

Showcasing information outcome of the Farmer FIRST Programme

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Farmer FIRST Programme—Farm, Innovations, Research, Science and Technology (FIRST), brings the scientists and lab in the fields of farmers, putting farmers in the centre of the research programme, was initiated by the ICAR in 2016 to double the farmers' income by 2022. It will be achieved with focus on innovations, technology, feedback, multiple stakeholder participation, multiple realities, multi method approaches, vulnerability and livelihood interventions.

Key word: Farmer FIRST, Graphical abstract, Portal, Showcase information, Technology map

INDIAN agriculture has an important place in the world agriculture, being the leading producer in pulses, jute, vegetables, fruits, rice, wheat, cotton, sugarcane, spices, milk, fish, poultry, etc. With \$ 375.61 billion, India is the world's third largest economy after the US and China. The economic contribution of agriculture and allied sectors like animal husbandry, forestry and fisheries, accounted for 15.4% of the GDP in 2017.

Indian economy has attained food security through the intervention of better technology, quality seed, fertilizer, irrigation, subsidies on farm inputs, public investment and institutional intervention. However, pressure continues to be on agriculture to surpass the increasing demand of the population and ultra-vegan consumers in the modern world. On the other hand, farmers who sweat their life in the fields continue to be marginalized and dividend from agriculture has not been able to penetrate in their lives.

To revive the farming community, the Government has taken up many initiatives to increase the livelihood and sustainability that may serve a breakthrough in the agricultural

economy. One such ambitious initiative is the Farmer FIRST Programme (FFP) that envisioned doubling the income of the farmers by 2022. FFP is initiated by the ICAR in 2016, keeping the farmers in centre stage in research and technological intervention. FFP is a platform where direct collaboration with farmers and scientists is possible in understanding the farmers' problems, conducting experiments and management in farmers' conditions for the right approach to the problem, and to bring the right technological interventions, which are a two-way approach in understanding and solving the first hand problems, bringing sustainability and doubling the farmers' income.

Structure of Farmer FIRST Programme

The programme covers agriculture and allied sector which is largely grouped into 6 modules, i.e. crops, horticulture, integrated farming, natural resource management, livestock and fisheries, and capacity building of stakeholders. Implementing country wide, this programme tries to reach out in all the corners of the country, initially starting with the

55 ICAR-Institutes/ Universities, covering 42 thousand farm households from 265 villages as a core study group. Over time the programme continues to expand and includes more Institutes/ Universities and more core farming study groups.

Structurally, the FFP is grouped into 11 Agricultural Technology Application Research Institute (ATARI) zones, which is at the top of the hierarchy that monitors the project activities. Within the ATARI, 51 ICAR-Institutes/Universities work at the ground level, directly working together with the farmers at the fields in understanding the requirements, nature of problems and trying to implement the right technological intervention using all the knowledge of farmers and scientists. And one institute that consists of 4 project partners (Institutes-Directorate), coordinates with the 51 ICAR-Institutes/ Universities in distributing information; training the Institutes/ Universities on the methodology of FFP; collecting study inputs, assembling, analyzing the information and impact assessment of the FFP on the farmers and Indian economy; and showcasing the outcome of the programme.

