

The National Development Council (NDC), in its 53<sup>rd</sup> meeting held on 29<sup>th</sup> May 2007, adopted a resolution to launch Food Security Mission comprising rice, wheat and pulses to increase the production of rice by 10 million tons, wheat by 8 million tons and pulses by 2 million tons by the end of the eleventh Five Year Plan (2011-12).

Accordingly, the National Food Security Mission was launched as a centrally sponsored scheme. The objective of the mission is to increase production and productivity of wheat, rice and pulses on a sustainable basis so as to ensure food security of the country. The approach is to bridge the yield gap in respect of these crops through dissemination of improved technologies and farm management practices. It is envisaged to focus on districts, which have potential, but relatively low level of productivity performance at present. There are a series of programme interventions, efforts to reach resource poor farmers and continuous monitoring of various activities. Panchayati Raj Institutions play a central role in selection of beneficiaries and identifying priority areas, and also in the entire gamut of activities of the mission. A strong component of project management, monitoring and evaluation steers the scheme on course for achieving the Mission's objectives. The present study is an attempt to analyze the possibilities and constraints in pulses production in Bihar, and impact of National Food Security Mission on Pulses Production. National Food Security Mission (NFSM) on pulses has been implemented in 168 identified districts across the states. As of now, Bihar has 13 NFSM pulses districts.

Total areas under lentil crop before launching NFSM was 25.25 hectares and after NFSM, area under lentil became 32.00 hectares. It increased to 26.73 per cent after NFSM. Similarly, total areas under gram before and after NFSM were recorded as 21.00 hectares and 24.00 hectares respectively. Its area had increased to 14.29 per cent in gram; it means there was higher increase in the area of lentil than gram. Besides increase in area of the pulse crops, the production has also increased substantially. But it has the potential to increase more provided some constraints are attended.

Moreover, I thank Mr. Rambalak Choudhary, Research Officer-Cum-Project leader of the study and all the members of the Project Team for completing this study on behalf of the Centre. They all indeed deserve full appreciation.

It is hoped that the results of the study will be useful for policy makers, researchers and other professionals.

**Basant Kumar Jha**

*Director*

Agro-Economic Research Centre for Bihar & Jharkhand

T M Bhagalpur University

Bhagalpur - 812 007

In Bihar, the National Food Security Mission (NFSM) was launched in 2007-08 as a centrally sponsored scheme. The present study is entitled as **POSSIBILITIES AND CONSTRAINTS FOR INCREASING THE PRODUCTION OF PULSES IN BIHAR AND IMPACT OF NFSM ON PULSES IN BIHAR**. It analyzes the impact of NFSM on pulses in Bihar. The findings of the study will be useful for the policymakers, planners, academia and all concerned. In course of the study, we received immense feedback from different scholars and officials belonging to various government departments. First of all, I am grateful to Dr. Nilabja Ghosh, Co-ordinator of the study, Institute of Economic Growth, Delhi University, for guiding in conduct of the study and giving valuable comments on the draft report, which have been duly incorporated. I am also grateful to our Director, Prof. (Dr.) Basant Kumar Jha for his overall supervision and guidance. I would like to record my sincere thanks to all the government officials of the state for their invaluable help.

I express my thanks to the respondents for providing us necessary information and sparing valuable time in collection of primary data. The present work is the outcome of the efforts made by the members of the Project Team, so I take this opportunity to thank all of them.

