

Report on

Training on Existing Transformative Agriculture Tech, Mobile-based Applications, Innovations and Smart Farming

Raichur

Wednesday, July 20, 2022

Organised by



PUBLIC AFFAIRS FOUNDATION
Partnership for Better Governance

Sponsored by



NABARD

National Bank For Agriculture And Rural Development

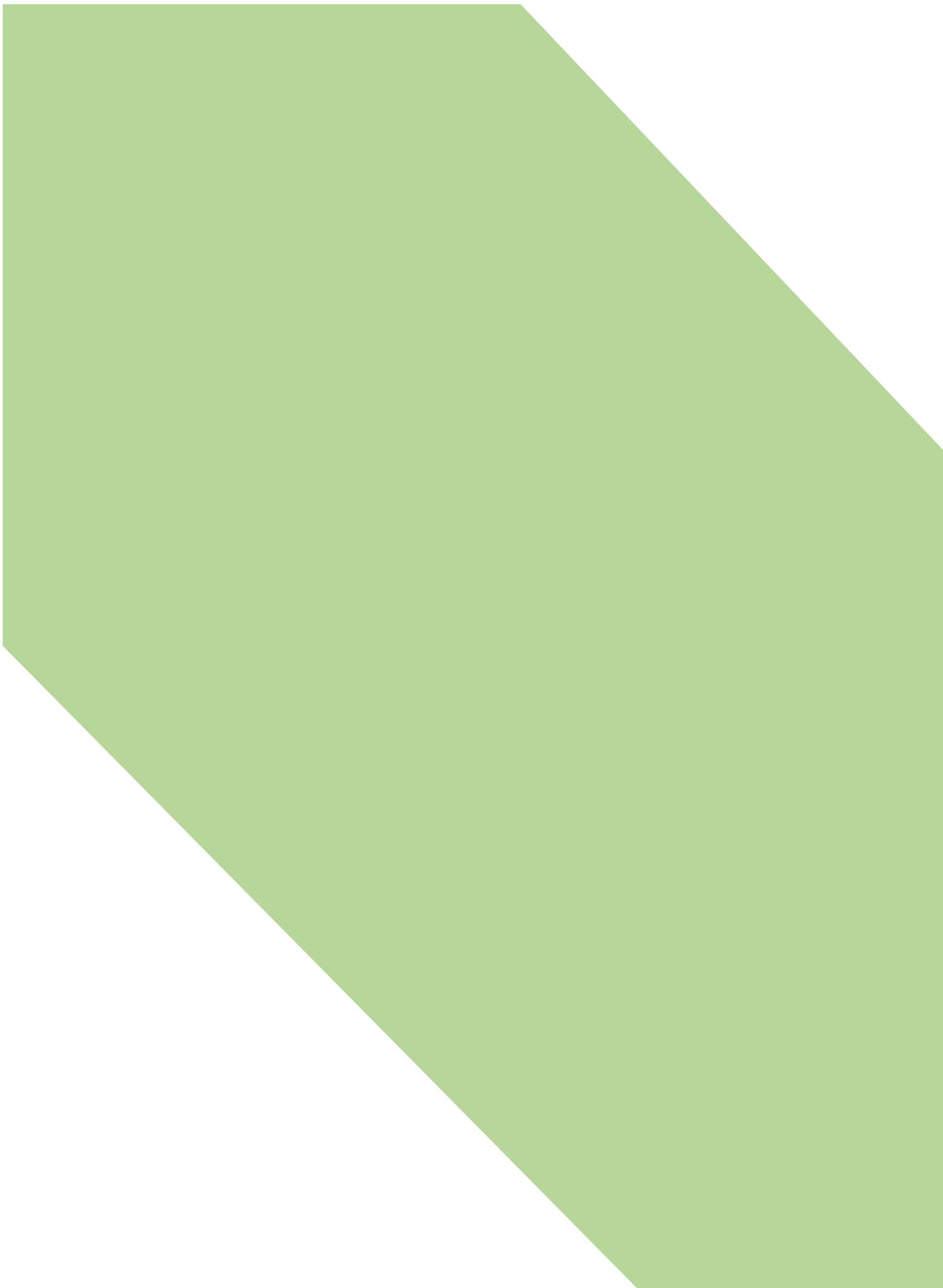


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Background

The Public Affairs Foundation (PAF) was provided funding support by National Bank for Agriculture and Rural Development (NABARD) to conduct a series of training programmes in six districts in Karnataka. The topic for the same is “Training on Existing Transformative Agriculture Tech, Mobile-based Applications, Innovations and Smart Farming”.

The training programme aims to bring together farmers, Farmer Producers Organisations (FPOs) and Experts (scientists & researchers) on a unified platform. This may increase the farming yield and farmers can market value-added products instead of mere raw produce and learn how the latest developments in agri-tech can enable them to enhance their profitability. While FPOs in the state has been constantly conducting similar programmes, the current endeavour is to scale up the initiatives to include branding, marketing techniques by using Artificial Intelligence and Machine Learning techniques.

The main objectives of the training programme are to explore, discuss and proliferate modern transformative, technology, mobile App-based, innovative and Smart Farming techniques among farmers using traditional farming techniques. This is expected to help traditional farmers make a paradigm shift to adopt modern farming techniques. Primarily, the training programme is focused on sharing experiences, active interactions, and providing solutions offered by smart farming. Farmer Producer Organisations (FPOs) have not only been providing farmers with seeds and manure but also training them in the latest farming methods for a few years.

The sixth training was held in Raichur, Wednesday, July 20, 2022 at the ICAR- Krishi Vigyan Kendra, University of Agriculture Science Campus, Raichur. (Refer to Annexure 1 for the Agenda in Raichur Report).

This report provides an overview of the key deliberations from the programme held at Raichur.

Raichur

ICAR - Krishi Vigyan Kendra (KVK), Raichur

Wednesday, July 20, 2022

Discussion Session

Ashwini Venkataram, Programme Manager (Finance), PAF who was the Master of Ceremony welcomed the gathering to the training programme.

The training programme began with the participants introducing themselves. One of the participants said that the Raichur region was mainly known for maize and cotton cultivation and there were around 500 Farmer Producer Organisations (FPOs) in the district. Another FPO member said that his FPO was making initial attempts to market the products. Yet another FPO member said that there were 350 members in the FPO, and they were growing tur dal in addition to maize, chilli, and paddy. He added that the members had regularly attended training programmes at the Krishi Vigyan Kendra (KVK).

Other FPO members who introduced themselves mentioned that they were involved in providing fertilisers and pesticides to their farmer members and supporting them in getting bank loans. Most of the FPO stated that they were actively doing input business and wanted to learn about output business. Another FPO president said that his FPO has tied up with a women's Self-Help Group (SHG) and is marketing value-added (VA) products. He added that there were 500 members in his FPO. He said that his FPO has organised crop loans for purchase of seeds, fertilisers, and pesticides.



