

Farmer FIRST Annual Progress Report : 2017-18

Farmer FIRST Programme

There are 12 ICAR and SAUs institutes from Delhi, Haryana and Rajasthan states under Farmer FIRST Programme. Total 28 villages have been selected involving 8716 farm families under this flagship programme. The consortia team consisted of IASRI, NCAP, DKMA and NAARM to study the impact assessment of the programme. The physical and financial progress of these partner institutes was reviewed at New Delhi in Annual Review Workshop held during 21-22 February, 2018. Total budget of Rs 438.18 lakh was sanctioned during 2017-18 for Institutes under ICAR-ATARI, Jodhpur. The institute-wise major achievements are given as under:-

Delhi State

IARI New Delhi: It has covered all the four modules under FFP implemented in 3 villages involving 1105 farm families. Under crop based modules new crop varieties were introduced in all the three villages in wheat, paddy, mungbean and pigeonpea which were well received by farmers.

Wheat: A new variety HDCSW 18 (released in 2015) on an average was yield 54q/ha as compared to HD 3086 which yielded up to 52 q/ha. Another variety HD 3059 (Late sown) could yield up to 44 q/ha. All the varieties were well accepted by the farmers due to their special attributes like heat tolerance, disease resistance and ability to sustain under limited irrigation and abiotic stress.

Paddy: PB 1637 a basmati paddy variety gave highest yield (44 q/ha) followed by PB 1121 (39.15 q/ha) and PB 1509 (short duration requiring less water) yielded 38 q/ha. Among the basmati varieties, PB 1121 could fetch highest market price of Rs 3200 per quintal. Another non-basmati paddy variety Pusa 1612 (disease resistant) yielded 40 q/ha.

Mungbean: Pusa Vishal (resistant to YMV) was grown in summer which yielded 8.5 q/ha as compared to local check variety. **Pigeonpea:** Pusa 992 (duration 140 days) yielded 13.00 q/ha; while Pusa 991 (duration 140 days) yielded 12.5 q/ha. Both varieties were accepted well by the farmers, as the grain were medium bold and sustained in rainfed saline soils.

Horticulture based technology modules: Mango and grapes orchards were established. Marigold, as a cash crop was also taken up by few farmers. Nutritional kitchen garden was demonstrated to selected households. Improved varieties of Garden Pea, okra, bottle gourd were also demonstrated.

Mango and Grapes: Two each high-density mango orchards of 25 and 35 mango saplings and grape gardens were set up with 20 and 25 grape were established. Mango and grapes saplings were also planted in all nutritional kitchen gardens.

Kagzi lime: One plant was planted in each of 25 nutritional kitchen gardens.

Marigold: Demonstration of Marigold variety Pusa Narangi Gainda (large sized saffron coloured flowers) was organised at the fields of 20 farmers in 0.5 acre each. Farmers received average net profit of Rs 46950/acre with CB ratio 1:3.84.

Nutritional kitchen garden: In order to boost nutritional security at farm household level, 120 farm families were encouraged to establish nutritional kitchen garden in their farmsteads with Palak, Methi, Brinjal and Okra in addition to saplings of fruit trees- Mango, Grapes & Kagzi lime.

Vegetables cultivation: About 335 farmers were encouraged to cultivate vegetables for marketing in Palwal and Faridabad. Four vegetables Garden Pea, Carrot, Bottle gourd and Mustard leaf vegetables (Sag Sarson). Farmers earned higher incomes and the B:C ratio; Garden Pea is 1:3.14, that of Bottle gourd is 1:3.13 that of Carrot is 1:3.41.

Livestock Module: Twenty farmers were encouraged to supplement mineral mixture to their cattle and buffaloes. Deworming was also done.

Enterprise: Nursery of Papaya and Tomato cherry were raised and sold to other farmers in two insect proof net-house. Two farmers raised off-season Muskmelon in off season and could realize a B:C ratio of 1:3.5.

