

**ANNUAL  
REPORT  
2023-24**



**AGRILIV  
RESEARCH  
FOUNDATION**



Formerly Ayurved Research Foundation

**INTEGRATION OF LIVESTOCK & AGRICULTURE  
FOR SUSTAINABLE DEVELOPMENT**

# ARF AGRILIV RESEARCH FOUNDATION

Founded in the Year 2005 to bring in “Sustainable Integration of Agriculture & Livestock” for increasing farmer(s) income and rural economy, using **Knowledge, Science, and Technology** has been the core philosophy of ARF, with care for the Environment.

Since its inception, ARF has developed and implemented research projects on Hydroponics Technology for Green Fodder Production, Paddy Nursery Transplantation, Revival of Bio-gas plant, Bio-compost Production, Rural Entrepreneurship and Training, Self-Help Groups (SHGs) and Farmer Producer’s Organizations (FPO’s) development, Infertility Management in cattle’s by Scientific Intervention and Artificial Insemination Services to name the few.

ARF innovative programs like AMR and Emission(s) containment through Herbs, Fuel, Energy, Fertilizers production, and Multilevel farming systems under Transformative Agriculture, using “Environment Friendly” practices have gained acceptance among the farmers. Special mention can be made of initiatives for Soil Health and Barren land restoration, Water Conservation in Agriculture, Medicinal herbs cultivation under contract farming, Crop Residue Management, and the Waste-to-Wealth program. All this is to thwart of impending threat of diminishing natural resources, erratic monsoons, climate change-associated risk, and uncertainties.

**ARF's domain of activities is now spread over to cover the entire spectrum of the AgriFood Production System including its impact on People, Planet, Population, pollution, and influence 12 out of 17 SDGs 2030.**

Member(s) of ARF Trust have preferred the name and logo change of ARF which is registered with concerned government departments.

**ARF, is now known as:**



**AGRILIV  
RESEARCH  
FOUNDATION**



**AGRILIV, coinage comes from Agriculture, which sustains Living on the planet. The journey of “ARF for One Health” continues.....**

*Rajeshwari Jaiswal*  
**Rajeshwari Jaiswal**

**Secretary**

Date: 18.01.2024

**Mohanji Saxena**  
*Mohanji Saxena*  
**Managing Trustee**

आयकर विभाग  
INCOME TAX DEPARTMENT



भारत सरकार  
GOVT. OF INDIA

ई- स्थायी लेखा संख्या कार्ड  
**e - Permanent Account Number (e-PAN) Card**  
AABTA6585F

|   |                             |
|---|-----------------------------|
| नाम / Name  | AGRILIV RESEARCH FOUNDATION |
| निगमन/गठन की तारीख<br>Date of Incorporation / Formation | 16/11/2005                  |
|   |                             |

- ✓ Permanent Account Number (PAN) facilitate Income Tax Department linking of various documents, including payment of taxes, assessment, tax demand tax arrears, matching of information and easy maintenance & retrieval of electronic information etc. relating to a taxpayer. स्थायी लेखा संख्या (पैन) एक करदाता से संबंधित विभिन्न दस्तावेजों को जोड़ने में आयकर विभाग को सहायक होता है, जिसमें करों के भुगतान, आकलन, कर मांग, टैक्स बकाया, सूचना मिलान और इलेक्ट्रॉनिक जानकारी का आसान रखरखाव व बहाली आदि भी शामिल है।
- ✓ Quoting of PAN is now mandatory for several transactions specified under Income Tax Act, 1961 (Refer Rule 114B of Income Tax Rules, 1962) आयकर अधिनियम, 1961 के तहत निर्दिष्ट कई लेनदेन के लिए स्थायी लेखा संख्या (पैन) का उल्लेख अब अनिवार्य है (आयकर नियम, 1962 के नियम 114B, का संदर्भ लें)
- ✓ Possessing or using more than one PAN is against the law & may attract penalty of upto Rs. 10,000. एक से अधिक स्थायी लेखा संख्या (पैन) का रखना या उपयोग करना, कानून के विरुद्ध है और इसके लिए 10,000 रुपये तक का दंड लगाया जा सकता है।
- ✓ The PAN Card enclosed contains Enhanced QR Code which is readable by a specific Android Mobile App. Keyword to search this specific Mobil App on Google Play Store is "Enhanced QR Code Reader for PAN Card". संलग्न पैन कार्ड में एनहान्स क्वआर कोड शामिल है जो एक विशिष्ट एंड्रॉइड मोबाइल ऐप द्वारा पठनीय है। Google Play Store पर इस विशिष्ट मोबाइल ऐप को खोजने के लिए कीव "Enhanced QR Code Reader for PAN Card" है।