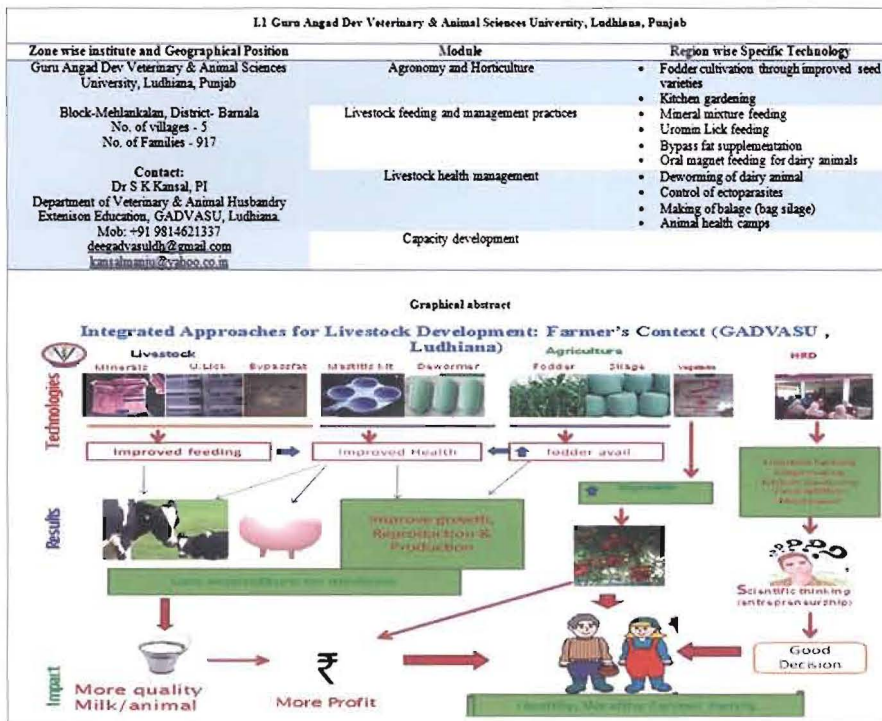


Fig. 1. Brochure and graphical abstract

ICAR-Directorate of Knowledge Management in Agriculture (DKMA) is the Directorate that puts all the information and output of the FFP to showcase it to all the stakeholders and concerned persons through media, internet (<https://ffp.icar.gov.in/>), and publication that could help in improving the quality of farmers' life and guidelines for the interested scholars and policy makers.

Showcasing information outcome of the FFP

ICAR-DKMA has taken many initiatives since 2016-17 on the programme. The details of the initiatives are discussed here.

Trainings on the FFP methodology: The trainings were given to the principal investigators (PI), Co-PI at various institutes in the early stage of the programme during 2016-17. The training includes:

Information flow chart: The training was primarily given to the concerned Nodal officer of each Centre /Project PI/ Co-PI, authors and web administrator on how to draft the information inputs of the FFP. The form of the draft was circulated to all the ICAR-Institutes/ Universities.

Brochure: To collect information for all the participatory Institutes/

Universities on their work on the FFP, guidelines on the simple tabular forms as brochure were given to the concern PIs, Co-PIs in various trainings to have uniformity in the work and information collection.

The brochure contains information of the institute at zone wise; geographical position, number of villages and farm families; contact information of the PI; module of practice, viz. crops, horticulture, integrated farming, natural resource management, livestock and fisheries, and capacity building measurements;

and region-wise specific technology intervention.

Graphical abstract: Similar to the information of brochure, graphical abstract is a pictorial presentation of the FFP works. The layout for the graphical abstract was given to all the ICAR-Institutes/ Universities that contained a single, concise, pictorial and visual summary of the main findings of the programme. This could either be the concluding figure or a figure that is specially designed for the purpose, which captures the content of the FFP at a single glance that is concise, illustrative reflection, and visual highlight of the main modules.

Farmer FIRST-Graphical abstract: This is a book of information collected from all the 55 ICAR-Institute/ University on the brochure and graphical abstract of the FFP (Fig. 1). It has information mainly on the modules that ICAR-Institutes/Universities have taken up in the FFP and specific technological intervention to uplift the socio-economic conditions of the farmers. It will help in assessing the different technological interventions for a specific module in various regions in the country and see if the intervention can be applied in another region as well. Since all information of the FFP has been collectively presented in this book, it will be easier to assess the larger picture of the FFP at National level in the course of