Integrated farming system: IFS is established in one-hectare area in which a fish pond was dug, crops and fruit tree system was raised. Mango and Grapes were planted around the boundary. Cash crops like sweet corn and baby corn came up well. Vegetables crops Okra, Onion and Bottle gourd were also grown.

Drudgery Reducing Farm Implements: To reduce drudgery in weeding, four wheel weeder, wheel hoe was demonstrated and these implements were well accepted by the farmers. Safety device was also introduced in 15 chaff cutters which was also well received by farm women and farm families.

Capacity building, scientist-farmer interface and group mobilization. training Programme and scientist-farmer interface were organised for knowledge sharing and impacting skills in biofertilizer, value addition, IFS, drudgery reduction, health care of cattle and buffaloes and group mobilization for farmer producers' organization and publications were carried out successfully. Budget allotted was Rs 44.18 lakh for the Financial Year 2017-18.

NCAP, IASRI, DKMA, NAARM: The consortia team under the leadership of NCAP has identified 6 common interventions among 51 institutes and 26 different technologies for economic assessment and their validation in the concerned areas using different methodologies. IASRI has developed the webpage of FFP (<http://ffp.icar.gov.in>) at New Delhi and all the partner institutes have been given login ID and Password for submitting the on-line progress report. DKMA has compiled the brochure and graphical abstracts of different modules being implemented by the partner institutes under Farmer FIRST programme. NAARM Hyderabad has completed all the training and capacity development programmes at 5 different locations (New Delhi, Bhopal, Dehradun, Lucknow, Chennai) for the PIs and Co-PIs who are actively involved in implementing the different activities of the programme through their institutes.

Content management platform enabling off and online access : A web portal of the project has been designed and developed. It has been hosted at ICAR Data Centre, ICAR-IASRI, New Delhi. The portal can be visited through URL <https://ffp.icar.gov.in/>. The developed system provide information about FFP programme, projects details, interventions, news and highlights, achievements, success stories, latest publications, FFP in media along with image gallery. This system can facilitate to disseminate the knowledge generated under FFP projects to the farmers and other stakeholders. The developed system has the potential to impart agricultural knowledge which is relevant, searchable and up-to-date. Role-based user module has been developed for PI(s) of the project, ATARI(s), ICAR Headquarter and Administrator. PI can upload and edit information of the respective project. ATARI user can monitor the progress (based on the information uploaded by SAUs/Institutes under its zone) of the projects. ICAR Headquarter can monitor the progress of all projects under FFP. Login credentials for all 52 PIs and ATARIs have been created and communicated to the respective stakeholder.

Functionality has been created for project PI to add intervention, budget of project and event/training programme organized under the project. Developed the functionality to upload images, videos and publications by selecting the category viz. event, intervention and others activities under the respective project. Report module has been

developed. The user can view ATARI and organization wise report. Public user can view all the project information except budget. Functionality for monitoring of projects has been developed for ATARIs, ICAR Hq and Admin. Portal has been enriched with information such as news, achievements, publications and success stories.

Training Programme for Skill Development: Training cum Workshop on Methodological framework for implementation of FFP have been jointly organized by ICAR-NAARM, ICAR-NIAP, ICAR-IASRI and ICAR-DKMA.

ICAR-IISS, Bhopal during 18-21 September, 2017

ICAR-CISH, Lucknow during 03-06 Oct., 2017

TANUVAS, Chennai during 10-13 Oct., 2017

ICAR-IARI, New Delhi during 23-26 Oct., 2017 and

ICAR-IISWC, Dehradun during 06-09 November, 2017.

In these workshops, SRS and probable input forms for the portal have been presented and discussed with Farmer FIRST project PIs and Co-PIs and the feedback has been incorporated in designing/developing the portal accordingly.