Cut

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|---|--|
| <p>आयकर विभाग<br/>INCOME TAX DEPARTMENT</p> <p>स्थायी लेखा संख्या कार्ड<br/>Permanent Account Number Card<br/>AABTA6585F</p> <p>नाम / Name<br/>AGRILIV RESEARCH FOUNDATION</p> <p>निगमन/गठन की तारीख<br/>Date of Incorporation/Formation<br/>16/11/2005</p> | <p>भारत सरकार<br/>GOVT. OF INDIA</p> <p>इस कार्ड के खोने/पाने पर कृपया सूचित करें/सीटारें:<br/>आयकर पैन सेवा इकाई, प्रोसेसिंग ईन्फ्रास्ट्रक्चर्स लिमिटेड<br/>(पूर्व में एनएसई-ए-गवर्नमेंस इन्फ्रास्ट्रक्चर्स लिमिटेड)<br/>प्लॉट नं. 4, नवंबर, नवंबर प्लॉट,<br/>बनारस रोड, बनारस,<br/>पिन - 221005</p> <p>If this card is lost / someone's lost card is found,<br/>please inform / return to :<br/>Income Tax PAN Services Unit, Postbox eGov Technologies Limited<br/>(Formerly NSDL e-Governance Infrastructure Limited)<br/>43 Floor, Supreme Chambers,<br/>Banar Road, Banar,<br/>Pincode - 221005<br/>Tel: 91-20-2721 8080, e-mail: <a href="mailto:inimfo@govservices.in">inimfo@govservices.in</a></p> |
|---|--|

Electronically issued and Digitally signed ePAN is a valid mode of issue of Permanent Account Number (PAN) post amendments in clause (c) in the Explanation occurring after sub-section (8) of Section 139A of Income Tax Act, 1961 and sub-rule (8) of Rule 114 of the Income Tax Rules, 1962. For more details, [click here](#)



National Accreditation Board for  
Testing and Calibration Laboratories

**CERTIFICATE OF ACCREDITATION**

**ARF TEST HOUSE**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

**"General Requirements for the Competence of Testing &  
Calibration Laboratories"**

for its facilities at

PANIPAT GOHANA ROAD, 28.5 KM, NH 71A, VILLAGE CHIDANA, TEHSIL GOHANA, SONIPAT,  
HARYANA, INDIA

in the field of

**TESTING**

Certificate Number: TC-10152

Issue Date: 21/12/2021

Valid Until:\* 20/12/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.  
(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Name of Legal Identity : AYURVET RESEARCH FOUNDATION

Signed for and on behalf of NABL



N. Venkateswaran  
Chief Executive Officer

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## Profile

|   |   |
|---|---|
| <b>Name of the Organization</b>                                     | <b>Agriliv Research Foundation</b>  |
| Registered Office Address   | 406, 4th Floor, Sagar Plaza, Dist. Centre, Vikas Marg, Laxmi Nagar, Delhi-11009                               |
| State Office Address  | Unit No 117, First Floor, KM Trade Tower, Plot No. H-3, Sector 14, Kaushambi, Ghaziabad, Uttar Pradesh-201010 |
| R&D Centre  | <b>Haryana Office:</b> Village-Chidana, Tehsil-Gohana, Dist. Sonipat, Haryana-123301                          |
| Field Office  | <b>Uttar Pradesh Office:</b> Subhash Nagar, Ward No. 4, NPP, Maharajganj, Uttar Pradesh-273303                |
| Phone Number  | 011- 69220000   |
| Website   | www.agriliv.co.in   |
| Name & Designation of Chief Functionary                             | Mohanji Saxena, Managing Trustee  |
| <b>Registration Details</b>   |   |
| Trust Registration No.  | 21973   |
| Principal Act and By Law by which organization is governed          | Indian Trust Act, 1882  |
| Act under which registered  | "Deed of Trust" dated November 16, 2005, Registered at New Delhi under the Registration Act 1908              |
| NGO Darpan ID   | DL/2017/0151308   |
| National CSR Hub Code   | B/04/13/09/323  |
| Income Tax  | Section 12A*, ACK NO. 365556090100824   |
| Income Tax Exemption  | 80G*  |
| Recognized by Department of Scientific & Industrial Research (DSIR) | Certificate No. F. No. 11 / 707 / 2016-TU-V   |
| <b>Auditor</b>  | Sandy Associated<br>Chartered Accountants<br>104, Delhi Chamber, Delhi Gate, New Delhi-110002                 |
| <b>Banks</b>  | ICICI Bank<br>Canara Bank<br>Punjab National Bank   |



## Chairman's Message

It gives me immense pleasure in presenting the ARF Annual report for the year 2023-24. It is the 15<sup>th</sup> consecutive year of its publication. I appreciate the efforts of team ARF for taking up the innovative projects related to medicinal plant, multilayer farming and integrated farming aimed towards rural development sustainability and improving farm income. The approval of Cluster Based Business Organization (CBBO) projects by NAFED in Maharajganj (Eastern UP) needs special mention.



