

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE (SHRI GAJENDRA SINGH SHEKHAWAT): (a) and (b) NITI Aayog had constituted four Task Forces under the 'Cleaner Air Better Life Initiative. Task Force on biomass management is one of it. However, the report of the Task Force is yet to be finalized.

(c) The Government has prepared and circulated National Policy for Management of Crop Residues (NPMCR) - 2014 to all the States/Union Territories and advised the State Governments from time to time to reduce the burning of crop residues. Government is also providing financial assistance to State Governments of Haryana, Punjab, Uttar Pradesh and Rajasthan for providing assistance to farmers to purchase identified machineries *i.e.* happy seeder, rotavator, zero till seed drill, straw reaper, rake, paddy straw chopper, shredder, mulcher, loose straw chopper, baler at subsidized rates under Sub-Mission on Agricultural Mechanization (SMAM) for reducing crop burning. Besides, States can support farmers for farm machineries including happy seeder under Rashtriya Krishi Vikas Yojana (RKVY) with the approval of State Level Sanctioning Committee (SLSC) under the Chairmanship of Chief Secretary of the State. In addition, State Governments can take suitable measures for creation of capacity building, organisation of Kisan Goshthies and spreading awareness through electronic & print media among the farmers for reducing crop burning.

Indian Council of Agricultural Research (ICAR) has recommended various technological interventions like *in-situ* incorporation of crop residue through conservation agriculture practices, rapid composting of crop residue using microbial consortia, production of bio gas, mushroom cultivation, preparation of feed for livestock, production of bio-fuel and biochar for scientific crop residue management in the country.

Development of technologies for agricultural growth

†2094. SHRI MEGHRAJ JAIN: Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a) the details of new technologies being developed in the country for growth of agriculture and to double the income of farmers;

(b) whether Government has received suggestions from different States in this regard, if so, the details thereof; and

(c) whether Government has fixed any target in this regard so far, if so, the details thereof?

†Original notice of the question was received in Hindi.

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE (SHRI GAJENDRA SINGH SHEKHAWAT): (a) The new technologies developed by Indian Council of Agricultural Research (ICAR) for growth of agriculture and to double the income of farmers during recent years are enumerated under:—

- The ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technology development that has enabled the country to increase the production of food grains by 5 times, horticultural crops by 9.5 times, fish by 12.5 times, milk 7.8 times and eggs 39 times since 1951, thus making a visible impact on the national food and nutritional security. The research efforts of the institutes/Centres/AICRPs have led to development and release of 672 high yielding, stresses (biotic & abiotic) tolerant varieties/hybrids in different field crops for cultivation under different agro-climatic conditions during 2014-2017. Approximately, 350514 quintals of breeder seeds of improved varieties of field crops and 18.5 lakh grafted plants, 12 lakh rooted cuttings and tuber crops, 90 tonnes of breeder/truthfully labelled seeds of vegetable crops, 5500 tonnes of breeders seed of potato and tropical tuber crops were produced and distributed during 2014-15 to 2016-17 for sustaining the effective seed chain in the States. These varieties and improved management practices are contributing significantly towards increasing production and productivity of field crops. The production of total food grains for example increased from 252.02 million tons in 2014-15 to 275.68 million tons in 2016-17. Commodity wise, production of rice increased from 105.48 million tonnes in 2014-15 to 110.15 million tonnes in 2016-17, wheat production increased from 86.52 million tonnes in 2014-15 to 98.38 million tonnes in 2016-17. Similarly, the improved varieties and technologies in pulse production developed by ICAR contributed towards record production of pulses which increased from 17.15 million tonnes in 2014-15 to 22.95 million tonnes in 2016-17. In Horticulture, the vegetable production increased from 166.6 million tonnes in 2014-15 to 176.2 million tonnes in 2016-2017 and the production of fruits recorded increase from 89.5 million tonnes in 2014-15 to 93.7 million tonnes in 2016-2017.
- During the last 3.5 years ICAR developed 13 improved poultry and pig varieties/breeds including 4 varieties of backyard poultry; Kamrupa in Assam, Narmadanidhi in MP, Jharsim in Chhattisgarh and Himsamridhi in HP; 8 pig varieties: HD-K75, Rani and Asha in Assam; Jharsuk in Jharkhand; Mannuthy

White in Kerala; Lumsniang in Meghalaya; TANUVAS KTM Gold Crossbred Pig (Large White Yorkshire x Desi) in Tamil Nadu and "SVVU-T 17 Crossbred Pig", (Large White Yorkshire x Desi) in Telangana, besides one prolific and high yielding sheep breed 'Avishan' in Rajasthan were developed by ICAR.

