

STRATEGIES FOR ACHIEVING SELF-SUFFICIENCY IN PULSES AND OILSEEDS

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Government of India is operating a comprehensive National Food Security Mission (NFSM) to maintain sustainable food security in the country which provides support to pulses, cereals, millets and selected commercial crops. Previously the NFSM was operative only in limited States, but the present Government extended its benefits to all 29 states and 638 districts during 2014-15. But, with reference to pulses, a major decision was taken to exclusively dedicate 50 per cent allocations for development of pulses alone. This will benefit north-eastern States and hilly States, such as Himachal Pradesh, Jammu & Kashmir and Uttarakhand. These States have appreciable potential for cultivation of pulses, but previously, the pulse farming was not getting its due share mainly due to lack of sufficient resources.

India is a proud nation enjoying self-sufficiency in foodgrain production and sustainable food security despite burgeoning population and various climatic stresses. But there is no room for complacency, because country is still facing severe challenges in pulse and oilseeds sectors. Poor productivity and low gross production compel country to resort to frequent imports for meeting the domestic demand of pulses and oilseeds. The widening gap between demand and supply often leads to skyrocketing of prices in domestic market, especially in pulses, which is a cause of major concern for general public and the Government alike. More than two years ago, the new Government took a decisive step and developed strategies for achieving self-sufficiency in pulses and oilseeds. Prime Minister Shri Narendra Modi, while launching DD Kisan Channel on 26th May 2015, urged and motivated farmers to work hard in a mission mode for achieving self-sufficiency in pulses by 2022, when India will be celebrating its platinum jubilee of Independence. Prime Minister expressed his concern over widespread protein malnutrition in the country which can be eradicated by regular and adequate supply of pulses to poor families. Referring import of edible oils, he suggested to fix-up a target for cut off imports, so that farmers can be better paid for oilseeds crops. Acting promptly on the call of Prime Minister, Ministry of Agriculture and Farmers Welfare developed a strategic roadmap for increasing per hectare productivity, cropped

area and processing facilities. Steps were also taken to make both these crops more remunerative to farmers mainly by increasing minimum support price and extending support of inputs to farmers. The Indian Council of Agricultural Research (ICAR) is supporting the endeavours through its R&D programmes, extension mechanism and expert inputs for devising future vision for these important commodities. Government of India is also supporting 'International Year of Pulses – 2016' a call given by United Nations, by organizing various activities and events among stakeholders with the objective to promote farming of pulses across the country. Similarly, an International Conference is being organized this month (12-14 November 2016) on 'Pulses for Nutritional Security and Sustainable Agriculture' in which researchers, policy planners, extension personnel, industrialists, entrepreneurs will deliberate to develop a roadmap for increasing



productivity and more importantly profitability of pulses.

Pulses : Production, Demand and Supply

India is the largest producer of pulses in the world (approximately 25 per cent of the total 80 million tonnes) and also enjoys distinction of being largest consumer (nearly 28 per cent) as well. Recently, India fetched the unappreciable position of number one importer due to frequent and large imports. According to 'VISION-2050' of ICAR – Indian Institute of Pulses Research (IDPR), Kanpur the present production of pulses hovers around 19 million tonnes, which falls short (approximately two million tonnes) of the current domestic demand of 21 million tonnes. In order to narrow down the demand – supply gap and control process in domestic market, the country resorts to import pulses to the tune of 2-3 million tonnes per year entailing significant expenditure in terms of valuable foreign exchange. The country is growing pulses in an area of about 24 to 25 million hectares of land with productivity of about 780 kg a hectare which is less than the global average and a major cause of concern. Currently, daily per capita availability of pulses is 37 gram which is considerably lower than the ICMR recommendation of 52 gram. If we dream of a healthy India in 2050, the requirement of pulses will be 39 million tonnes which necessitates an annual growth rate of 2.14 per cent. To meet the projected demand, productivity must be enhanced to a level of 1200 kg per hectare and about 3 to 5 million hectares additional area has to be brought under pulses across the country. Serious efforts are required to drastically reduce the post harvest losses as well. But the pathway to achieve the target has many inherent technical and socio-challenges and problems.