Yet another FPO member revealed that his FPO which was started with assistance from NAB-ARD and was three years old and has 670 members. He said that on the one hand, the FPO was supplying seeds and fertilisers to its shareholders and has tied up with the local SHG to sell their Value Added products under the Rural Mart brand. He said that the FPO was planning to start selling pesticides to its members at subsidised rates. He said that the FPO does Rs 2 lakh worth of input business each month and arranges crop loans up to Rs 20,000 for its Kisan Credit Card (KCC) holders.

A lady member from Basaveshwara FPO said that the FPO members were involved in the cotton, maize, and tur dal cultivation. She said that the FPO was doing input business by providing seeds and fertilisers to its members at discounts.

Another FPO member said that its farmers were growing chilli and cotton and was also involved in making and marketing VA products under a local brand. He said that the main thrust of his FPO was educating farmers in growing quality crops with minimum input costs. He also said that the FPO was providing storage facilities for the members. Another lady FPO member called Padma said that her FPO had arranged for a loan at ICICI Bank, and she was involved in the saree business. She said that she was running her business at home.



Introductory Session

Ashwini Venkataram, Senior Officer, Finance, PAC welcomed the dignitaries on the dais. She introduced PAF as an organisation that works with the government to take the government's schemes effectively to the people.



Welcome Address

Dr. Annapoorna Ravichander, Executive Director, PAF, who addressed the gathering said that PAF was a 20-year-old organisation operating out of Bengaluru. She revealed that this was the sixth such training programme on Smart Farming being conducted by PAF with help from NABARD. She said that the usage of Artificial Intelligence and Machine Learning (AI & ML) in agriculture was important.

She explained that the purpose of the training programme was to introduce technological innovations for farming to farmers. She introduced the two resource persons Srinivas Patil and Balachandra. She proudly announced that Patil has been an inspiration for farmers who participated in the previous training programmes. She shared that Patil had been instrumental in exporting branded and labelled tomato pickles made by SHGs to the USA. She said that making value-added products like chikki out of groundnut can increase the farmers' income.

She said that via the programme supported by NABARD, PAF was educating farmers on how to connect to large customers like Big Basket, Amazon etc. She urged participants to learn new things from the training programme. She said that the engagement did not end with this programme and there is going to be a second phase of training on labelling and branding.



Dr Annapoorna said that PAF had applied to NABARD for funding to set up AI & ML hubs at the district levels to train farmers in the latest technology for agriculture. This series will be by the FPOs, of the FPOs and for the FPOs.

Inaugral Address

Dr. B K Desai, Director of Research, University of Agriculture, Raichur began his address by saying the programme being held is very relevant and necessary in current times. He stressed that farming methods should be upgraded in tandem with the advancement of technology. He traced the history of agriculture in India from traditional farming techniques used in the pre-independence era to modern mechanised agriculture today. He said that the nation's food security was threatened as population increased in Phase two.



During the Green Revolution, farmers adopted many hybrid varieties of crops and mechanisation improved their quality of life. He called this phase 'intensive cultivation' which was characterised by 'indiscriminate usage' of resources. The third phase was 'sustainable agriculture' which sought to undo the damage done to the land and water during the earlier Phase. This phase focused on saving natural resources for the generations to follow. This was followed by 'crop diversification' in the 2000s. This phase focuses on composite farming and organic farming. He pointed out that the main intent of the training programme was to educate farmers in transforming their agricultural activities.

He described Smart Farming as 'ideal and digital'. He urged farmers to practice agriculture 'intelligently'. He related an anecdote dated 25-years-ago where mechanised farming was being demonstrated to farmers of a remote village and the scientists doing the experiment ran out seeds which were being sown by the tractor.

Dr Desai recollected that the farmers had suggested then that there should be a sensor in the tractor which beeps when the machine runs out of seeds. He lauded the presence of mind in those farmers who were able to suggest such an improvisation 25 years ago. He pointed out that this kind of mind-set exists only with involvement for farmers. He talked of a Japanese theory (Kaizen) that all improvisations to agriculture should come from the suggestions of grassroots farmers and all other stakeholders.

He continued to explain the fifth phase of agriculture development wherein agricultural activity is digitised. He pointed out that digitisation occurs when mobile Apps are used in agriculture.

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He continued to explain the fifth phase of agriculture development wherein agricultural activity is digitised. He pointed out that digitisation occurs when mobile Apps are used in agriculture. Through such Apps farmers can learn newer and more effective methods of Smart Farming and increase the yield and quality of the crops. He stressed that farmers should keep pace with the development of agriculture across the world.

Dr Desai also introduced the Electronic Solutions against Agricultural Pests (eSAP), ICT solution developed by UAS Raichur and used in the field of Plant protection. It is a dedicated system that effectively integrates Mobile communications, Tablet-based technologies, and Cloud solutions. It brings different players of the agricultural ecosystem including farmers, agricultural universities, and policy makers to interact on a single platform in real time enabling two-way dissemination of real time information strengthening the agricultural sector. By merely sending a photo of the diseased crop, farmers can get information as to how they can combat the pest menace. He also delineated the workings of sensor-based irrigation wherein the farmer can operate the irrigation system remotely on his smartphone.

He urged farmers to get involved in the entire value chain of agriculture (production to product). He noted that organic products have become a fancy with customers. He said as per a govern-

ment circular a ‘Millet Mela’ would be held in coming months with the intent to promote sales of millet products. He informed us that 2023 would be the international year of millets. He stressed that farmers should have market intelligence and grow unique crops and carve a niche for themselves in the market.

He also stated that it is essential for farmers to ‘blend’ conventional and modern methods of agriculture. He proposed that farmers must get the best of both worlds—conventional and Smart Farming. He informed that agricultural universities state-wide had developed 457 techniques of tech-based farming and 46 of them were being adopted in Raichur district in plant protection, agriculture science and strain development departments.

He urged farmers to adopt mixed and climate-smart farming. He stressed that it is important to choose the ‘best model’ applicable to the farmer and his land. He urged farmers to take up animal husbandry along with cropping.

Introductory Remarks

Smt. Devika, JDA, Agriculture Department, Raichur said that NABARD had set up 23 FPOs in Raichur district and the Agriculture Department has set up nine FPOs. She evinced great interest in knowing what kind of knowledge would be imparted in the programme that followed. She noted that during the Green Revolution the thrust was on quantity of food production, but now there is a paradigm shift towards quality. She also noted that most of the farmers today were quite educated, and the focus of the farming sector has changed from satiating hunger to making profits through agriculture as a profession.