Haryana State

CSSRI Karnal: It has covered all the four modules under FFP implemented in 5 villages involving 3167 farm families. Under NRM module recharge structures have successfully improve the water table and ground water quality. Reclamation of sodic soils and neutralization of RSC waters through amendments (gypsum) /pressmud) either individually or in combination resulted higher rice productivity as compared to crops irrigated with available RSC waters cultivated on sodic soils as such. Varietal intervention through inclusion of wheat variety KRL 210 proved an important strategy to counter yield reduction under salty environments. Yield gain with Pusa 1121 over CSR 30 a sharp decline observed with increasing soil alkalinity.

Diversifying Rice-wheat system with Rice-Pea-Okra/Onion found suitable for this area. Rice residue management was effective using mulcher/ straw chopper. Animals have been selected for amelioration of thermal stress effects by using herbal/non-herbal feed supplements on milk, growth and physiological parameters. One mobile app has been developed for the dissemination of farmer friendly technologies under salt affected agro-ecosystems by CSSRI for the farming community. A three days training programme on "Importance of Spray Technique in Crop Production" was organized at Krishi Vigan Kendra, Kaithal during September 6-8, 2017 in which 57 farmers participated from Farmer FIRST adopted villages. Another three days Skill Development Programme on "Marketing of Agricultural Produce" was organized at ICAR-CSSRI, Karnal during 26-28 February 2018 in which 29 farmers from FFP adopted villages participated. A field day on residue management in rice was organized in village Kathwar at farmer's field on October 2, 2017 with the aim to sensitize the farmers about the ill effects of residue burning on soil health and environmental quality. Budget allotted was Rs 39.26 lakh for different activities during the Financial Year 2017-18.

NDRI Karnal: It has covered all the four modules under FFP implemented in 5 villages involving 832 farm families. Under crop module sensitization of farmers regarding saving of critical inputs and alteration in the production system through direct seeded rice technology which enhanced yield up to 16 to 18q/ha. Farmers were encouraged to adopt non-monitory inputs/ on farm inputs at their own end. Integration of chemicals such as insecticides and fungicides were suggested to handle diversified pest control in paddy crop which produced paddy up to 22 to 25q/ha. Effective weed control measures in wheat using Pre-emergence herbicide application of Pendimethelene followed by just after sowing (less than 3 DAS) application of Stomp @ 1.25 lit/acre for higher productivity has been adopted by farmers.

Growing Dhaincha crop provided leguminous fodder @160 q/ha. In addition by incorporating dhaincha into soil has reduced the pH and EC and increased organic carbon. NDRI has developed SMS web portal to provide the SMS services to the farmers of project area. Under enterprise module milk processing units have been developed for additional income generation. Under fruit cultivation supply of Mango 115 plants of Mallika variety and 253 plants of Amarpali variety saplings were provided to 30 farm families and plant survival is 70% in field conditions. Under livestock module green fodder production farmers were able to get round the year green fodder to the tune of 900-1050 q/ha in maize-oat and 1190-1340 q/ha in maize-berseem rotation at farmers field. Endo and ecto-parasite control camps were organized in the project area. Feeding of optimum quantity (40-60g/animal/day) of good quality mineral mixture + vitamin supplementation per animal initiated in adopted project village. Oestrus Synchronization protocol applied was observed as 76% success which is very much encouraging and proved to be a set tool to tackle the existing infertility problem in dairy animals. Other modules like content mobilization, capacity development, institutional linkages and publications were carried out successfully. Budget allotted for different activities was Rs 35.15 lakh during the Financial Year 2017-18.

CIRB Hisar: It has covered only two modules under FFP implemented in 3 villages involving 427 farm families. Under crop diversification three women farmer have started small units of bee hives (10 hives) at their own having additional source of income through apiary unit. Under livestock module Micronutrient Supplementation in participatory mode implemented in field livestock and 72% of Best buffaloes conceived within 60 days of calving. For breed improvement promising progeny with AI from progeny tested/ elite bulls initiated in field and 66% animals improved significantly. Other modules like content mobilization, capacity development, institutional linkages and publications were observed to be less satisfactory. Budget allotted was Rs 22.12 lakh for the Financial Year 2017-18 to carry out different activities.