During the year, Ayurved Research Foundation worked towards integration of livestock and sustainability for "One Health". The initial results of the collaborative projects with DBT Biorationals on indigenous cows have shown encouraging results, which in future may help in enhancing the soil fertility and yet reduce the use of synthetic fertilizers.

The FPOs in the state of Uttar Pradesh (UP) & Haryana have been benefitted by demonstration through sustainable integration of agriculture and livestock. The farmers have appreciated the efforts taken by ARF R&D Centre to test their soil, milk, water and feed ingredients helping them to produce quality and healthy food. The project on upliftment of reproductive and health status of indigenous cattle female calf has yielded positive response in demonstrating the benefits of proper feeding and management.

ARF is confident that they will continue to do their best to earn the trust of the stakeholders and work towards sustainability for value creation.

Best Wishes,

Pradip Burman



## Managing Trustee's Message

It is my immense pleasure to present the ARF Annual Report for the year 2023-24. Team ARF with its objective for "One Health" has worked closely with the funding organizations & stakeholders to effectively demonstrate the benefits of using technology for value creation.



In the current year, our projects in addition to NABARD were supported by NABCONS and NAFED. The approval of Cluster Based Business Organization (CBBO) projects by NAFED in Maharajganj (Eastern UP) needs special mention. These initiatives include the projects on cultivation of medicinal plants, horticulture crops & livestock farming which demonstrated value creation for the farmers in sustainable manner.

I appreciate the efforts of team R&D to successfully help and guide the farmers by testing their soil, milk, water and feed ingredients helping them to produce quality and healthy food. ARF scientists have published their work in scientific journals and 17 papers were published during this year.

Our collaboration with DUVASU, Mathura, has helped in training and developing the entrepreneurs in the area of animal health & artificial insemination which will go a long way in improving animal health. Our achievements inspire us to continue with our efforts to take the initiatives to next level towards achieving our objectives of "Sustainability" and "One Health".

I wish to express my gratitude to all the collaborators especially, Department of Biotechnology (DBT), NABARD, Ayurved, Members of ARF Research Advisory Committee, Trustees of ARF and other donors for their valuable support.

Best Wishes,

MJ Saxena  
Managing Trustee





## Chief Executive Officer's Message

The ARF annual report for the year 2023-24 is a brief outline of the sustainable initiatives undertaken by team towards integration of Livestock and Agriculture for value creation. Our team engaged closely with stakeholders and farmers to successfully demonstrate the multilayer farming, effective calf management & their timely calving, crop diversification through cultivation of medicinal plants.



It is important to share that two of our FPOs at Saharanpur and Baghpat engaged in livestock initiatives received special appreciation from NABARD. Our R&D efforts helped in development of indigenous cow-based compost with use of microbial culture to improve plant and soil health. The approval of TDF & CDBO project by NABARD needs special mention.

I wish to thank all the team members and funding agencies for their continuous support. I am confident that the new initiatives planned for the year 24-25 will yield much better results towards financial sustainability.

Last but not the least, I wish to thank all Trustee, Members of RAB & most importantly our farmers/stakeholders for their invaluable support & guidance .







Best Wishes,

Dr. Anup Kalra

## Board Of Trustees

|   |  |   |
|---|--|---|
| 1 | <p><b>Mr. Pradip Burman, Chairman:</b> An alumnus of the world-renowned MIT (Mechanical Engineering). Mr. Burman is the creator of the Trust. Mr. Burman has held several positions in Dabur India. He is currently the Chairman of Dabur Nepal Pvt. Limited and also serves as a promoter director on the Board of Aviva Life Insurance Co. Ltd. He is the former Chairman of Ayurvet and chairman of the Mobius Foundation.</p>  |    |
| 2 | <p><b>Mr. Mohan Ji Saxena, Managing Trustee:</b> A gold-medal Pharmacy post-graduate from Banaras Hindu University, retired as Managing Director of Ayurvet Limited after over 30 years in animal health. He led Ayurvet's R&amp;D before assuming the MD role. His work focuses on food safety, antimicrobial resistance, agriculture, and rural development, with several published papers in reputed journals. health, and rural development. He has published numerous papers in reputable journals.</p> |   |
| 3 | <p><b>Dr. Vibha Dhawan, Trustee:</b> Dr. Dhawan, Director General of TERI, has over 30 years of expertise in tree tissue culture. She pioneered in-vitro nodulation for leguminous trees and established a modern tissue culture lab. Her accolades include the AIBA award (1998), Kamal Kumari Foundation award (1998), and the Department of Biotechnology's Biotech Product &amp; Process Development award (2000).</p>   |  |
| 4 | <p><b>Prof. AC Varshney, Trustee:</b> Prof. Varshney retired as Vice Chancellor of Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwa Vidyalaya, Mathura in 2016. He previously served as Dean at multiple veterinary colleges, including CAU in Mizoram and CSKHPKV in Palampur. A distinguished academic, he has published 13 postgraduate theses and 160 research articles.</p>  |  |

