NRAA	National Rainfed Areas Authority
RVSKVV	Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya
RWC	Rice-Wheat Consortium
WAPCOS	Water and Power Consultancy Services
YKGPVS	Yeshwant Krishi Gram and Panlot Vikas Sansthan

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