CCSHAU Hisar: It has covered all the four modules under FFP implemented in one Gurana village involving 1000 farm families. Under crop module rice-wheat (WH-1105) cropping system of zero tillage has been popularized. Pre-emergence application of pendimethaline @ 3.75 l/ha + need based application of post-emergence herbicides proved economical (with B:C ratio 2.15). Under varietal performance wheat varieties WH-1105 HD-2967 performed very well with highest grain yield 55.25 and 56.0q/ha, respectively. Insect-pest and disease management in mustard using first two spray of Neembicidine 0.03% followed by spray of Dimethoate 30 EC @ 350 ml/ac has been found effective and economic.

Under horticulture module 19 demonstrations of 0.2 ha each of promising guava cultivar Hisar Safeda were given at 19 farmers' fields. Promotion of bee keeping as subsidiary farm enterprise has been started through 60 colonies. Supplementation of ration with mineral mixture in milking buffaloes has been initiated in 500 farm animals. Other modules like content mobilization, capacity development, institutional linkages and publications were carried out successfully. Budget allotted was Rs 45.40 lakh during the Financial Year 2017-18 to carry out different module-wise activities.

Rajasthan State

CAZRI Jodhpur: It has covered all the four modules under FFP implemented in 4 villages involving 500 farm families. Under crop module in Kharif introduced pearl millet (MPMH-17), moongbean (IPM-2-03), mothbean (CAZRI-Moth-2) and clusterbean (RGC-1033) performed very well. In rabi wheat (Raj-4083, KRL-201) and Cumin (GC-4) have been demonstrated. Under horticulture module round melon and clusterbean showed an impressive yield increase of 33.33% over the local, whereas the snap melon showed 27.58 % yield increase over the existing variety.

The B: C ratio of Tinda was highest (2.62) followed by clusterbean vegetable (2.54) and Snap Melon (1.67). In case of chilli, when compared to the local, it was found that the demonstrated green chilly yield was increased by 102.6 %. Distribution of 680 perennial fruit saplings of Ber and Gunda to enhance additional income per unit area observed a survival rate of ber trees varied from 51 – 53 per cent, whereas it was 92.5 per cent for Gunda.

Under livestock module for breed improvement 15 Marwari Rams have been provided. Feeding of MNFB to cattle and buffalo resulted 5.2% increase in milk yield. Under NRM module issued 250 Soil Health Cards and tested 31 water samples of 250 partner farmers. Provided 15 units of water harvesting structure (Tanka) with micro irrigation system for nutrition security to the farm family along with increased cropping intensity. Introduced fodder production in IFS module using giant hybrid fodder in 10 units. Other modules like content mobilization, capacity development, institutional linkages and publications were carried out successfully. Budget allotted was Rs 24.60 lakh and utilized Rs 9.62 lakh to carry out different activities during the Financial Year 2017-18.

CSWRI Avikanagar: It has covered all the four modules under FFP implemented in 4 villages involving 847 farm families with a total population of 3864 villagers including women and children. Nearly 12% households belong to below poverty line in four villages. Buffalo (39%) is the main species farmers are rearing followed by sheep (26%), goats (21%) and cattle (14%) on livestock numbers basis. Land use pattern of the four villages showed that 84% of total land is being used as agricultural land followed by 10% as habitat and remaining 6% as pasture land and other uses. In Rabi season, Mustard is the main crop being sown in 68% of area followed by wheat in 19% of area. In Kharif season, moong is the main crop being cultivated in 37% of the area.

There were 13 sheep flocks in all four villages having sheep in the range of 600 to 900. In lambing season total flock strength went up and after selling of lambs before onset of summer season flock strength went down. Under crop module introduced improved varieties of Guar (RGC-1055), Moong (IPM-02-3), Urd (IPU94-1) and Til (RT-127) for higher production in farmers' fields. In rabi season mustard varieties (Giriraj (timely sowing) and Bharat sarson-1, (late sowing), improved wheat variety (Raj 4079) in project villages have been encouraged and the yield improved significantly.