She said that the Union government had set a target of 10,000 FPOs to be established. She also outlined the ODOP (One District, One Product) scheme of the Centre. She shared that under ODOP, the product that was chosen for Raichur was chilli.



Under ODOP, the government provides both subsidies and loans for FPOs, SHGs and individual farmers. Since the response to ODOP was limited, the government expanded the scheme to all crops grown in the district. She said that the Agriculture Department was given an incentive of Rs 10,000 per hectare to farmers who grow millets in Raichur. She touched upon crop survey mobile Apps wherein the farmer can take a picture of his crop and upload to the app. She also mentioned that Karnataka was the first state to introduce this app.

She added that by uploading photos, the farmer gets a certificate which can be used for getting bank loans, applying for crop insurance, and availing all the other benefits provided by the government. There is no need to stand in queues at the tahsildar's office for this certificate. She touched up on Disha app and eSAP app.

She enumerated that there are at least 10 such Apps for agriculture. She pointed out that farmers must travel up to 90 kilometres to get soil testing done at KVK. However, this can be done in the field itself using advanced devices. She noted that agriculture was increasingly becoming demand-driven, and the focus was shifting from quantity to quality. She said that there was a need for a connection between the farmers and the customer to market VA products like chilli powder. This would help farmers who have availed up to Rs 30 lakh loans for chilli cultivation to repay their loans, she averred.

Address by Special Guest



Smt. M Kalavathi, DDM, NABARD, Raichur said that NABARD was sponsoring the training programme because it is very needed for farmers at this time. She added that NABARD's focus was empowering FPOs. She urged the board directors and CEOs of FPOs to learn from the programme. She told farmers to take the learnings from training to all their 500-1000 members in their organisation. She said that with modern advancements like drone and satellite technology, one can determine the moisture content of the soil. She announced that a separate training would be given to FPOs on such technologies. She advised that the goal of the farmer should be to bring down the production cost and making VA products with labelling and branding.

She informed that the state government was trying to bring all the value-added farm products made in the state under a common brand umbrella. She said that a Sindhanur FPO, Raichur district had already been brought under the common brand umbrella (along with eight other FPOs). She said that the Sindhanur FPO had been presented the Best Performing FPO award by the chief minister. She explained that output business through value-addition was the way forward.

Technical Session

Module 1: Existing Transformative Technology and Innovations in Transformative Technology



Srinivasa Patil, Research Engineer, Farmer & Agripreneur

Resource Person, Srinivas Patil began the technical sessions by introducing himself and taking stock of the knowledge of the audience on transformative agriculture. He gathered that there were members of the Farmer Producer Companies (FPCs), Non-Governmental Organisations (NGOs) and women's Self-Help Groups (SHGs) in the audience. He also gathered that certain FPCs were making VA products out of the tur dal by grading it into first and second quality produce.

Patil said that his presentation would focus on aspects of marketing VA products and Smart Farming. He noted that earlier without irrigation, the farmers of Raichur were growing only maize and cotton. But now with irrigation, they are growing paddy too. He pointed out that better infrastructure has led to a diversification in cropping. He also said that millets which were selling at Rs 50 three years ago, are now selling at Rs 100 per kilogram. This shows the demand for the product has increased.

He explained that market intelligence is very necessary for Smart Farming. He advised the audience to grow what the market needs so that there is no wastage.

Cropping must be demand-driven, he added. He pointed out that if the farmer sticks to one crop, then it leads to soil degradation. He stressed that there needs to be mixed cropping. He took the example of sunflower and ginger cultivation that was overdone in Vijayapura district.

At this point, he turned to mobile Apps for agriculture. He noted that traditionally agriculture is mostly common sense. He said that a large part of Smart Farming was precision farming wherein inputs are measured and applied as per the soil and climate conditions. He urged farmers to download Apps for agriculture. He lauded authorities of the Agricultural Department and universities for being responsive to the needs of the farmers. He said that selecting the right seed for the crop is key to successful yield. He introduced the Meghadoot weather app to the participants. He also introduced the Plantix app that can be used for pest control. By simply uploading a picture of the diseased plant, the farmer can get solutions to pest problems.



Interaction: A participant shared that he had found Apps lacking adequate information. He pointed out that the Apps don't differentiate between dry and irrigated lands, local climates, soil types, or seed varieties. He pointed out that most of the Apps for agriculture are sponsored by big companies that promote their products. He said that instead Apps should provide information on products that are inexpensive yet beneficial. He also stressed that organisations

like Indian Council of Agricultural Research (ICAR) should ratify these Apps.

Patil addressed the issues raised by saying that each FPC must have one person to do some research on seeds, soil, climate, and other inputs needed for the crop. He said that this person should gather all the data on the above and propagate it to the members. He moved on to precision farming for sustained quality of produce. Maintaining the right moisture content, size etc is the key to quality farm products. He stressed that grading and processing is essential. He pointed out that there was nothing wrong with the input business done by Farmer Producer Companies (FPCs) in Raichur, but the focus must now be shifted to output business.

Patil continued his presentation by urging FPCs to appoint exclusive marketing managers who work the whole day to find markets for their members. He said that marketing activities should begin with sowing and not after harvesting. He said that FPCs should give these marketing personnel all facilities. He enlightened the audience that the one crop—maize-- that they grow has a demand in not just poultry and cattle farms, but also in companies that make biscuits, corn fries etc. He also informed that corn sugar can be made out of maize, and this is used in the making of chikkis (10% syrup). He urged FPCs to cut out middlemen and deal directly with such companies

Technical Session

and increase their income.

At this point a member of the audience pointed out that 90% of those present there were dry land farmers. Patil suggested that then that papaya would be ideal for those conditions as it requires water only once a week. He pointed out that as part of precision farming, sensors can be used to determine soil moisture. If the moisture content drops only then irrigation is necessary. Not otherwise. He gave the example of Israel where there is very little land and water available. They practice vertical farming and drip irrigation. He also touched upon hydroponic farming in Israel where water is used to supply nutrients to crops without land. He also shared that if tomatoes are grown in greenhouses the plants grow to up to seven feet and yield more.

Interaction: A farmer said that most of the land in Raichur lacked rainfall which was intermittent and sparse. He clarified that the three main crops in Raichur district were cotton, maize, and tur dal. He also said that most of the FPOs in the district were no more than three years old and had very little knowledge of marketing. He said that there was a dearth of training programmes in marketing. He also said that 'buying centres' were in the control of deputy commissioners and were few and far between. He stressed that the need of the hour was for more such centres to be established in each FPO. He also pointed out that there was a need to promote organic farming.



Patil continued his address by accepting everything that the farmer had said and added that the problem can be addressed if FPOs function like enterprises. At this point it was pointed out to Patil that his presentation was about the crops of the region—cotton, maize, and tur dal.