Presently, more than 92 per cent of the area under pulses is confined to unirrigated areas where farming chiefly depends on monsoon rains. Drought or drought like conditions, coupled with heat stress may reduce seed yields by 50 per cent, especially in arid and semi-arid regions. Most of the pulses are grown in low fertility and problematic soils struggling with salinity and alkalinity. In the current climatic change scenario, pulses are likely to be drastically affected by temperature extremes. Poor drainage and water logging during rainy

season may cause heavy losses to pulses, especially in pigeon pea due to low plant stand and increased incidence of diseases. Pod barmers, aphids, cutworm, powdery mildew, rust and wilt are the major pests and diseases affecting many pulses, especially lentil. According to experts, the richness of pulse legumes in nitrogen and phosphorous, makes them attractive and vulnerable to pests and diseases.

Generally, pulses are grown by resource poor farmers and treated as secondary crops with finest productivity to staple cereals and other cash crops. As a consequence, pulses are generally deprived of essential inputs, due care and latest technologies. Availability of quality seed of improved varieties is one of the major constraints in increasing productivity of pulses. Besides, till recently, farmers were not getting attractive prices for pulses which was a major cause of discouragement for pulse farming.

Efforts Towards 'Pulses for All'

The Government has launched many new initiatives and strengthened various programmes to give a round filip to production of pulses in the country.

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A special attraction of nearly ₹200 crore has been made exclusively for increasing area under

pulses during various cropping seasons. Cultivation of pulses is being promoted as an inter crop with cereals, oilseeds and cash crops with introduction of suitable varieties and package of practices. Scientists have demonstrated successful cultivation of pigeon pea on bunds of rice fields. Similarly, pulse crop is being encouraged in rice fallow areas under 'Bringing Green Revolution in Eastern India' scheme. Summer Moong (green gram) cultivation is also being promoted through necessary technical support. Rice fallows in the India-Gangetic Plains offer a huge potential for expansion of the area of *rabi* pulses such as chickpea and lentil. Short duration varieties of chickpea and lentil, successfully grown after rice harvest in some States, have given reasonably high yields. Several on-farm trials have indicated that pigeon pea can be grown profitably in place of rice during the *kharif* season allowing timely sowing of wheat crop. The net economic returns under pigeon pea-wheat system were greater compared with the rice-wheat system. Availability of extra short duration of varieties of pigeon pea has opened a new avenue of its cultivation up to the elevation of 2000 meter above sea level in Uttarakhand and other hilly States. Indian Institute of pulses Research (IIPR), Kanpur has developed several profitable cropping systems such as pigeon pea-wheat, pigeon pea/rice-wheat-green gram, etc. for inclusion of pulses in various crop cycles. Pulses can also be grown profitably as inter-crop with rapeseed-mustard, sunflower, linseed and potato. Green gram and black gram have given high yields and profits when grown with planted sugarcane.

Present Government strengthened frontline demonstration program in pulses by allocating funds and facilitating better support. Under these demonstrations, extension scientists arrange ideal farming conditions at farmers' fields demonstrating scientific production technologies by adopting improved varieties, judicious use of manures and fertilisers and scientific management of pests and diseases. Necessary and critical inputs are also provided. Frontline demonstrations are arranged with the objective to demonstrate full potential of pulse crops to farmers so that they get convinced for production of pulses in their fields. During 2015-16, more than 60,000 pulse demonstrations were conducted covering 22,000 hectare of land across the country. More than 475 Krishi Vigyan



Kendras (KVKs) – Farm Science Centres of ICAR located in each rural district of the country – were involved in the process. With more allocations, 77500 demonstrations over 31,000 hectare area are planned for 2016-17. Recent reports indicate a very positive response of these demonstrations as pulse area in these districts is on the rise.