**Rambalak Choudhary**  
*Project Leader*

## List of Tables

Table Nos.	Description of the tables	Page Nos.
Table No. 1.1:	Category-wise Distribution of Sample Respondents	3
Table No. 2.1:	Area under Important Crops in the State (Average of Last Five Years)	5
Table No. 2.2:	Compound Annual Growth Rate (CAGR) over 1997-2008 of Area, Production, Yield of the important crops in the State	7
Table No. 2.3:	CAGR over 1997-2008 of A, P, Y, of Important Variables in the State (Area is '000 ha)	8
Table No. 2.4:	Area under Important Pulses in the State (Average of Last Five Years)	8
Table No. 2.5 (A):	Area, Production, Yield and Irrigated Area under Pulses: (Moong) State	10
Table No. 2.5 (B):	Area, Production, Yield and Irrigated Area under Pulses: (Lentil) State	11
Table No. 2.5 (C):	Area, Production, Yield and Irrigated Area under Pulses: (Gram) State	12
Table No. 2.5 (D):	Area, Production, Yield and Irrigated Area under Pulses: (Khesadi) State	12
Table No. 2.6:	CAGR Over 1997-2008 of A, P, Y of Major Pulse Crops in Patna District.	13
Table No. 2.7:	CAGR Over 1997-2008 of A, P, Y of Major Pulse Crops in Kishanganj District.	13
Table no. 3.1:	Demographic Profile of Patna and Kishanganj Districts.	17
Table No. 3.2 (A):	Demographic Profile of the Head (NFSM & Non-NFSM)	17
Table No. 3.2 (B):	Education Profile of the Head: (No of Hhlds), (NFSM & Non-NFSM)	18
Table No. 3.2 (C):	Education Profile of the Adult Population (NFSM & Non-NFSM)	18-19
Table No. 3.2 (D):	Demographic Profile of the Children (NFSM & Non-NFSM)	19
Table No. 3.2 (E):	Caste Composition: (No of HHlds) (NFSM & Non-NFSM)	20
Table No. 3.3 (A):	Irrigation Detail of Sample Farmer (NFSM & Non-NFSM)	22
Table No. 3.3 (B):	Cropping Pattern over All Seasons (NFSM & Non-NFSM)	23
Table No. 3.3 (C):	Season wise Cropping Pattern (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	24
Table No. 3.3 (D):	Area under Pulses Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	25
Table No. 3.4 (A):	Area under Kharif Pulse Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	26
Table No. 3.4 (B):	Area under Rabi Pulse Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	26
Table No. 3.5	Size Group wise Area in Pulse Farming (NFSM & Non-NFSM)	27
Table No. 3.6 (A):	Irrigated Area under Pulse Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	28
Table No. 3.6 (B):	Total Area under Pulse Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	29
Table No. 3.7	Irrigated Area under different Crops (Average of 2006-07, 2007-08, 2008-09) (NFSM & Non-NFSM)	30
Table No. 4.1:	Profitability of Pulses Farming (NFSM) District: <i>Pulse Crop1 (Lentil)</i>	33
Table No. 4.2:	Profitability of Pulses Farming (NFSM) District: <i>Pulse Crop1 (Gram)</i>	34
Table No. 4.3:	Total Profitability of Pulses (NFSM District) (Lentil + Gram)	35
Table No. 4.4:	Profitability of Pulses Farming (Non-NFSM District): <i>Pulse Crop1 (Moong)</i>	36