So, Patil began to focus his presentation on the above crops. He said that he was selling cotton banians that were being sold in his Organic Options mart on the Tumakuru highway. He offered to connect cotton farmers of Raichur to the organisations making these undergarments. Talking of millets, he revealed that he makes ragi cookies as a VA product out of the ragi he grows. He pointed out that the Gutte Ragi that he grows can be harvested in three months. He shared that he sells 200 kg of ragi cookies a month. This is the importance of value-addition. He said that similarly millet-based VA products like cookies have a big market in Coimbatore. He informed that he supplies Rs 2.5 lakh worth of VA products to various highway stalls.

Patil said that he, personally, had created markets for a variety of VA farm products and offered any sort of help that the participants require. He also added that some of his products would be available online shortly after. He suggested that FPOs register themselves by going to the Big Basket website and registering themselves as vendors. He took the example, a success story of a Gangavathi SHG that he was coordinat-

ing with and selling their VA products to him. This SHGs pickle, powders are now selling in large numbers in his highway stall. Patil has taken the trouble to label and brand the SHGs products. He asked the FPCs to access international markets using Smartphone technology. He said there exists a market for indigenous VA products in Dubai and Singapore.

He offered to engage with individual FPOs to export products. He pointed out that the labelling should be such that it makes the customer buy the product in eight seconds. He invited the participants to visit his Rural Mart on the highway. He stressed that quality of the crop was of paramount importance.

He took the example of Nestle and Lijjat Papad that went international and became global brands. He stressed that the 'real' owner of the FPC was the customer and it is important to provide him with what he wants. At this point, Patil introduced mobile weather Apps. A participant said that maintaining quality of the VA products was an issue.

Patil continued by saying that drones and AI had revolutionised farming. He submitted that on receiving a red alert, the system will automatically switch on and address the pest attack or need for water. And all this technology is mobile based. He also touched upon genetically modified crops in cotton cultivation like BT Cotton wherein the inputs for the crop are lesser. He stressed that the FPCs must take the labelling consultation to market their products online which give a framework for labelling VA products.

At this point a video on precision agriculture in Israel was shown to the participants. The video was about precision farming which is more efficient and sustainable. Topics like drip irrigation, water recycling, and drone usage were covered in the video.



Technical Session

After the video presentation, the farmers shared that in some parts greenhouse farming is being practised to conserve the moisture in the soil. A discussion on the video followed. One participant shared that to produce one kilogram of rice 10,000 litres of water is required. Patil observed that in Kolar district where there is severe water shortage, tomato and mango farming is done using techniques like drip irrigation and exported to Mumbai, Delhi, Pune and Kolkata. Patil said that a farmer there was supplying water directly to the roots through a pipe dug into the ground to save water. Patil stressed that the choice of the crop must be done as per the climatic conditions of the region. He observed that millets contain many minerals and hence they should be promoted in the market accordingly. He pointed out that because millets are grown in plenty in Raichur, making VA products out of millets and selling it pan India would be profitable. He suggested that a geographical indication (GI) tag must be obtained for millets grown in Raichur. A participant shared that a particular variety of mango had got the Raichur GI tag.

A participant shared that there needs to be a change in mind-set. He said that, taking dairy farming for example, a farmer spends at least Rs 300 on one cow per day but does not take the input cost into consideration when selling the milk. Hence the deficit. Patil took the example of a farmer who was purifying and selling cow urine, (go arka) mixing it with Brahmi leaves, for a profit and suggested that the participants could do the same. He also suggested that farmers can make ghee and sell it for Rs 2,000 per kg.

All this is possible if the FPO opens a stall. Cow dung cakes are sold at Rs 10 a piece online. Patil said that he himself had fulfilled such orders for a customer in Tamil Nadu. He introduced the concept of bio dynamics (BD) to the audience wherein dead cattle are buried in the ground for six months and then plant nutrients are manufactured with the mortal remains of the cow. He took the example of a VA hair product made with curry leaves and coconut oil which he sells. Patil offered to buy products like amla pickle from the local SHGs.

He informed the gathering about the Food Park in Vasanthanarasapura, Tumakuru district which was inaugurated by Prime Minister Narendra Modi which markets products all over the world. He added that these food parks buy in large quantities from SHGs and FPOs. He alluded to another food park that is coming up in Dharwad. Patil urged the farmers to take a personal 'salary' out of their income and build it into the cost.

At this point, a video on 'Family Farmer' was shown to the audience.

Patil suggested that peanut butter can be a VA product made from locally grown groundnuts. He said that the people in the video are promoting the concept of 'family farmer' just like each family has a family doctor or lawyer. He touched upon the concept of community farming. He stressed that there is a need to practice mixed cropping and composite farming (with Dairy farming).

He informed that it is now possible to get a Right to Tenancy (RTC) certificate

using the Krishi Darshaka app. Patil went on to discuss weather forecasts Apps for mobile like Meghadoot, Kisan Diary app for calculation of expenses and profit margin, mobile courseware Apps (for dragon fruit, strawberry cultivation). He pointed out that climate changes have opened up new avenues for farmers in Vijayapura and they have taken up apple cultivation.

Patil continued his presentation by discussing value added products. He stressed that the farmer should first find markets and work backwards and then sow the crop. He suggested that the FPO should tie-up with big hotels and supply vegetables daily. He stressed the need to explain in brief the speciality of the product on the label to sell more. He gave the example of the Koratagere groundnut that he grows in his farm and sells at his stalls which turns sweet when roasted. He explained the different techniques of packaging in plastic covers and bottles. He discussed customer engagement tactics stating that setting up a Rural Mart and getting repeat orders is the key to success.

Patil said that he himself is willing to buy corn flour from Raichur farmers. He said that Big Basket, Ninja Kart and Reliance have set up collection centres where farmers can sell their products in bulk. He explained that Apps like Loop can be used for transportation of the products to far off places. He demonstrated a soil testing device costing Rs 500 which can be used to determine the moisture content and PH level of the soil. He alluded to another device costing Rs 7,000 which the FPOs can own and use to test soil in farmers' lands. He advised collaboration between the FPOs and sharing of experience and knowledge. He offered to buy VA products like ragi, bajra and other millet cookies if the FPOs can sell them to him in bulk.

Explaining product differentiation, Patil asked the FPOs to find differences in the tur dal grown in Raichur and that which is produced in Bidar or Kalaburagi. This is what branding is all about, he added. He also demonstrated the eSahamathi app and others like it. He suggested that tutti-frutti can be made from raw papaya and sold for a good price. Papaya peel can also be used to make beauty products. He introduced several Apps like ESuvidha (market discovery), Cropdoctor and eSAP (pest management), Pashu Poshan (dairy farming). He said that organically grown mangoes sell at even Rs 260 per kg. He informed that farm loans are given based on GST transactions.

