International Journal of Applied and Natural Sciences (IJANS)
ISSN(P): 2319-4014; ISSN(E): 2319-4022
Special Edition, Jan 2017, 9-14

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

NATIONAL FOOD SECURITY MISSION: A NEW HOPE FOR BETTER HARVEST OF PULSE CROPS IN WEST BENGAL

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ABSTRACT

India is the largest producer, consumer and as well as largest importer of pulses in the world. In West Bengal total pulse growing areas, production & productivity are 246950 ha, 23539 ton & 953kg/ha (2014-15) respectively. But there is a huge gap (nearly80%) between requirement & production of pulse crops in west Bengal. So to meet the states' domestic requirement we have to depend upon those states. Consequently the price of *dal* is always fluctuating. Therefore to stable the market price & to increase the pulse production & to energize the farmers to grow pulse crops, Central Govt. has increased the MSP of different pulses time to time. In West Bengal NFSM pulse programme was started from 2007 at seven district & now presently all the agricultural districts (19) have come under this mission. Initiatives have been taken by the Agriculture Department, Govt. of WB for popularizing improved package of practices of pulses. During the year 2013-14 the total pulse growing areas has been moved up to 233430 ha with a productivity of 922 kg/ha (11.76% increase over 2009-10) in WB. The % of increase of productivity in the year 2009-10 was 15.06 in case of NFSM pulse district over 2006-07 ,where as in case non NFSM district & for state total it was 12.15 % & 11.66% respectively. So there is a vast scope to increase pulse production in this state by using the rice fallow areas, intercropping with maize, oilseeds, other cereals, NFSM-Pulse programme in the state.

KEYWORDS: NFSM, Pulse, Area, Production, West Bengal

INTRODUCTION

In India Pulses are cultivated in around 25.23 million hectares of land with 19.27 million tonnes of pulses production per annum during 2013-14 (source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation). India comprises of one third of the total world area and one fifth of total world production. India primarily produces bengal gram (chickpea), red gram (tur/arhar), lentil (masur), green gram (mung) and black gram (urad). For majority of vegetarian population in India as well as in West Bengal pulses are the major source of protein. In West Bengal total pulse growing areas, production & productivity are 246950m ha,235390 m. ton & 953kg/ha respectively in the year 2014-15(Source: Department of Agriculture, Govt. of West Bengal).But there is a huge a gap(nearly80%) between requirement & production of pulse crops in west Bengal. Where as in India main pulse growing states are MP, UP, AP, Rajasthan, Maharashtra etc. So to meet the states' domestic requirement we have to depend upon those states.

Consequently the price of *dal* is always fluctuating. Not only that the productivity of pulse crop in the world is such that France (4219kg/ha), Canada (1936 kg /ha, USA (1882 kg /ha) where as in India during 2013-14 it is (764 kg/ha) & in WB 922 (kg/ha), Kerala (2515kg/ha), HP (1165kg/ha) (source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation). National Food Security Mission (NFSM) has been launched in the year 2007. The National Food Security Mission (NFSM) has five components like (i) NFSM- Rice, (ii) NFSM-Wheat, (iii) NFSM-Pulses, (iv) NFSM-Coarse cereals and (v)NFSM-Commercial Crops . In NFSM programme focus has always been given on low productivity and high potential districts including cultivation of food grain crops in rain fed areas. The main objectives of NFSM programme is to increase the area, production, productivity of pulse through INM (Integrated Nutrient Management), restoring soil fertility level by using soil ameliorants like gypsum, lime etc. & therefore to augment farmers income. To achieve these objectives the NFSM has taken the strategies like emphasis on pulse production by utilizing the rice fallow areas, bunds at rice plots, intercropping of pulses with cereals, oilseeds, sugarcane, jutes etc. Pulse production has recorded less than one percent annual growth during the last 4 decades. NFSM has given an outstanding result & achieved the targeted additional production of pulse. During the 12^{th} five year plan this mission has given an additional production of 4 million tons of pulse in India. In this paper we have tried to discuss on the prospect of NFSM pulse programme in West Bengal.

MATERIALS & METHODS

The present study is based on secondary sources. Information has been collected from various official sources like Central Statistical Organization, Council of applied economic research, Department of Agriculture and Cooperation, Govt. of India, Ministry of Agriculture, Krishibhawan, New Delhi, Department of Agriculture, Govt. of West Bengal and Directorate of Economics and Statistics, Govt. of India.