The accessibility of small holding farmers to quality seed of improved pulse varieties is constrained by both inadequate demand creation and limited supply. Hence, the seed replacement rate in pulses is considerably low. For augmenting the availability of quality seeds, present Government has launched a special project for creation of Seed Hubs across the country with a total outlay of nearly ₹ 140 lakhs. The project aims to establish nearly 100 Seed Hubs across the country in State Agricultural Universities, ICAR Institutes and KVKs. ICAR-IIPR is acting as model agency with responsibility of co-ordination, monitoring and technical support for seed production. The project has a provision of ₹50 lakhs in the first year at each Seed Hub for creating infrastructures to ensure seed production and processing as well as storage of seeds. In addition, ₹ 100 lakhs has been provisioned for each Seed hub as a revolving fund to meet various expanses during 2016-18. All the seed hubs together have been given a target of producing 51,285 quintals quality seed of different pulses during 2016-17; 71,520 quintals during 2017-18 and 92,650 quintals during 2018-19, thereby producing a total of 2,15,455 quintals of quality seeds over a period of three years. Availability of quality seeds to farmers at affordable prices will certainly help increase area and productivity of pulses.

On the Price Front

Present Government has expressed its commitment, time and again, to safeguard and protect interests of farmers and consumers alike. Hence, Government has substantially increased Minimum Support Prices (MSP) of pulses and enhanced imports to meet rising domestic demand. In addition, adequate buffer stock of pulses is also being created. Recently, Government has increased MSPs of *kharif* pulses for 2016-17 season as ₹ 5,050/- per quintal, ₹ 5,225/- per quintal and ₹ 5,000/- per quintal for *Tur (Arhar)*, *Moong* and *Urad*, respectively. The MSP includes a bonus of ₹ 425/- per quintal in each commodity. Government has also declared a bonus, over and above the MSP of ₹ 200/- per quintal for *kharif* pulses of 2015-16 season and a bonus of ₹ 75/- per quintal for *rabi* pulses of 2016-17 marketing season. A substantial rise in annual compound growth rate of MSPs of pulses is also recorded, which is attracting farmers for wide scale adoption of pulses as major crops. Government has also developed a more transparent and beneficial purchase policy for pulses. Government has given clear directives that procurement is to be done under Price Support Scheme, if market prices are below MSP and under Price Stabilization Fund, if prices are above MSP.

To safeguard interest of consumers, Government has enabled a Price Stabilization Fund with a corpus of ₹500 core with the objective to regulate and control market prices of volatile commodities, such as pulses, onion and potatoes. It has been observed that prices of these commodities skyrocket whenever supplies fail to meet the domestic demands. This unique fund provides interest free advance working capital assistance to States and control Agencies for undertaking market interventions to control market prices. Recently, Government has notified rules for controlling and fixing market prices of essential commodities by the Government authorities, which was earlier regulated by the market forces alone. Moving ahead in this direction, Government has also approved creation of a buffer stock of 1.5 lakh metric tonnes of pulses for which procurement and storage has already begun. Under the buffer stock or store of 45,000 metric tonnes of *Tur*; 5,000 metric tonnes of *Urad*; 80,000 metric tonnes of *Chana* and 20,000 metric tonnes of *Masur* will be maintained

either through procurement or imports. If market prices rise due to shortage of pulses in the market, Government will release sufficient quantities in the market to regulate the volatile situation.

Oils and Oilseeds

Edible oils occupy a unique place in Indian society, culture, dietary patterns and economy of the country. According to 'VISION - 2015' document of ICAR - Indian Institute of Oilseeds Research, Hyderabad, India is one of the largest vegetable oil economies in the world next to USA, China, Brazil and Argentina. Due to diverse agro-climatic conditions and geographical locations, farmers are able to grow all the nine annual oilseeds viz. groundnut, rapeseed - mustard, soybean, sunflower, sesame, safflower, niger, castor and linseed. Among these, castor and linseed oils are chiefly used for industrial and other applications. In India, oilseeds are the second most important crop after cereals sharing 14 per cent of the country's gross cropped area and accounting for nearly 3 per cent of the gross domestic product (GDP). Value wise, oilseeds constitutes nearly 6 per cent of the value of all agricultural products. India grows oilseeds on an area of nearly 27 million hectares with productivity of 1108 kg per hectare for the quinquennium during 2013-14. Consumption / demand of vegetable oils is increasing steadily because of the lifestyle changes in dietary pattern and increasing per capita income. According to estimates, to meet the per capita demand of nearly 17 kg per year, India will require 28.51 million tonnes of vegetable oils in 2050. In other words, country will have to produce about 94.94 million tonnes of oilseeds by 2050 from the existing production of 32.75 million tonnes to achieve near self-sufficiency in oilseeds. India needs a three-fold increase in the oilseeds production in the next nearly 35 years. Interestingly, India is also largest cultivator of oilseeds in the world and paradoxically meets into more than 50 per cent requirement through imports from various countries.