## Research Advisory Board

|   |   |   |
|---|---|---|
| 1 | <p><b>Dr. Kusumakar Sharma</b><br/>Chairman-Research Advisory Board<br/>Agriliv Research Foundation (ARF)<br/>Former ADG-HRD, ICAR</p>  | <br>Chairman |
| 2 | <p><b>Dr. TP Trivedi</b><br/>Former Project Director and<br/>Assistant Director General,<br/>ICAR New Delhi</p>   | <br>Member   |
| 3 | <p><b>Mr. Mohan Ji Saxena</b><br/>Former Managing Director, Ayurved Ltd., Delhi<br/>Managing Trustee, Agriliv Research Foundation<br/>Director, Alternative Green Energy Solution Pvt. Ltd.</p> | <br>Member  |
| 4 | <p><b>Prof. AC Varshney</b><br/>Former Vice Chancellor,<br/>Deen Dayal Upadhyaya Veterinary &amp;<br/>Animal Sciences University, Mathura</p>   | <br>Member |
| 5 | <p><b>Dr. Anup Kalra</b><br/>Former Director, Corporate Affairs, Ayurved Ltd., Delhi<br/>Director, Alternative Green Energy Solution Pvt. Ltd.<br/>Director, QCS Herbals Pvt. Ltd.</p>          | <br>Member |
| 6 | <p><b>Dr. Kuldeep Sharma</b><br/>Former Director<br/>Directorate of Publication and Information,<br/>ICAR, New Delhi</p>  | <br>Member |

**Agriliv Research Foundation (ARF)**, a Public Charitable Trust duly registered under the Indian Trust Act with its own state of the art DSIR approved R&D Centre. Since 2005, ARF has successfully carried out research and extension activities in the area of food safety, soil and water health, quality control of livestock production, health and nutrition management, better crop cultivation technologies, vermicomposting, trainings of youth and farmers, skill development and empowerment of women.

## Key Highlights

### A. Agriculture Extension

#### a. Multilayer Farming

ARF (ARF) successfully completed the Multilayer Farming (MLF) Project this year, where 10 demonstration farms of 1 acre each were set up by the farmer beneficiaries in three different villages of Muradnagar block, Ghaziabad District.

The officials of NABARD and the district administration have appreciated the project which has helped in doubling the farmers' income and overall productivity of the vegetables. More than 150 farmers have adopted the model in an around the project area.

#### b. Capacity Building for Adoption of Technology (CAT)

In order to make the farmers well versed with the new Agro-technologies for effective farming practices, the need of creating awareness through demonstration & training was deeply felt. In line with the above objective, 4 CAT programmes were undertaken to give exposure to the farmers to innovative farming techniques, and aid them in doubling their farm income. ARF in collaboration with NABARD successfully conducted CAT exposure visits for total 120 farmers from Saharanpur, Ghaziabad, Baghpat, Alipur and Maharajganj district, U.P.

#### c. Farm to Flat (F2F) Pilot Project

With the objective of providing organic and fresh farm produce directly to the end consumers, ARF took a new initiative named "ARF-F2F" for marketing of chemical-free farm produce of multilayer farmers directly from the farms to flat. This helps in ensuring fresh and quality vegetables at consumers' door step.

### d. Herbal Garden

A unique herbal garden was established at Sagar Plaza Laxmi Nagar, Delhi office. The objective of this herbal garden is to demonstrate and educate the farmers and school going children about the importance and significances of medicinal plant in improving their health and immunity. This herbal garden has got 70 different species of medicinal, aromatic, ornamental, flowering plants. It also has a vertical garden consisting of 120 plants for providing green wall. Herbal garden helps in purifying the air and attracting pollinators such as butterflies, bees, and birds, thereby enhancing biodiversity.

### B. Product Development for Value Creation - DBT Biorational

This special project supported by Department of Biotechnology under the SUTRA- PIC program focused its research objective on identification of the microbes responsible on upliftment of dry cows of indigenous breed. Proper management of cow dung and urine is critical for both organic farming and environmental health. This initiative aims to educate farmers about the benefits of using dry cow periods effectively. This period allows cows to recover and prepare for a healthier lactation cycle, resulting in higher milk yields and reduced risk of mastitis.

### C. Skill Development - Livelihood Entrepreneurship Development Program (LEDP)

Under Livelihood Entrepreneurship Development Program (LEDP) Project of NABARD, ARF provided 10 days detailed oriented training on milk processing and value added by products to 120 women of Self-Help Group (SHG). Training was imparted by professionals from LUVAS, Mother Dary, NIFTEM, Janta Vedic College (JVC) and Motherhood University etc. Women received certificates and financial support after completion of training.