However initiatives have been taken by the Agriculture Department, Govt. of WB for popularizing improved package of practices of pulses like use of certified seeds, seed treatment, INM, IPM, IWM, resource conservation technology, capacity building programme for farmers, conduction of demonstration centre, practice of farm mechanization, set up of *dal* meal & rural go-downs for good post harvest management & close monitoring for timely reach of assistance to the targeted beneficiaries. In West Bengal NFSM pulse programme was started from 2007 at seven district & now presently all the agricultural districts (19) have come under this mission. During the year 2013-14 the total pulse growing areas has been moved up to 233430 ha with a productivity of 922 kg/ha (11.76% increase over 2009-10) in WB (Table 3). Under NFSM programme the types of benefits farmers getting is depicted below in table 1.

RESULTS AND DISCUSSIONS

From the table no.2 a distinct difference of pulse production is being found between NFSM & NON-NFSM district of West Bengal. The area of pulse under NFSM district in the year 2009-10 has been increased by 16.64% over the year 2006-07 where as in case of non NFSM district & State total the increase is 14.93% & 16.11% respectively. The productivity of pulse in the year 2006-07, 2007-08, 2008-09 & 2009-10 was higher in case of NFSM pulse district as compare to non –NFSM district. The % of increase of productivity was 16.20, 20.05, 34.32 & 19.21 in the year 06-07, 07-08, 08-09 & 09-10 respectively. The % of increase of productivity in the year 2009-10 was 15.06 in case of NFSM pulse district over 2006-07, where as in case of non NFSM district & for state total it was 12.15 % & 11.66%.

Therefore, for increase in overall pulse production from 2006-07 to 2009-10, NFSM has taken a significant role in West Bengal.

The Figure no.1 depicts how the area & production of mungbean, urdbean, lentil, chickpea (except its yield in 2010-11) & lathyrus (except its area in 2010-11) has established a stability from 2008-09 to 2010-11 in West Bengal, otherwise there was no decline either in area or in production for those pulses during this period. However NFSM must have played a significant role in this case.

Table 3 describes that the area & production of pulses in West Bengal has shown an increasing trend in the area 2012-13, 13-14 & 14-15 respectively. The increase in area & production in the year 2013-14 over the year 2012-13 was 16.72% & 13.27% respectively, for the year 2014-15 over the 2013-14 ,the figure were 5.79% & 9.37% respectively. Productivity has also increased in those year except in the year 2013-14. However the decrease of productivity in the year 2013-14 may be due to some unavoidable factors like climate. NFSM programme may have played an important role in this regards.

However the upward slopping curves in figure 2. shows that there is a positive effect of NFSM in area expansion & production increase of pulses in West Bengal.

Table 4 shows a clear idea about the performance of NFSM Pulse programme in West Bengal during the last six years (2009-10 to 2014-15). There is a sharp increase in area of pulse production (35.38%), where as productivity has been increased gradually (15.52%), as there may be some climatic or other external factors that may have affected the production. However the impact is a good sign of better future of stability of pulse production in West Bengal.

The domestic price inflation for pulses is measured by Wholesale Price Index and it always shows a the fluctuating trend. This is quite clear from figure 3. For this fluctuating market price of pulse in India as well as in West Bengal the farmers become less interested for pulse production. Instead of pulse they generally like to grow cash crops like potato.

Therefore with the view to stable the market price & to increase the pulse production in India & to energize the farmers to grow pulse crops, Central Govt. has increased the MSP of different pulses time to time which is quite clear from following figure presented below.

From the Figure no.4, it is quite clear that there is a sharp increase in MSP for the pulses like Arhar, Mung & Gram from 2007-08 to 2014-15-16.The percentage of increase of MSP in those cases was 198.38, 185.29 & 114.53 for Arhar, Mung & Gram respectively. For Kalai during the year (2009-10 & 2013-14) & for Lentil during 2010-11 there was no increase in MSP. The % of increase of MSP for these two pulse from 2007-08 to 2014-15 was 172.05 & 90.93 respectively. But there was no decline in MSP in any year for any pulse during this period. This incidence has energized the pulse grower to go for pulse cultivation under NFSM programme.

Per capita pulse availability has dropped down from around 60 grams per day in the 1950s to 40 grams in the 1980s and then to 35 grams per day in 2000 (Source: India's pulse scenario 2014 by national council of applied economic research). But there has a significant increase in consumption upto 50 grams of pulse per day. This may be the significant outcome of the National Food Security Mission (NFSM) due to higher production of pulses.