Vermi-compost units have been started at farmers' fields. Regular and timely vaccination, health examination helped keeping mortality of animals less than 5% and morbidity around 70% annually. Under NRM module village pond deepening and other activities could not be completed. Other modules like content mobilization, capacity development, institutional linkages and publications were observed to be less satisfactory. Budget allotted was Rs 45.68 lakh for the Financial Year 2017-18 to carry out module-wise activities.

AU Jodhpur: It has covered all the four modules under FFP implemented in 3 villages involving 1043 farm families. Under crop module Pearl millet hybrid MPMH-17 recently released by AU, Jodhpur was given to 300 Farmers in the selected Villages. Yield data of demonstrations revealed that this hybrid was found superior over the farmers grown varieties and local pearl millet and gave average seed yield of 20.6 q/ha. Current average price is Rs 14.25/kg farmers are getting net return of Rs 29355/ha under rainfed condition in the fields. It was higher over local cultivar by 18.6 per cent. Pearl Millet hybrid MPMH-17 was found safe from bird damage and it was disease and pest free during the crop pendency. Seed of improved varieties Raj 4083 was given to 50 farmers for raising crop in 0.4ha area. Wheat variety Raj 4083 was suitable for timely sown in irrigated conditions. Farmer got net income of Rs 38287/-only with B: C ratio of 2.09 by the average seed yield of 45.10 q/ha as against seed yield of 37.8 q/ha under local plots. Pusa Mustard 26 was given to 50 farmers in selected village under irrigated flatbed cultivation with small size of holding. Variety was found superior over local cultivar suitable for late sown (November sowing) conditions

and gave average seed yield of 16.04 q/ha. Average increase of 10.7 per cent in seed yield was observed over local mustard.

Under horticulture module new varieties of onion (NHRDF-2 and 3) and carrot (Pusa Rudhira) yield enhanced by 12% over local check. New varieties of Tomato (Arka Raksha) and Chilli (RCh-1) earned more profit to farmers. Temporary insect proof net structures were distributed to 150 farmers in selected village; Tomato and Cabbage seedlings grown found healthy and completely viruses free at the time of transplanting. Value addition in Mint, Nagauri Methi and Rose Flower petals by drying the product in covered shade net of size 4.0X12.5m found beneficial.

Under NRM module Single Super Phosphate application @ 200 kg/ha in 0.4ha area of carrot crop increased carrot yield by 17-22 % over untreated plots. Use of Hydrogel and Aqua-sorb for moisture conservation in pearl millet crop gave seed yield of 23.9 q/ha under rainfed condition which was 14.3 per cent higher over untreated plot under similar condition. Under livestock module introduction of Azolla 80 farmers were selected for raising Azolla beds of size 10x3.0x1.0 feet and filled with water for balanced livestock feeding. For goat breed improvement 33 farmer were selected for distribution of Sirohi bucks and animal health camp for vaccination were organized at village.

Under IFS Module the vegetable cultivation during Rabi Shri Pukhraj has earned an additional income of Rs 14930 from 0.2 ha of land. The vermi-composting has increased his income by Rs. 4600, sewan and dhaman grass from 0.5 ha land. Vermicomposting practices has reduced wastage of fodder. Azolla is fed to buffalo by which is major supplement protein for the milking animal. (Two Azolla pit of 10x3x1 feet). He is also marketing milk to Jodhpur city where he is getting price of Rs 28/ and Rs34/litre for buffalo's and cow's milk, respectively. The net income of Shri Pukhraj has been increased from Rs 54950/- to Rs 178000/- during 2017-18 by adopting different modules of Integrated Farming System. Other modules like content mobilization, capacity development, institutional linkages and publications were carried out successfully. Total budget of Rs 73.16 lakh was allotted during the Financial Year 2017-18 to carry out different project activities.

FFP Project Photos