Technical Session

Module 2: Financing Smart Farming



R K Balachandra, Lead Bank Manager (Retd), Gonikoppal

R K Balachandra, Lead Bank Manager (Retd), Gonikoppal began his presentation with an anecdote of a young soldier who lost his right hand in a grenade blast, practiced shooting with his left hand and won an Olympic medal twice. He also introduced an activity where the participants are asked to choose the coloured road they want to take from among four options -- Green, Yellow, Red and Black. In a circle no matter what road you take, you always come back to the starting point. Balachandra said that the fate of farmers has become like this—instead of moving forward, they keep going round in circles. The question he posed to the participants was – “What next?”. How do we get out of the vicious circle and move forward?

He went on to explain the difference between loans given by banks and those given by cooperatives. He added that a DCC bank loan up to Rs 3 lakh is interest free.

Interaction: Members of the audience presented their concerns in securing bank loans saying that DCC Bank gives loans only to the same people again and again and does not entertain new applicants. They also said that bank managers do not talk to farmers in Kannada. Farmers in the audience also said that usually they are not commerce graduates and do not understand the arithmetic of loans and repayment.

Addressing these woes, Balachandra said that crop loans of up to Rs 1 lakh per acre were being given to individual farmers and loans of up to Rs 3 lakh- Rs 10 lakh were being given to SHGs by all nationalised banks. The loan limit is fixed keeping in mind future contingencies for the next five years. He added that almost anything including livestock can be given as collateral. He said that the interest payments must be up to date and that is the main problem being faced by the farmers who take loans. He agreed that agriculture is ridden with risks, but repayment of loans was the only way to avail more loans. He explained that as per government orders banks cannot refuse crop loans to any farmer who has renewed his credibility by repaying the loan within one year.

He went on to explain the concept of Kisan Credit Card and crop loans. After explaining the meaning of 'loan security' he proceeded to state that according to RBI rules, no security is needed for a crop loan of up to Rs 60,000. He mentioned that loans are provided for mechanisation of agricultural activities, drip irrigation, storage, and estate purchase. Loans are given for purchase of livestock also (cattle, sheep, poultry, and fisheries). There are loans of up to Rs 1.60 lakh given for fishponds. Loans are given for SHGs also. He expressed that gold loans can also be taken. He discussed loans given for tractor, tiller, weeders, plantation, and horticulture. He said that these loans usually have a five-to-seven-year period. He mentioned that loans were given for drone purchase of two drones per farmer for a three-year period up to an amount of Rs 12 lakh. The reason for the three-year-period is because advancements in drone technology is likely to make today's drones obsolete in three years. He proceeded to discuss the various loans given for different types of irrigation infrastructure given for a nine-year repayment term.



Technical Session



Replying to a specific question, Balachandra said that it is enough if the farmer pays interest and principal once each year to renew the loan. He explained that the interest rates vary from bank to bank with a 0.25% variation.

Balachandra introduced loans for farm transportation. Loans are given for even two-wheeler purchases under this scheme. He said seven-year loans were given for polyhouses and greenhouses. He added that loans are given for mushroom cultivation. He introduced the warehouse receipt concept wherein loans can be sanctioned by banks based on the receipt of goods stored in warehouses. He mentioned that NABARD gives up to Rs 10 lakh funding for construction of cold storage for perishable goods, but the land conversion must be done before that. He advised that crop loans once taken must be used only for agricultural purposes.



Key Takeaways



What the Government must do?

- Ensure that awareness on crop loans given by banks is widespread. Currently there is much confusion and ignorance about crop loans
- Finance market discovery schemes of FPOs
- Give separate loans for marketing of value-added (VA) farm products



What FPOs must do?

- Appoint a marketing manager vested with the sole responsibility of identifying new markets for farm products
- Set up offices where FPO operations can be based
- Set up stalls on the highways to sell value added products
- Get a FSSAI licence for selling VA farm products

Feedback

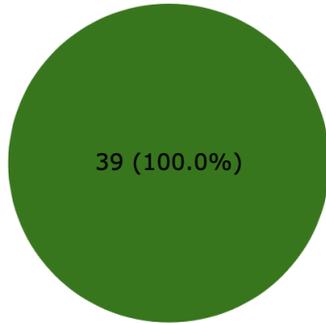
Total Number of Participants

39

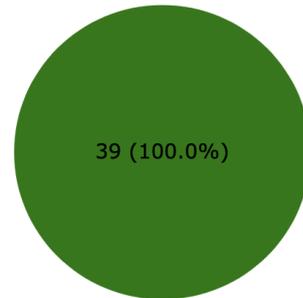
Number of Feedback

39

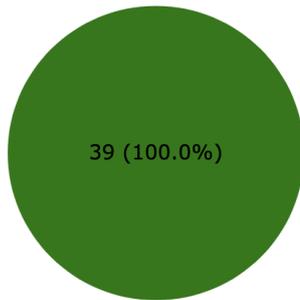
Were objectives of the training met?



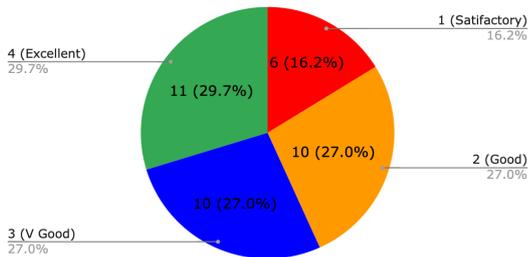
Were the exercises useful in applying the learning?



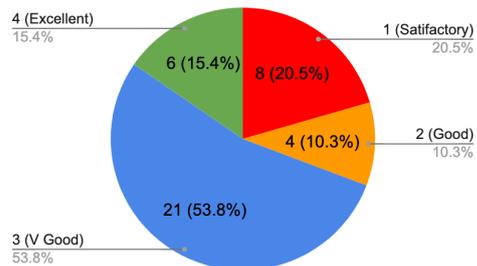
Was the training conducted in an organised way?



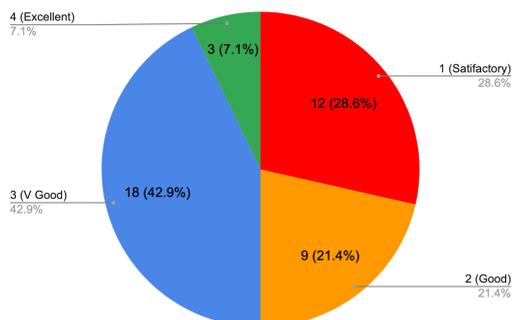
Were the examples suitable and helpful to understand



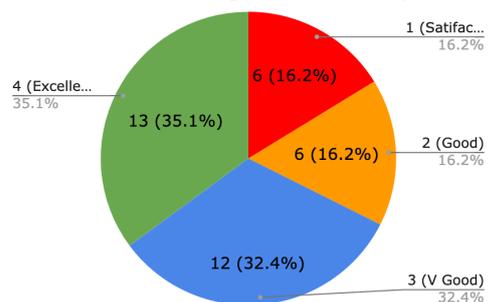
Encouragement from trainer for participation



Trainer's answers to my questions



Overall this training was worth my time



What did you like most about this programme?