### D. Rural Development

In an effort to increase the income of farmers, ARF implemented various programs. Farmers and milk producers were mobilized for formation and promotion of Farmer Producer Organizations (FPOs) in 10 districts of Haryana and Uttar Pradesh. ARF conducted different training programs on methodology and benefits of Integrated Farming, Organic Farming, Food Processing, Vermicomposting, Multilayer Farming and Advance Agro Technologies. Assistance was provided in

marketing of their produce at different commercial platforms. Farmers were trained under the various programmes to use vermicompost instead of synthetic fertilisers. To assist in learning related technology for simple adaption and application, farmers were taken to various agricultural institutes in India. ARF received a Cluster Based Business Organisation (CBBO) project by NAFED for the establishment and promotion of 5 FPOs in Eastern Uttar Pradesh under the central sector scheme. In all ARF is managing 15 FPOs (details on page no. 22-34). Some of the noteworthy projects sanctioned by NABARD during the period were Tribal Development Fund (TDF), Multilayer Farming (MLF).

**E. ARF Institute of Entrepreneurship Development:**

This program was undertaken in collaboration with DUVASU, Mathura where the experts from college of veterinary sciences helped in training the rural youth on various aspects of artificial insemination and health of livestock.

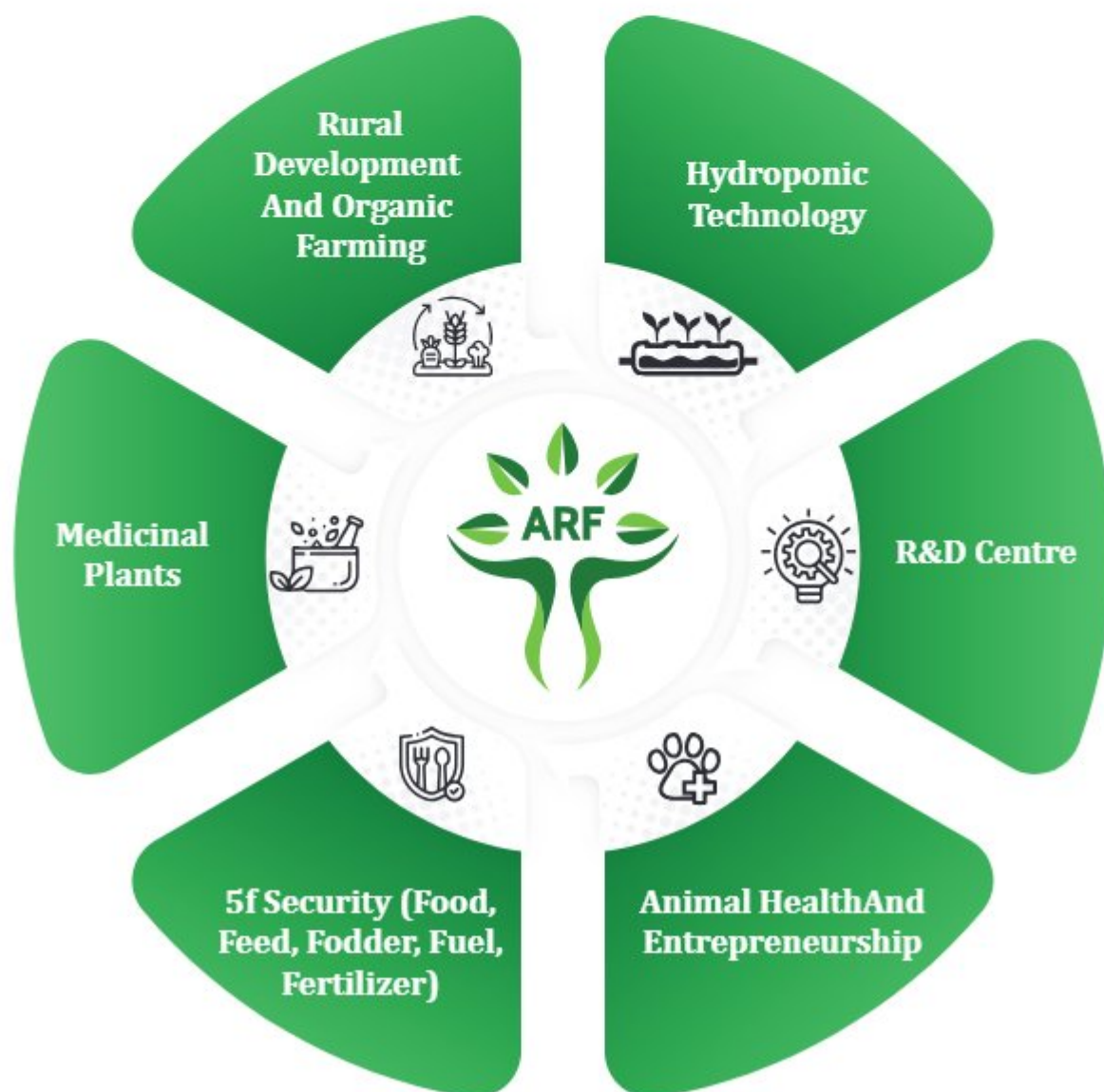
Total 21 rural youths were trained for three months. Post training, most of the youths have started earning their livelihood by providing healthcare and AI services in their own villages.