CONCLUSIONS

Now India is importing about 3500000 ton pulses (National Council of Applied Economic Research Report, 2014) which is 17.8% of total pulse production of the country. Due to inconsistency in pulse production (fluctuating price market & MSP & govt. approach), farmers didn't show much interest for pulse cultivation in West Bengal in the past years. So in order to bridge up the gap between demand & supply of pulse govt. has started NFSM programme for pulse in WB. All the district in West Bengal has come under NFSM pulse programme, therefore it can be concluded that with integrated crop management along with good msp, pulse growing areas in WB may increase to lessen the dependency on other state/ country for export of pulses. However it is important to note that in order to get the impact of NFSM, there is need to carry forward the development processes like regular revision of MSP, timely approach of Agriculture department, and farmers participation etc.

Table 1: Types of Facilities given to Beneficiaries under NFSM Pulse Programme

Inputs	Rate of Assistance
1.Seed Materials a) Production of Foundation seeds	Rs 1000/ per Qt
b) Production of Certified seeds	Rs 1000/ per Qt
c) Distribution of Certified seeds	Rs 1200/ per Qt
d) Strengthening of Seed Certification Agency	Rs. 25.00 lakh per year
2.Integrated Nutrient Management: a) Lime / Gypsum	Rs 750/ per ha
b) Micro-Nutrients	Rs 500/ per ha
3.Integrated Pest Management(IPM)	Rs 750/ per ha
4.Distribution of Sprinkler Sets	Rs 7500/ per ha
5.Distribution of Zero Till Seed Drills	Rs 15000/ per Machine
6.Incentive on Muti-crop Planters	Rs 15000/ per Machine
7.Incentive on Seed Drills	Rs 15000/ per Machine
8.Distribution of Rotavators	Rs 30000/ per Machine
9.Incentive for Diesel Pump Sets	Rs 10000/ per Machine
10.Incentive on Knap Sack Sprayers	Rs 3000/ per Machine
11.Training & Awareness (i) Training on pattern of FFS	Rs 17000/ per trg.
(ii) State Level Trainings for Trainers	Rs. 1.00 lakh per trg.
(iii) Award for best performing district	Rs. 5.00 lakh / district

Source: Status of NFSM activities of West Bengal 2010-11. Report presented by department of Agriculture, Govt. of West Bengal

Table 2: Performance of NFSM & Non NFSM District 6of WB in Pulse Production (2006-07 to 2009-10)

	2006-07			2007-08			2008-09			2009-10		
	A	P	Y	A	P	Y	A	P	Y	A	P	Y
NFSM District (07)	152015	108975	717	142452	117769	826	125959	96586	767	177317	146360	825
Non NFSM District(11)	67591	45374	617	58491	40252	688	58055	33144	571	77683	53765	692
WB GT	219606	154349	703	200943	158021	786	184014	129730	705	255000	200125	785

A-Area (ha), P-Production(ton), Y-Yield (kg/ha)

Source: Source: Status of NFSM activities of West Bengal 2010-11. Report presented by department of Agriculture, Govt. of West Bengal.

Table 3: Year Wise Area, Production & Yield of Pulses during 2012-13 to 2014-15 in West Bengal

	2012-13	2013-14	2014-15	% change during 13-14 over 2012-13	% change during 14-15 over 2013-14
Area(000ha)	200	233.43	246.95	16.72	5.79
Production(000ton)	190	215.22	235.39	13.27	9.37
Yield(kg/ha)	950	922	953	(-)2.95	3.36

Source: Agriculture statistics at a glance 2014& Report of 11th meeting of general council of NFSM, Presented by Department of Agriculture, govt. of WB on 26.08.2015

Table 4: Impact of NFSM Pulse Programme in West Bengal over the Past Six Years

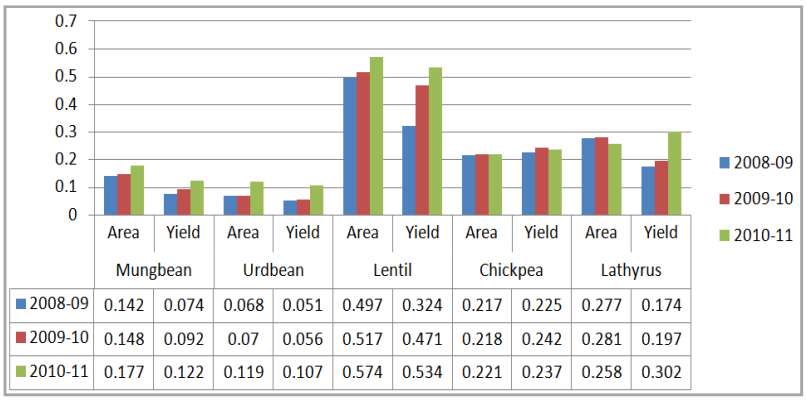
Area(000 ha)		Yield(kg/ha)		Increase in Area	Increase in Yield(kg/ha)
2009-10	2014-15	2009-10	2014-15	35.38%	15.52%
182.40	246.95	825	953		