1. Agri all App Purpose
2. In this Training programme we got to know about the business and the Bank Loan for the farmers
3. Loan Purpose
4. Training is useful and understood how it will help me to use app to use in farming in field and also helps to educate farmers,
5. All the programme were good
6. In this programme I liked about the FPO
7. Lot of Discussion
8. About Banking Sector and Marketing and how can we handle marketing in Market
9. Training was good
10. Mr Srinivas Patil's Maket Linkage support, Mr. Balachander's Bank Loans Schemes
11. Detail mention about the farmers
12. About the Bank Loan and the crop farming
13. Got to know about Marketing and Agriculture
14. In this training we came to about the bank loan and agriculture
15. How to sale the crop and what is the use for FPOs
16. We liked the training and cam to know how to use organic cropping
17. We came to know about Mobile App,about the bank and sprinkling for agriculture
18. Good Information about the Bank
19. Good Training
20. Got to know about the Mobile Apps
21. Got to know about the Organic Farming
22. How to use Mobile apps and about the Bank Loan
23. How to take a Bank loan Agriculture
24. How to take a Bank loan, about the mobile apps
25. Good Training
26. In this Session we liked about how crop farming
27. About Bank Loan and Cropping
28. Came to know about the bank Loan
29. In this training we came to know about the water usage for agriculture and need to fix the rate ourselves in market
30. We came to know to how to sale the crop in market

What did you not like about this programme?

1. Farmers interference
2. Farmer's discussion while speaker was speaking
3. Didn't get the information about agriculture in North karnataka
4. Time is not sufficient need two more days

Annexures

Annexure 1: Agenda



Training on Existing Transformative Agri Technology, Mobile-based Applications, Innovations & Smart Farming Day & Date: Wednesday, July 20, 2022 Venue: ICAR - Krishi Vigyan Kendra (KVK), University of Agriculture Science Campus, Raichur, Karnataka 584101		
10.45-11.00 a.m.	Registration	
11.00-11.05 a.m.	Introduction	Ms. Ashwini Venkatram Programme Manager - Finance, Public Affairs Foundation, Bengaluru
11.05-11.10 a.m.	Welcome Address	Dr. Annapoorna Ravichander Executive Director, Public Affairs Foundation, Bengaluru
11.10-11.20 a.m.	Inaugural Address by Chief Guest	Dr. B.K.Desai, Director of Research University of Agriculture, Raichur
11.20-11.25 a.m.	Introductory Remarks	Smt. Devika, JDA Agriculture Dept, Raichur
11.30-11.35 a.m.	Special Guest	Smt. Kalavathi N DDM, NABARD, Raichur
11.35-12.00 p.m.	Coffee/Tea Break	
12.00-1.00 p.m.	Module 1: Existing Transformative Technology and Innovations in Transformative Technology	Srinivasa Patil R, Research Engineer, Farmer & Agripreneur, Bengaluru
1.00-1.45 p.m.	Lunch Break	
1:45-2:15 p.m.	Module 2: Financing Smart Farming	R K Balachandera Retd. Lead Bank Manager, Gonikoppal
3.00-3.15 p.m.	Coffee/Tea Break	
3.15-4.15 p.m.	Q & A and Summing Up	Moderator - Srinivasa Patil R,

Advisor and Mentor: Dr. Lalith Achoth, Consultant at leading Management schools, Government agencies and Premier Research Institutes across the country and is an Agricultural Economist

Annexure 2: Certificate

Conducted by



CERTIFICATE OF PARTICIPATION

ಭಾಗವಹಿಸುವಿಕೆಯ ಪ್ರಮಾಣ ಪತ್ರ

This certificate is presented to

for participating in a training programme on

**Training on Transformative Agriculture Technology,
Mobile Based Applications, Innovations and Smart Farming**

ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಪರಿವರ್ತಕ ಕೃಷಿ ತಂತ್ರಜ್ಞಾನ, ಮೊಬೈಲ್ ಆಧಾರಿತ ಅಪ್ಲಿಕೇಶನ್‌ಗಳು,
ನಾವೀನ್ಯತೆಗಳು ಮತ್ತು ಸ್ಮಾರ್ಟ್ ಕೃಷಿ ಎಂಬ ತರಬೇತಿ ಕಾರ್ಯಕ್ರಮ

Wednesday, July 20, 2022

ICAR - Krishi Vigyan Kendra (KVK), Raichur

Sponsored by



National Bank for Agriculture and
Rural Development

Dr. Annapoorna Ravichander
Executive Director
Public Affairs Foundation, Bangalore

Date: _____

Annexure 3: Feedback Form

Organised by



Feedback Form: Raichur

ಫೀಡ್ ಬ್ಯಾಕ್: ರಾಯಚೂರು

Training on Transformative Agriculture Technology, Mobile Based Applications, Innovations and Smart Farming

ಅಸ್ತಿತ್ವದಲ್ಲಿರುವ ಪರಿವರ್ತಕ ಕೃಷಿ ತಂತ್ರಜ್ಞಾನ, ಮೊಬೈಲ್ ಆಧಾರಿತ ಅಪ್ಲಿಕೇಶನ್‌ಗಳು, ನಾವೀನ್ಯತೆಗಳು ಮತ್ತು ಸ್ಮಾರ್ಟ್ ಕೃಷಿ ಕುರಿತ ತರಬೇತಿ ಕಾರ್ಯಕ್ರಮ

Name: -

ಹೆಸರು ಬಿಂದುವು

Phone Number:

ದೂರವಾಣಿ ಸಂಖ್ಯೆ 9611749805

1. Were the objectives of the training met?

- Yes
- No

ತರಬೇತಿಯ ಉದ್ದೇಶಗಳನ್ನು ಪೂರೈಸಲಾಗಿದೆಯೇ?

- ಹೌದು
- ಇಲ್ಲ

2. Were the exercises useful in applying the learning?

- Yes
- No

ಕಲಿಕೆಯಲ್ಲಿ ಅನ್ವಯಿಸಿದ ಚಟುವಟಿಕೆಗಳು ಉಪಯುಕ್ತವಾಗಿವೆಯೇ?

- ಹೌದು
- ಇಲ್ಲ

3. Was the training conducted in an organised way?

- Yes
- No

ತರಬೇತಿಯನ್ನು ಸಮಗ್ರವಾಗಿ ಆಯೋಜಿಸಲಾಗಿತ್ತೇ?