**F. Animal Health and Breed Improvement:**

ARF promoted artificial insemination to upgrade the breed of the animals to improve the total production & productivity of individual. Total 2141 artificial insemination were performed with the use of semen of genetically superior bulls. After the pregnancy diagnosis of the inseminated animals, 1263 animals were found pregnant, i.e., 59% conception rate.

**G. ARF Test House:**

ARF Test House, accredited by NABL, is the commercial arm of ARF. In its first phase it is undertaking testing of soil, water, animal feeds and herbs. 1041 samples were analysed and reports shared. NABL surveillance was successfully



**KEY AREAS OF INTERVENTION**

conducted to ensure the regulatory compliance of Test House.

## Governance

ARF is governed by Board of Trustee(s) headed by Sh. Pradip Burman, Chairman. The research programme and extension activities conducted by the organization were regularly reviewed by Board to ensure fulfilment of its vision and implementation of objectives.

Research programs were undertaken as per guidance from Research Advisory Committee of ARF headed by Dr. Kusumakar Sharma (Former ADG-HRD, ICAR).

## Audits

Internal and statutory audits were conducted and submitted to Board of Trustees.

## Regulatory Financial Compliance

AgriLiv Research Foundation is registered under Section 12A and 80G of Income Tax Act 1961, and adheres to all legal requirements.

## 1. R&D Centre



ISO 9001:2015 Certificate

ARF R&D Centre has been recognized as a SIRO (Scientific and Industrial Research Organization) by the Department of DSIR, Ministry of Science and Technology, to conduct research in the areas of food safety, agriculture, hydroponics, AMR, animal health and nutrition, medicinal plants, soil and water health, waste to wealth management etc. R&D Centre is well equipped with 56 modern instruments. In order to strengthen and streamline the processes, centre complies with ISO 9001:2015 guidelines, for which it

was certified.

## Research projects for the industry/ institutions:

With the aim to provide high-quality raw materials and safe food production, ARF undertook a number of initiatives focused on animal feed, herbal raw materials, and soil health management for the industries and farmers of the region.

### 1.1. Project Title: Value-added vermicompost (Zn & Fe Enrichment) field trial on wheat crop

**Duration:** 06 months (October 2023 – April 2024)

**Objective:** To evaluate the effect of value-added vermicompost (Zn and Fe enriched) on plant and soil health and its comparison with conventionally used DAP and Urea.

Three plots, each of 100 square feet (L:10 ft and W: 10 ft), were prepared and wheat (variety HD-2967) was sown in these plots as per the following plan:

Plot 1 (Control): UREA (90 kg/ Acre) + DAP (50 kg/ Acre);

Plot 2: DAP (50 kg/ Acre) + Vermicompost (2 tons/ Acre); DAP (50 kg/ Acre) + Value added



Value added vermicompost field trial

Vermicompost (2 tons/ Acre) (Zn +Fe @50 kg/ tons of Vermicompost each).

The soil testing was done before sowing the seeds and was tested after harvesting of the crop. The crop productivity and quality will be evaluated after harvesting in April/ May 2024.

**Results:** The crop quality and yield evaluation will be done after the harvesting in the mid of April 2024.

## 1.2. Project Title: Awareness and assessment of Mastitis in Sonipat and Panipat District.

**Duration:** 12 months (April 2023 – March 2024)

### Objective:

- To identify the causal microorganism for mastitis and its sensitivity against antibiotics
- To create awareness about udder health and prevention of mastitis

Mastitis is the most dreaded disease for dairy farmers owing to its impact on milk production, increased treatment, labour and milk loss cost. A study was taken up for identification of the mastitis causing organisms in dairy animals and their sensitivity towards commonly used antibiotics. On recommendation of the veterinarians, around 280 milk samples of suspected cases were collected from



Creating awareness among farmers

milk samples of suspected cases were collected from villages of district Sonipat & Panipat. These samples were subjected to microbiological investigations to identify its causing organism and its susceptibility to various antibiotics.

