

Poornima Varma

Rice Productivity and Food Security in India

A Study of the System of Rice
Intensification



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Foreword

It gives me great pleasure to present to you this important work of the Centre for Management in Agriculture (CMA), Indian Institute of Management, Ahmedabad, India (IIMA). This is the 250th work in our series of published books and monographs since 1971. CMA has been actively engaged in research on important current topics and challenges in the management of the food, agriculture, agribusiness and rural sectors of the country and the world. The Centre is supported by the Ministry of Agriculture & Farmers Welfare, Government of India, and undertakes policy and evaluative research studies for the Ministry, and also conducts research on its own and for other national and international organisations. This spans policies and initiatives in topics such as the management of agricultural inputs, agro-processing, agri-food marketing, rural infrastructure, institutions, grass-roots innovations, appropriate technologies for agriculture, new technologies like GMOs, international agricultural trade and WTO issues, global competitiveness, commodity markets, food safety and quality including organic food, food supermarkets, food value chains and farmer collectives such as producer companies.

Food security continues to be a major challenge for a huge number of countries in the world, and within this, rice is the staple food for more than half of the world's population. Rice is the number one food staple in India, and being the second largest producer and consumer of rice in the world, India also substantially influences the global rice economy. There has been a downturn in the rice productivity growth in India in the recent years, and there is an urgent need for new breakthroughs in rice production technologies to ensure food security. The System of Rice Intensification (SRI) is a significant and promising new technology which not only boosts rice productivity substantially but is also more environment-friendly and sustainable than existing conventional technologies.

The present research examines the adoption of this promising technology by Indian farmers, studying the factors influencing adoption, the intensity of adoption, and the welfare gains possible through it in major rice producing states of India. It is based on primary data collected through a comprehensive household survey of 386 SRI adopters and non-adopters spread across southern, central and eastern regions

of India spanning six districts in the states of Karnataka, Madhya Pradesh and Orissa. The results offer unique policy-relevant insights on the adoption of new technologies, the impact of SRI on improving rice productivity and household incomes, as well as the constraints the farmers face, and the need to address them with appropriate policy interventions.

I am sure the study will be found useful by policymakers, researchers, and those seeking to promote new technologies such as SRI, as well as others interested in agricultural policy, new technology adoption, food security, and the welfare of farmers.

June 2017

Vasant P. Gandhi
Chairperson
Centre for Management in Agriculture
Indian Institute of Management Ahmedabad
Ahmedabad, India

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About the Author

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Abbreviations

AAS	Academy of Agricultural Sciences
AFSC	American Friend's Service Committee
ATMA	Agriculture Technology Management Agency
AWD	Alternate wetting and drying
BMP	Best Management Practices
BPL	Below poverty line
BRLPS	Bihar Rural Livelihoods Promotion Society
CADA	Community Area Development Authority
CIIFAD	Cornell International Institute for Food, Agriculture and Development
CMP	Conditional mixed process
CRRI	Central Rice Research Institute
CSA	Climate smart agriculture
CSO	Civil society organizations
CSP	Community service provider
DH	Simultaneous equation
DPRK	Democratic People's Republic of Korea
DSR	Direct seeded rice
EU	European Union
FAO	Food and Agriculture Organization
FFS	Farmer's Field Schools
GDP	Gross domestic product
GNU	Gyeongsang National University
HYV	High yielding variety
ICDP	Integrated Cereal Development Program
ICT	Information and Communication Technology
IRRI	International Rice Research Institute
J&K	Jammu & Kashmir
MARDI	Malaysian Agricultural and Rural Development Institute
MML	Mixed multinomial logit
MSP	Market selling price

MVP	Multivariate probit
NABARD	National Bank for Agriculture and Rural Development
NE	North East
NFSM	National Food Security Mission
NGO	Non-governmental organization
NREGA	National Rural Employment Guarantee Act
OP	Ordered probit
PDS	Public distribution system
RKVY	Rashtriya Krishi Vikas Yojana
SCI	System of Crop Intensification
SFMI	System of Finger Millet Intensification
SICA	Sistema Intensivo de Cultivo Arrocerero
SKDRDP	Shri Kshetra Dharmasthala Rural Development
SRI	System of Rice Intensification
SSI	Sustainable Sugar Initiative
STI	System of Teff Intensification
STRASA	Stress-Tolerant Rice for Africa and South Asia
SWI	System of Wheat Intensification
TC	Tissue culture
UKM	Universiti Kebangsaan Malaysia
WTO	World Trade Organization

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