Fig. 2. Home page of FFP portal, <https://ffp.icar.gov.in>

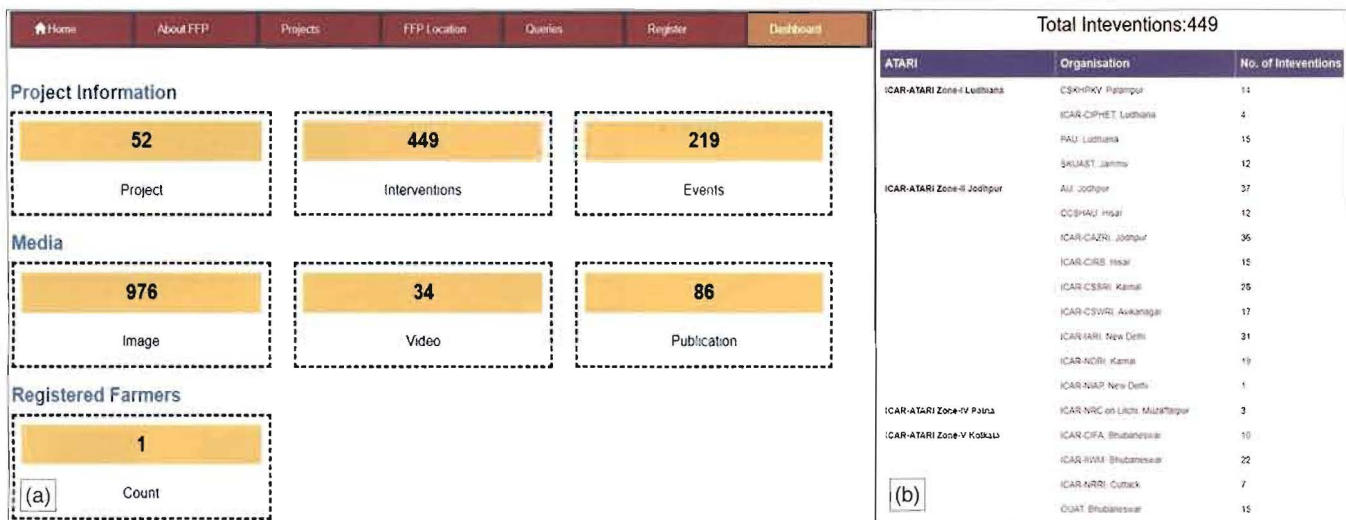


Fig. 3. Dashboard, (a) Page to see the stage of the project, i.e. (b) Details of intervention

examining the impact on the micro and macro scale and to examine if the objective of doubling farmers' income by 2022 is feasible or not.

FFP Portal: The portal (<https://ffp.icar.gov.in/>) has been developed based on 3-tier architecture using the ASP.NET framework 4.5, SQL server 2012 for database, Visual studio 2013 as Integrated Development environment (Fig. 2). It was developed in collaboration with the ICAR-IASRI. It was created with the purpose of connecting all the stakeholders and showcases the information of the outcome of the programme by uploading news and highlights, success story, achievement, publications, interventions, images and videos of all events, trainings, and activities of the FFP. The portal acts as query solver and knowledge disseminator for the stakeholders and anyone interested in the field. Through this portal, ATARIs can also monitor the work of the FFP of their respective

institutes falling in their administrative control.

Query finder: It was created to bridge the gap between scientist-researcher, farmer, administrator, policy maker and another interested person in agriculture. Any interested person can put their query on any area of the field addressing to a particular Institute/University and the answer will be given by experts associated with the FFP.

Dashboard: Detail information on the FFP on the number of project (51), interventions (449), events (219), image (977), video (34), and publications (86) is given in the dashboard (Fig. 3). This page enables the seeker of information immediately to see the stage of the project e.g. a chick to the intervention will show the detail of numbers of interventions according to the ATARI and organisation wise (Fig. 3.b).

Practice of farmers: Many farm practices are with the farmers which

have not been documented and validated. In the FFP, scientists working in the field with the farmers have acknowledged many practices that are with the farmers for ages. Such practices may be confined within few farmers in a place or practiced widely across. Documentation of such practices will enable the other farmers to copy it and on the other hand, science and engineers can intervene to upgrade the farm practice that is drudgery reducing and cost-effective.