**Result:** Infection was due to presence of *S. aureus*, *S. epidermis* and *E. coli*. Apart from these, there were other causal organisms such as *Pseudomonas sp.*, *Candida sp.*, *Diplococci sp.*, and *Bacillus sp.*

Overall, it was found that usage of Enrofloxacin, Ciprofloxacin, Ceftriaxone/ Tazobactam, Cefoperazone/ sulbactam; Oxytetracycline, Neomycin, and Streptomycin were more sensitive than rest of the antibiotics.

The cure rate was close to 85%, which was appreciated by the veterinarians and farmers.

## 1.3. Project Title: Estimation of total Aflatoxin content in raw material of cattle and poultry feed

**Duration:** 12 months (April 2023 – March 2024)

**Objective:** To study the total aflatoxin present in raw material for assuring the quality feed in different districts of Haryana.

Aflatoxins are secondary metabolites produced by microscopic fungi which show toxic effects on human beings and animals. Mostly *Aspergillus flavus* and *Aspergillus parasiticus* are found in cattle and poultry feed ingredients as a contaminant. Total 20 samples were received for the aflatoxins analysis. The aflatoxin analysis was done using ELISA reader.

**Result:** To avoid the adverse effect of the aflatoxin. It has been advised to the manufacturers to store all



Testing of total aflatoxins in livestock feed

raw material in moisture free, airy and ambient environment conditions to avoid fungal contamination.environment conditions to avoid fungal contamination.

## 1.4. Project Title: Quality assurance of medicinal plants.

**Duration:** 12 months (April 2023 – March 2024)

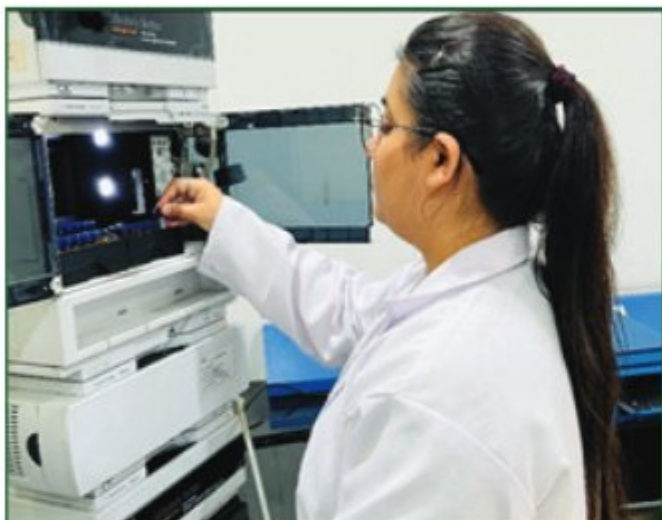
**Objective:** Analysis of quality parameters to ensure the supply of safe & efficacious plant material.

ARF has worked towards establishing the quality standards of herbal raw materials to ensure the supply of premium quality material to various stakeholders.

Total 349 samples of herbs such as - Tulsi, Kalmegh,

Indrayan phal, Brahmi, Bhoomi Amla, Ashwagandha, Kaunch, Moringa, Shatawar, Long Pepper, Kutki, Neem, Kantakari, Bala, Apamarg, Giloy, Daru Haldi, Clove, Shankpushpi, Bhringraj, Mulethi etc. were analyzed as per API methods and for active ingredients using HPLC.

**Result:** 45 % of the samples were found to be complying with standard quality specifications, 55 % of the samples were found not to comply with respect to parameters water soluble extractives, moisture, alcohol soluble extractives, acid insoluble ash.



Quantification of phytoactives in medicinal plants

### 1.5. Project Title: Analysis of raw material/feed on quality parameters for cattle and poultry feed.

**Duration:** 12 months (April 2023 – March 2024)

**Objective:** To analyze the quality parameters of different raw materials/feed used in finished formulations in cattle and poultry feed.

Animal feeds and their quality are important for health and production of livestock. 157 samples such as Soya, Meat and Bone Meal (MBM), Hypro soya, GNE, Maize, DORB DDGS, Starter, Finisher, Molasses etc. were tested using Indian Standard Method (IS 7874, 1975 Reaffirmed 2019).

**Result:** Out of 157 samples such as Soya, Meat and Bone Meal (MBM), Hypro soya, GNE, Maize, DORB DDGS, Starter, Finisher, Molasses etc. 70% samples were found to comply BIS specifications for the parameters crude protein, crude fiber, fat, moisture, ash and acid insoluble ash contents. 30% of these samples were found not to comply with parameter crude protein, fibre content and acid insoluble ash.

### 1.6. Project Title: Analysis of soil and water samples.

**Duration:** 12 months (April 2023 – March 2024)

**Objective:** To analyze the health index of soil and water and to maintain the optimal fertility index.

Farmers were motivated to get their soil samples analysed for 12 different macro & micro nutrients parameters before sowing. Total 159 soil samples and 16 water samples were analysed using STFR Machine and Water Testing Kits, respectively.