- To increase productivity, reduce cost of cultivation, reduce drudgery, improve value addition, conserve resources and provide alternate means for energy generation through improved farm mechanisation during the last 3 years, ICAR developed 72 new farm equipment/machines/gadgets and 34 new products/process protocols and supplied over 16500 prototypes of agricultural machinery to farmers/entrepreneurs. Due to these efforts steady growth has occurred in adoption of efficient manually operated tools, animal operated implements, and equipment operated by mechanical and electrical power sources in the country. ICAR trained 710 rural youth for establishing Custom Hiring Centres in different parts of the country out of which 652 entrepreneurs established Custom Hiring Centres. ICAR equipped 194 start-up companies and agri-entrepreneurs by providing necessary training and skills to start their new agri-ventures.
- ICAR has developed and validated 623 district contingency plans and conducted skill development programs for 40.9 lakh farmers. Mridaprarikshak a minilab for soil analysis developed to support Government initiative on Soil Health Card. ICAR has also developed 45 Integrated Farming Systems (IFS) models in 23 States and 1 Union Territory covering all the 15 agro-climatic regions of the country. These models were also tested and further validated in the fields of 1250 farmers each under various different agro ecologies covering 23 States of the country.
- The breeding and seed production technologies were developed for 9 food fish species, developed technology of marine cage farming and its dissemination through over 1050 cages principally in Gujrat, Maharashtra, Karnataka, Kerala, Tamil Nadu and Andhra Pradesh Technology were developed and commercialized four feeds for different life stages of important fish and shrimp species of the country. Technology for breeding and seed production of 9 ornamental fishes and 5 high-value compounds and nutraceuticals for human health were developed.
- To achieve the target of doubling farmers income by 2022, the Government of India is focusing on a seven point strategy which include; giving special

focus on irrigation with sufficient budget, with the aim of "Per Drop More Crop", provision of quality seeds and nutrients based on soil health of each field, large investments in Warehousing and Cold Chains to prevent post-harvest crop losses, promotion of value addition through food processing, creation of a National Farm Market, removing distortions and e-platform across 585 Stations, introduction of a New Crop Insurance Scheme to mitigate risks at affordable cost and promotion of ancillary activities like poultry, beekeeping and fisheries. A committee has been constituted by the Government to examine issues relating to doubling of farmers' income by year 2021-22. As a result of deliberations in DFI committee, various steps have been taken by the Government which focus on the creation of institutional framework mechanism, introduction of market reforms, APLM act, promotion of contract farming and the development of the road-map for pulses production besides creation of dedicated micro-irrigation fund with initial corpus of ₹5000 crores through NABARD, computerization and integration of all 63,000 functional PACS with core banking system to be supported through NABARD and creation of a corpus fund of ₹ 8000 crores for dairy processing and infrastructure development over the next 3 years. Sufficient focus has also been given on dairy and fisheries sector. The Ministry of Agriculture and Farmers Welfare with support from NITI Aayog is focusing on two other important reforms. These are: Adoption of Model Land Leasing Law by the States/UTs. A draft law has been shared by NITI Aayog and Liberalise current regulatory regime for felling and transit of trees grown on non-forest as well as private land. This will promote agro-forestry and diversify farmers' income basket, besides providing income security against vagaries of monsoon. After series of deliberations, considering the various factors such as lower-return, Gross Value Added (GVA), fluctuation in market, growth rate etc., the first four Volumes of the draft Reports "Strategy for Doubling Farmers' Income by 2022" prepared by the Committee have been uploaded on the website of the Department (<http://agricoop.nic.in/doubling-farmers>) for seeking suggestions from public. To complement these efforts, ICAR has also constituted state specific coordination committees to develop strategy documents for doubling farmers' incomes by 2022.

(b) and (c) Based on the suggestions and requests received from various State Governments, ICAR has strengthened the Krishi Vigyan Kendras (KVKs) and created a strong network of 681 KVKs at district level for delivering the benefits of research

to the farmers. During the last three and half years (2014-17), the KVKs conducted 97188 On Farm Trials and 3.21 lakh Front Line Demonstrations at farmers' fields; trained 40.90 lakh farmers and 4.48 lakh extension personnel; produced 8.79 lakh quintals quality seeds of different field crops, produced and distributed 12.52 crore planting materials of different horticultural crops and facilitated participation of over 3.93 crore farmers in various extension activities.

The KVKs tested 13.36 lakh soil samples, distributed 10.6 lakh soil health cards and provided agro-advisories on plant protection, weather information, market related information, animal husbandry, fisheries, etc. on the mobile phones of 3.95 crore farmers. Efforts are being made to reach out to still higher number of farmers and for this purpose, technical collaboration with IT companies like TCS is being established by the council. Similarly centres of AICR Projects located at various locations *viz.* SAUs/SVUs/NGOs etc. include the local problems for the development of new varieties, agricultural implements and new technologies. These programmes have also benefited the farmers in terms of increased crop production and improved farm income.

Economic condition of farmers

†2095. SHRI MOTILAL VORA: Will the Minister of AGRICULTURE AND FARMERS WELFARE be pleased to state:

(a) whether it is a fact that the economic condition of farmers is not improving due to non-payment of fair price for their produces apart from lack of rain and good quality seeds, etc.;

(b) whether the farmers could not get even the cost price of their potato crops last time around and they got wasted;

(c) whether owing to this reason, the sowing of potatoes during current season has been quite less; and

(d) the steps taken by Government to check exploitation of farmers by the traders, if not, the reasons therefor?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE (SHRI GAJENDRA SINGH SHEKHAWAT): (a) Government has increased the Minimum Support Prices (MSPs) of mandated agricultural crops for 2017-18 season on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP), after considering the views of State Governments, Central Ministries/

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