The practice of the farmers are documented by the expert scientist with the name of the institute, module of the practice, category, technology innovation in 500 words and contact detail of the institute and farmer (Fig. 4).

Farm innovations: During the FFP project there have been many farm innovations discovered in the fields. It is necessary to document all the farm innovations. This is documented by the FFP institute



Fig. 4. (a) Page of the Practice of farmers, (b) Details of the farm practice that can be downloaded.

Fig. 5. (a) Farm innovation to be filled by the experts, (b) Details of the page that can be downloaded

working with the farmer on the subject, title of the innovation, description of innovation in 500 words, rationality, validation in yes or no, and video of the innovation in a short clip of 2-4 minutes (Fig. 5). Documenting many farm innovations shows that farmers have deep knowledge of their farm practices and many forms continue to evolve in the process.

ICAR technology Map: To locate all the FFP Institutes/ University in a map, images have been put to signify with the work associated with each institute. This map in future will be linked with the websites of all the institutes, and in a click, it will direct to the website of the institute. Putting the entire ICAR institute in a hub of map, it will be easy to locate any institute according to the region and its specialty.

Indian Farming (May and June 2019 issue): Special issue has been put out in an ICAR popular magazine, *Indian Farming* that has been in publication since 1940. This

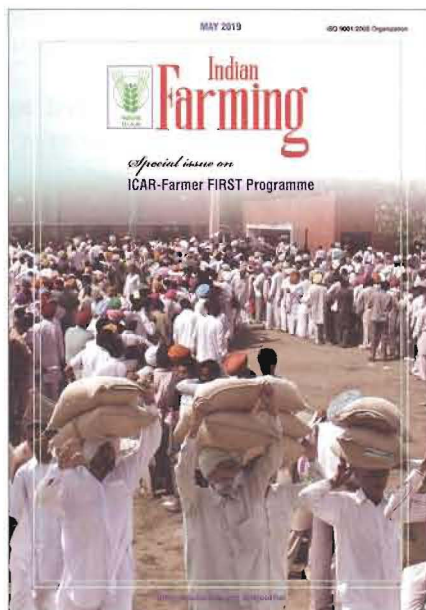


Fig. 6. Cover page of the *Indian Farming*, May 2019, special issue on the FFP

magazine has gained its popularity amongst the students, teachers, research-scientists, farmers, and all interested in Indian agriculture. The magazine covers all areas of the agriculture and allied sector. The

special issue on the FFP was published for two consecutive months in May and June 2019.

CONCLUSION

ICAR-DKMA is in the forefront of the programme in uplifting the socio-economic conditions of the farmers and doubling their income by 2022 by showcasing information of the outcome of the FFP through the media, website, publication, etc. Information showcasing is one of the most effective channels in forwarding the information to the public and the concerned policy-makers. Putting all the information together in one hub enables to assess the outcome far more effectively on macro and micro perspective.

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ICAR New Portals

The Council has created the following portals for effective governance by utilizing the information and communication technology.

- ICAR Data Centre and Unified Communication portals to secure institute information and information transmission.
- ICAR-Enterprise resource planning (ERP) System to this manage the human resource in information of the council including pay roll, finance and budgeting.
- KVK Knowledge Network Portal (<http://kvk.icar.gov.in>) to share basic information and facilities of KVKs with contingency plans, demonstration schedule, and advisories.
- Management System for Post-Graduate Education (MSPGE) enabling academic and e-learning modules while also being a repository of academic records
- E-Samvad, an online interface of the Council to answer citizens queries.
- KRISHI – A knowledge repository portal of digital information pertaining to research experiments, outputs, publications, etc.
- E-Krishi Manch, a dedicated portal for farmer-scientist interaction.
- ICAR FFP Portal (<http://ffp.icar.gov.in>) is a platform to interact with all the stakeholders and showcase the outcome of the programme.