Source: Report of 11th meeting general council of NFSM presented by Agriculture department, Govt. of West Bengal on 26.08.2015

Table 5: Year wise Minimum Support Prices (Rs / Quintal) for Different Pulses in India(2007-08 to 2015-16)

Crop	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Arhar	1550	2000	2300	3000	3200	3850	4300	4350	4625
Mung	1700	2520	2760	3170	3500	4400	4500	4600	4850
Kalai	1700	2520	2520	2900	3300	4300	4300	4350	4625
Gram	1445	1600	1730	1760	2100	2800	3000	3100	NA
Lentil	1545	1700	1870	1870	2250	2800	2900	2950	NA

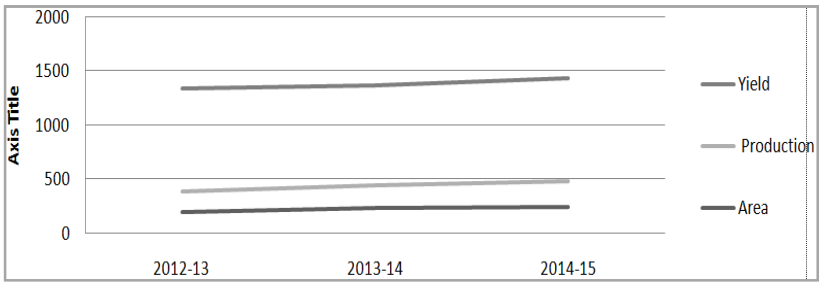
Source: DES, Dept. of Agriculture, Cooperation, Ministry of Agriculture, Govt. India



	Mungbean Area	Mungbean Yield	Urdbean Area	Urdbean Yield	Lentil Area	Lentil Yield	Chickpea Area	Chickpea Yield	Lathyrus Area	Lathyrus Yield
2008-09	0.142	0.074	0.068	0.051	0.497	0.324	0.217	0.225	0.277	0.174
2009-10	0.148	0.092	0.07	0.056	0.517	0.471	0.218	0.242	0.281	0.197
2010-11	0.177	0.122	0.119	0.107	0.574	0.534	0.221	0.237	0.258	0.302

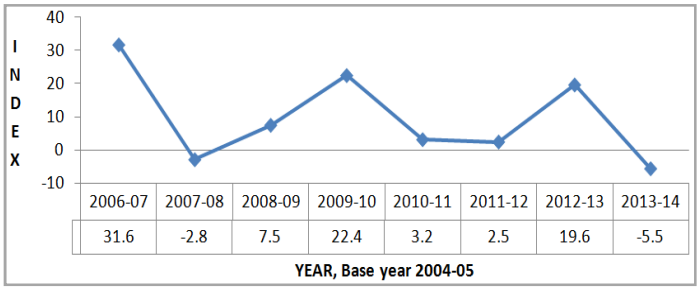
Source: DES, DAC, Ministry of Agriculture, Krishi Bhawan, New Delhi

Figure 1: Area and Production of Different Pulses in West Bengal during (2008-09 to 2010-11)



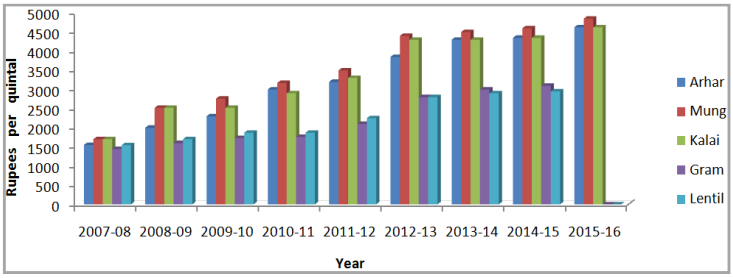
Source: Constructed on the basis of table 3

Figure 2: **Trends of Area, Production, Yield of Pulses in West Bengal (2012-13 to 2014-15)**



Source: DES, Dept. of Agriculture, Cooperation, Ministry of Agriculture, Govt. India

Figure 3: Wholesale Price Index Fluctuation of Pulses in India



Source: Constructed on the basis of table 5

Figure 4: Trend in MSP of Different Pulses in India (2007-08 to 2015-16)

ACKNOWLEDGEMENTS

The author is very much thankful to the department of Agriculture, Govt. of West Bengal for valuable source of information and the same time to the employees of RRS, BCKV, Jhargram.

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