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Annexure 4: Media

1. Vani

ಸಮಗ್ರ ಕೃಷಿಗೆ ಒತ್ತು ನೀಡಿ- ಡಾ.ಬಿ.ಕೆ.ದೇಸಾಯಿ

ರಾಯಚೂರು, ಜು.20 -

ಕೃಷಿಯಲ್ಲಿ ಹೇಗೆ ನಿರಂತರ ಬದಲಾವಣೆ ತರಬೇಕು ಎಂಬುದು ಇವತ್ತಿನ ಚಿಂತನೆಯ ವಿಷಯವಾಗಿದೆ. ಕೃಷಿ ಹಸಿವನ್ನು ನೀಗಿಸುವುದರಿಂದ ಆರಂಭವಾಗಿ ಇಂದು ಐದನೆ ಹಂತದಲ್ಲಿ ಕೃಷಿಯಲ್ಲಿ ತಂತ್ರಜ್ಞಾನದ ಪ್ರಾಮುಖ್ಯತೆಯ ಹಂತದಲ್ಲಿ ಇದ್ದು ಸಮಗ್ರ ಕೃಷಿಗೆ ಒತ್ತು ನೀಡಬೇಕೆಂದು ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯ ರಾಯಚೂರು ಸಂಶೋಧನಾ ನಿರ್ದೇಶಕ ಡಾ. ಬಿ ಕೆ ದೇಸಾಯಿ ಹೇಳಿದರು.

ಪಬ್ಲಿಕ್ ಅಫೇರ್ಸ್ ಫೌಂಡೇಶನ್ ಬೆಂಗಳೂರು ಸಂಸ್ಥೆಯು ನಾರ್ಡ್ ಸಂಸ್ಥೆಯ ಸಹಯೋಗದಲ್ಲಿ ಐಎಎ ಆರ್ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರ ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಆವರಣದಲ್ಲಿ ಬುಧವಾರ ಆಯೋಜಿಸಲಾಗಿದ್ದ ರೈತರಿಗೆ ಮೊಬೈಲ್ ಆಧಾರಿತ ಅಪ್ಲಿಕೇಶನ್‌ಗಳು,



ಭಸಿದ, ಆದರೆ ಜೊತೆಯಲ್ಲಿ ನಾರ್ಡ್ ಸಂಸ್ಥೆಯು 20ಕ್ಕೂ ಹೆಚ್ಚು ಎಫಿಪಿಟಿ ಗಳ ಜೊತೆ ಕೆಲಸ ಮಾಡುತ್ತಿದೆ. ಒಂದು ಜಿಲ್ಲೆ ಒಂದು ಉತ್ಪನ್ನ ಯೋಜನೆಯಲ್ಲಿ ಜಿಲ್ಲೆಗೆ ಮೆಣಸಿನ ಕಾಯಿ ಉತ್ಪನ್ನ ನಿಗದಿಯಾಗಿದೆ ಎಂದರು.

ಕೆಲವು ಬೆಳೆಗಳನ್ನು ಉತ್ತೇಜಿಸಲು ಪೋಸ್ಟ್‌ಹಾರ್ವೆಸ್ಟ್‌ನನ್ನು ಇಲಾಖೆಯಲ್ಲಿ ನೀಡಲಾಗುತ್ತಿದೆ ಆದರೆ ಲಾಭವನ್ನು ಕೃಷಿರು ಹಡೆಯಬೇಕು ಎಂದು ತಿಳಿಸಿ

ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳಾಗಿ ಭಾಗವಹಿಸಿದ್ದ ಶ್ರೀನಿವಾಸ ಹಾಗೂ ಆರ್.ಕೆ. ಬಾಲಚಂದರ್ ಅವರು ತರಬೇತಿ ನಡೆಸಿಕೊಟ್ಟರು. ತರಬೇತಿಯಲ್ಲಿ ಸದ್ಯದಲ್ಲಿರುವ ಆನೇಕ ಮೊಬೈಲ್ ಅಪ್ಲಿಕೇಶನ್‌ಗಳನ್ನು, ಉತ್ತಮ ಕೃಷಿ ಕಾರ್ಯಗಳು ನಿರ್ವಹಿಸಬೇಕಾದ ಜವಾಬ್ದಾರಿಗಳು, ಬ್ಯಾಂಕ್‌ಗಳ ಜೊತೆಗೆ ವ್ಯವಹರಿಸುವಾಗ ಇರುವ ಸವಾಲುಗಳು ಮತ್ತು ಅನುಸರಿಸ

ಬೇಕಾದ ನಿಯಮಗಳ ಕುರಿತಾಗಿ, ಹಾಗೂ ಮಿಶ್ರಬೇನಾಯದ ಪ್ರಾಮುಖ್ಯತೆಯ ಬಗ್ಗೆ ತಿಳಿಸಿ ಕೊಡಲಾಯಿತು.

ರಾಯಚೂರು ಜಿಲ್ಲೆಯ ವಿವಿಧ ಭಾಗಗಳಿಂದ ಭಾಗವಹಿಸಿದ ರೈತರು ಆನೇಕ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಿ ಚರ್ಚೆಯಲ್ಲಿ ಭಾಗವಹಿಸಿದರು. ತರಬೇತಿಯಲ್ಲಿ ಭಾಗವಹಿಸಿದ ರೈತರಿಗೆ ನೆನಪಿನ ಕಾಣಿಕೆ ಮತ್ತು ಪ್ರಮಾಣ ಪತ್ರಗಳನ್ನು ವಿತರಿಸಲಾಯಿತು.

ಪಬ್ಲಿಕ್ ಅಫೇರ್ಸ್ ಫೌಂಡೇಶನ್ ಸಂಸ್ಥೆಯ ನಿರ್ದೇಶಕರಾದ ಡಾ. ಅನ್ನಪೂರ್ಣ ರವಿಚಂದರ್ ಆತಿಥಿ ಪರಿಚಯ ಮಾಡಿದರು. ಆತಿಥಿ ಕಾರ್ಯಕ್ರಮವನ್ನು ನಡೆಸಿಕೊಟ್ಟರು. ತರಬೇತಿಯಲ್ಲಿ 33 ರೈತರು ಭಾಗವಹಿಸಿದ್ದರು. ಇಂದಿರಾ ಪಿತುಮಣಿರವರು ಕಾರ್ಯಕ್ರಮ ನಿರ್ವಹಿಸಿದರು.