Table No. 4.5:	Profitability of Pulses Farming (Non-NFSM District): Pulse Crop2 (Lentil)	37
Table No. 4.6:	Total Profitability of Pulses (Non-NFSM District) (Moong & Lentil)	38
Table No. 4.7:	Profitability of other Major Crops Like Rice (In Rs.) (NFSM & Non-NFSM)	40
Table No. 4.8:	Profitability of other Major Crop like Wheat NFSM District (NFSM & Non-NFSM)	42
Table No.4.9:	Total Profitability of other Major Crops Like Rice + Wheat (NFSM District)	44
Table No.4.10	Total Profitability of other Major Crops Like Maize NFSM & Non-NFSM District	45-46
Table No. 5.1:	Households Reporting Area under Improved Varieties of Pulses (NFSM & Non-NFSM)	47
Table No. 5.2:	Area under Improved Varieties of Pulses: (NFSM & Non-NFSM)	48
Table No. 5.3:	Knowledge of Improved Varieties: (NFSM & Non-NFSM)	49
Table No. 5.4:	Source of Knowledge of Improved Varieties (NFSM & Non-NFSM)	50
Table No. 5.5:	Recommended Practices for Improved Variety of Pulses Crops (NFSM & Non-NFSM)	51
Table No. 5.6:	Households Reporting Problems with Improved Varieties of Pulses (NFSM & Non-NFSM)	52
Table No. 5.7	Suggested Solutions for Improved Varieties of Pulses (NFSM & Non-NFSM)	53
Table No. 5.8:	Marketing Channels for Pulse Crops (NFSM & Non-NFSM)	55
Table No. 5.9:	Quantity of Lentil Sold through Various Marketing Channels (NFSM)	56
Table No. 5.10:	Quantity of Lentil Sold through Various Marketing Channels (Non-NFSM)	56
Table No. 5.11:	Quantity of Moong Sold through Various Marketing Channels (Non-NFSM)	57
Table No. 5.12:	Quantity of Gram Sold through Various Marketing Channels (NFSM)	58
Table No. 6.1:	Opinion Survey for Major Pest Problems (NFSM & Non-NFSM)	60
Table No. 6.2:	Reasons for Growing Pulses (NFSM & Non-NFSM)	61
Table No. 6.3:	Reasons for Growing Pulses: Size Group wise: (NFSM & Non-NFSM)	62
Table No. 6.4:	Criteria Used While Opting to Grow Pulses (NFSM & Non-NFSM)	63
Table No. 6.5:	Reasons for Low Area under Pulses (NFSM & Non-NFSM)	63
Table No. 6.6:	Crops Grown on Inferior Quality of Lands (NFSM & Non-NFSM)	64
Table No. 6.7:	Problems for Growing Pulses on Inferior Quality Lands (NFSM & Non-NFSM)	65
Table No. 6.8:	Reasons for Shifting from Pulses to other Crops (NFSM & Non-NFSM)	66
Table No. 6.9:	Farmers Willing to Grow Pulses if Assured Market is provided (NFSM & Non-NFSM)	67
Table No. 6.10:	Major Problems for Cultivating Pulses (NFSM & Non-NFSM)	68
Table No. 6.11:	Important Suggestions from the Farmers for Cultivating Pulses (NFSM & Non-NFSM)	69-70
Table No. 7.1:	Farmers' Awareness of NFSM Pulses	71
Table No. 7.2:	Received any Assistance under NFSM-Pulses	72
Table No. 7.3:	Distribution by Type of Assistance	72
Table No. 7.4:	Usefulness of NFSM-Pulses	73
Table No. 7.5:	Distribution by Type of Use	74
Table No. 7.6:	Area under Pulse Crops Before and after NFSM	74
Table No. 7.7:	Production of Pulse Crops Before and After NFSM	75
Table No. 7.8:	Increase in Area under Pulses after NFSM: Farmers' Perception	76
Table No. 7.9:	Distribution by Extent of Increase: Farmer's Perception	76
Table No. 7.10:	Problems for Improvement of the NFSM Pulses' Programme	77
Table No. 7.11:	Important Suggestions for Cultivating Pulses in NFSM District	78

## PROJECT TEAM

---

Overall Guidance & Supervision	:	Prof. (Dr.) Basant Kumar Jha Director
Project Leader	:	Mr. Rambalak Choudhary Research Officer
Data Collection & Tabulation	:	Dr. Ranjan Kumar Sinha Research Officer  Dr Shambhu Deo Mishra Research Associate (Contract)  Dr. Rajiv Kumar Sinha Research Associate  Dr. Rosline K Marandi Research Associate
Computer Typing	:	Mr. Jai Shankar Choudhary Typist
Secretarial Assistance	:	Mr. Anil Kumar Saraf Accounts Assistant  Mr. Ganesh Pd. Vishwakarma

## Contents

---

Chapter	Particulars	Page Nos.
	<i>Foreword</i>	<i>i</i>
	<i>Preface</i>	<i>ii</i>
	<i>List of tables</i>	<i>iii-iv</i>
I.	INTRODUCTION	1-04
II.	PUSLES SECTOR IN THE STATE AND DISTRICT	5-13
III.	DEMOGRAPHIC PROFILE AND CROPPING PATTERN OF THE STUDY REGION	14-30
IV.	ECONOMICS OF PULSES CULTIVATION	31-46
V.	TECHNOLOGYT ADOPTION	47-58
VI.	MAJOR PEST PROBEMS	59-70
VII.	IMPACT OF NFSM PULSE ON PULSE PRODUCTION IN BIHAR	71-78
VIII.	SUMMARY, CONCLUSIONS & POLICY IMPLICATIONS	79-90
	<i>References</i>	<i>91</i>
	<i>Annexure – I:       Comments on the Draft Report</i>	<i>92</i>
	<i>Annexure- II :     Action Taken Report</i>	<i>93</i>