Like pulses, oilseeds also face severe challenges in terms of climatic stresses and unfavourable farming conditions, oilseeds cultivation is mainly undertaken on marginal land by resource poor farmers who are generally reluctant to provide necessary inputs for increasing the productivity.

Nearly 82 per cent of the oilseeds area fall under rainfed farming where climatic vagaries cause severe damage to crops. Studies have indicated emergence of biotic threats (diseases) which have the potential to disrupt the production patterns and regional crop preferences in a significant manner. The overall efficiency of procurement sector is also low affecting yield of edible oils from oilseeds crops. Market conditions are also not very encouraging for farmers and entrepreneurs.

Mission on Oilseeds

Present Government has launched many initiatives and took various innovative steps to enhance production and productivity of oilseeds crops.

Government has strengthened **National Mission on Oilseeds and Oilpalm** by allocating ₹3507 crore during the on-going 12th Plan period. Previously, the Mission was operative only in 14 States, but now its activities have been extended to 24 States. The Mission aims to increase seed replacement ratio with focus on varietal replacement by including high yielding and high quality varieties. Irrigation coverage under oilseeds is to be raised from 26 per cent to 36 per cent for increasing productivity. Efforts have been intensified to diversify area from low yielding cereal crops to oilseeds crops and inter-cropping of oilseeds with cereals/pulses/ sugarcane is also being promoted. Scientists have advised rise of fallow land after paddy/potato harvest for oilseeds farming to increase the area under oilseeds crops. To address the issue of quality seed supply of improved varieties, Mission is acting vigorously through technical support of ICAR Institutes and State Agricultural Universities. In fact, Mission is being implemented through active involvement of all the stakeholders. The centre and State are bearing costs in the ratio of 75:25.

A substantial portion of our requirement of edible oils is met through import of palm oil from Indonesia and Malaysia. In India, oil palm is a new crop but holds great promise due to its highest vegetable oil yielding capacity. Besides, oil palm is a perennial crop with lot of potential for area expansion under Indian conditions. Hence, the Mission has made special efforts to make available quality planting materials and provide support for

irrigation and proper management. Tree-borne oilseeds, like sal, mahua, kokum, olive, karanja, jatropha are also being supported for cultivation under the Mission.

Like pulses, Frontline Demonstrations in oilseeds have been initiated involving 300 KVKs across the country. More than 44,000 demonstrations were conducted covering nearly 18,000 hectare area during 2015-16. More than 24,000 demonstrations covering nearly 60,000 hectare area have been planned for 2016-17 and rural youths will also be involved in the process. Farmers are realizing potential of oilseeds crops through these demonstrations and are adopting these remunerative crops in large scale. In addition, Government has raised MSPs of *kharif* oilseeds for 2016-17 season to make the crops more remunerative. Now MSP of groundnut-in-shell stands at ₹ 4,220/- per quintal which includes ₹ 100/- as bonus. Similarly, MSPs of soybean, sunflower seed, niger seed and sesamum have hiked to ₹ 2,775/-, ₹ 3,950/, ₹ 3,825/- and ₹ 5,000/- per quintal respectively including bonus.

Farmers' Welfare

Present Government has launched a number of schemes for the welfare of farmers by increasing profitability of agriculture through policy initiatives. These schemes also helping pulse and oilseeds farmers to raise their income level by increasing field production and productivity. 'Pradhan Mantri Fasal Bima Yojana' promises security of income to farmers despite natural vagaries at a very nominal premium. Similarly, e-VAM, a panIndia electronic trading platform assures high income to farmers through a transparent process. 'Pradhan Mantri Krishi Sinchai Yojana' is continuously expanding irrigation facilities to newer areas and also helping increase irrigation efficiency by introduction of micro-irrigation techniques. A comprehensive and nation-wide soil health card scheme is helping farmers to increase land fertility and productivity. All these schemes, initiatives, programmes and activities are helping India more towards self sufficiency in pulses and oilseeds.

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