2. Prajvani

ಕೃಷಿ ವಿವಿ ಸಂಶೋಧನಾ ನಿರ್ದೇಶಕ ಡಾ.ಬಿ.ಕೆ.ದೇಸಾಯಿ ವಿಶ್ಲೇಷಣೆ

ತಂತ್ರಜ್ಞಾನ ಹಂತಕ್ಕೆ ತಲುಪಿದ

ರಾಯಚೂರು: ಕೃಷಿಯಲ್ಲಿ ತಂತ್ರಜ್ಞಾನದ ಪ್ರಾಮುಖ್ಯತೆಗೆ ಒತ್ತು ನೀಡಲಾಗುತ್ತಿದೆ ಎಂದು ರಾಯಚೂರು ಕೃಷಿ ವಿಜ್ಞಾನಗಳ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಸಂಶೋಧನಾ ನಿರ್ದೇಶಕ ಡಾ.ಬಿ.ಕೆ.ದೇಸಾಯಿ ಹೇಳಿದರು.

ನಗರದ ಪಬ್ಲಿಕ್ ಅಫೇರ್ಸ್ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದಲ್ಲಿ ಬೆಂಗಳೂರಿನ ಪಬ್ಲಿಕ್ ಅಫೇರ್ಸ್ ಫೌಂಡೇಶನ್, ನಾರ್ಡ್ ಸಹಯೋಗದಲ್ಲಿ "ಮೊಬೈಲ್ ಆಧಾರಿತ ಅಪ್ಲಿಕೇಶನ್‌ಗಳು, ಸಾರ್ವಜನಿಕ, ಪ್ರಾಚೀನ ಕೃಷಿ ವಿಶ್ವವಿದ್ಯಾಲಯದಲ್ಲಿ ಕೃಷಿ ತಂತ್ರಜ್ಞಾನಕ್ಕೆ ಕಿರಿಯ ಬುದ್ಧಿವಂತ ರೈತರಿಗಾಗಿ ಆಯೋಜಿಸಿದ್ದ ಒಂದು ನಿರೀಕ್ಷಿತ ತರಬೇತಿಯನ್ನು ಕಾರ್ಯಗತಿಸಿ, ಅದರ ಮಾತನಾಡಿದರು.

ಕೃಷಿಯಲ್ಲಿ ಹೇಗೆ ನಿರಂತರ ಬದಲಾವಣೆ ತರಬೇಕು ಎಂಬುದು ಇವತ್ತಿನ ಚಿಂತನೆಯ ವಿಷಯವಾಗಿದೆ.

ಒಂದು ಜಿಲ್ಲೆ ಒಂದು ಉತ್ಪನ್ನ ಯೋಜನೆಯಲ್ಲಿ ಜಿಲ್ಲೆಗೆ ಮೆಣಸಿನ ಕಾಯಿ ಉತ್ಪನ್ನ ನಿಗದಿಯಾಗಿದೆ ಎಂದರು.

ಕೆಲವು ಬೆಳೆಗಳನ್ನು ಉತ್ತೇಜಿಸಲು ಪೋಸ್ಟ್‌ಹಾರ್ವೆಸ್ಟ್‌ನನ್ನು ಇಲಾಖೆಯಲ್ಲಿ ನೀಡಲಾಗುತ್ತಿದೆ ಆದರೆ ಲಾಭವನ್ನು ಕೃಷಿರು ಹಡೆಯಬೇಕು ಎಂದು ತಿಳಿಸಿ

ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳಾಗಿ ಭಾಗವಹಿಸಿದ್ದ ಶ್ರೀನಿವಾಸ ಹಾಗೂ ಆರ್.ಕೆ. ಬಾಲಚಂದರ್ ಅವರು ತರಬೇತಿ ನಡೆಸಿಕೊಟ್ಟರು. ತರಬೇತಿಯಲ್ಲಿ ಸದ್ಯದಲ್ಲಿರುವ ಆನೇಕ ಮೊಬೈಲ್ ಅಪ್ಲಿಕೇಶನ್‌ಗಳನ್ನು, ಉತ್ತಮ ಕೃಷಿ ಕಾರ್ಯಗಳು ನಿರ್ವಹಿಸಬೇಕಾದ ಜವಾಬ್ದಾರಿಗಳು, ಬ್ಯಾಂಕ್‌ಗಳ ಜೊತೆಗೆ ವ್ಯವಹರಿಸುವಾಗ ಇರುವ ಸವಾಲುಗಳು ಮತ್ತು ಅನುಸರಿಸ

ರಾಯಚೂರಿನ ಪಬ್ಲಿಕ್ ಅಫೇರ್ಸ್ ಕೃಷಿ ವಿಜ್ಞಾನ ಕೇಂದ್ರದಲ್ಲಿ ಬುಧವಾರ ಆಯೋಜಿಸಿದ್ದ ತರಬೇತಿ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಕೃಷಿ ವಿವಿ ಸಂಶೋಧನಾ ನಿರ್ದೇಶಕ ಡಾ.ಬಿ.ಕೆ.ದೇಸಾಯಿ ಮಾತನಾಡಿದರು.

ಎಫ್‌ಪಿಟಿಗಳ ಜೊತೆ ಕೆಲಸ ಮಾಡುತ್ತಿದೆ ಎಂದು ತಿಳಿಸಿದರು.

ನಾರ್ಡ್ ಅಧಿಕಾರಿ ಕಲಾವತಿ ಮಾತನಾಡಿ, ಈ ತರಬೇತಿಯಲ್ಲಿ ತಂತ್ರಜ್ಞಾನವನ್ನು ಕೃಷಿಯಲ್ಲಿ ಹೇಗೆ ಅಳವಡಿಸಬೇಕು ಎಂಬುದು ಚರ್ಚೆಯಾಗಿದೆ. ಇದರ ಮಾತನಾಡುವನ್ನು ಪ್ರಯೋಜನ ಪಡೆಯಬೇಕು ಎಂದು ಅವರು ತಿಳಿಸಿದರು.

ಸಂಪನ್ಮೂಲ ವ್ಯಕ್ತಿಗಳಾದ ಶ್ರೀನಿವಾಸ್, ಆರ್. ಕೆ. ಬಾಲಚಂದರ್ ತರಬೇತಿಯನ್ನು ನಡೆಸಿಕೊಟ್ಟರು. ತರಬೇತಿಯಲ್ಲಿ ಸದ್ಯದಲ್ಲಿರುವ ಆನೇಕ ಮೊಬೈಲ್ ಅಪ್ಲಿಕೇಶನ್‌ಗಳನ್ನು

3. Cable News



<https://youtu.be/8jyYFNe2U4k>

Annexure 5: Video Link of the Training Programme



<https://youtu.be/Z1MaHqibxUE>

Annexure 6: Photographs

Group Photo



PAF team with dignitaries



Audience



Lunch



Registration



Dr. Annapoorna giving away memento to the Dignitary





Web : www.pafglobal.org



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