Testing of water samples

**Result:** Soil samples were mainly found to be deficient in organic carbon, nitrogen and potassium. Total Dissolved Solids (TDS) & hardness were high in water samples collected for evaluation.

### 1.7. Project Title: Soil health card for Mundlana Block of District Sonapat (Funded by Govt of Haryana)

**Duration:** 3 months (Nov 2023 – Jan 2024)

**Objective:** To promote sustainable agriculture by improving soil health and provide personalized recommendations to farmers. A total of 800 soil samples were collected from 8 villages (Chettera, Badothi Khas, Mahmoodpur, Baroda Mor, Mundlana, Shamri Sisan, Gangana and Bichpari) of Mundlana block to analyze nutrient levels. A web-based portal and mobile app generated soil health cards. These cards guided farmers in making informed decisions about fertilizers and crop management.

**Results:** It was observed that the soil samples were alkaline and non-saline to moderate saline in nature. Organic carbon was in the medium range in 46% of



samples. In 53%, 20%, and 27% of samples, nutrients were in the medium, low, and high range, respectively. All samples were sulphur deficient.

### 1.8. Project Title: Evaluation and Development of indigenous cow-excreta based bio-rationals for enhanced plant and soil health

**Duration:** 3 years (Jan 2022 – Jan 2025)

**Objective:**

- i. Preparation of bio- compost using Cow excreta of indigenous cows.



Microbial consortium analysis and field application

- ii. Enrichment of the prepared biocompost using known microbes.
- iii. Impact analysis of the biocompost on to the soil health and pathogen

**Funding Agency:** DBT

Indigenous cattle breeds are well known for their endurance and disease resistance, such as the Gujrat native breed, which is resistant to tick infestation and mastitis. Similarly, they are tougher and more adaptable to various types of stresses. Nitrogen, potassium, and trace amounts of sulphur, iron, magnesium, copper, cobalt, and manganese are all found in cow dung. Bacteria, protozoa, and fungi are the most common microbes found in the reticulorumen, with bacteria and protozoa being the most abundant. It improves soil mineral status, strengthens plant growth, and promotes other beneficial activities such as sulphur oxidation and phosphorous solubilization. Cow dung and its microorganisms have recently been used to remediate heavy metals such as chromium, strontium, and arsenic. A large number of microbial

enzymes have been isolated and studied for therapeutic, industrial and commercial applications. The study aims to develop indigenous cow-based excreta biorational for enhanced soil and plant health.

**Results:** 12 potential isolates were selected from indigenous cow urine and dung and identified through biochemical and molecular characterization which showed potassium, phosphate, zinc solubilizing and nitrogen activity. Consortium was prepared by using the same indigenous cow dung, for the evaluation of the soil health and pathogen under polyhouse on tomato and capsicum.

It was observed that tomatoes and capsicums obtained from the Indigenous enriched bio compost plot are lower in number but have more nutritional value and also in bigger size when compared with the

## 2. Animal Health

### Calf Bank Project

#### 2.1. Project Title: Upliftment of reproductive and health status of indigenous cattle female calf (Sahiwal, Gir & Haryana).

**Duration:** 3 Year (June 2021 – June 2024)

**Funding Agency:** NABARD

**Location:** 8 villages of Sonipat district

**Objective:**

- i. To demonstrate the farmers about rearing of healthy, reproductively efficient and highly productive indigenous cattle
- ii. To develop the farmers as dairy entrepreneur & improve the socio-economic status by skilling, training for calf raising in scientific manner.

Under the NABARD supported project, 25 beneficiaries were selected with 25 calves of indigenous breeds, among them 15 are Sahiwal, 7 Haryana & 2 Gir breed. The aim is to get female calf in the next generation by the use of sexed semen. Regular monitoring of average daily gain (ADG) by monthly body weight examination, formulation of Total Mixed Ration (TMR) based feed, vaccination, quarterly deworming & quarterly fecal test was completed by veterinarian.

**Outcome:** All the calves are healthy & active, growing to the desired body weight pattern 350-500gr/day

i.e., ADG (Average daily gain). All AIs have been done with sexed semen. 72% heifers achieved first heat and AI done with sexed semen at the age of 15 – 22 months and 28% heifers achieved first AI done with sexed semen at the age of 24-27 months. 92% of serviced heifers were observed to be confirmed pregnant. 72% of heifers gave birth to their calves at the age of 27-36 months. Out of 18 newborn calves, 17 (94%) are female.



Beneficiary with new born calf

## 2.2. Animal Health and Breed Improvement Programme

36 animals health awareness meetings were actively organised at different villages of Sonipat district through the animal health centre by the efforts of ARF to provide the essential veterinary services.

Total 806 cases were treated in which milk fever, ketosis, repeat breeding, anestrus, dystocia, mastitis & intestinal worm load were very common diseases in field condition. Along with animal health camps ARF organised 36 farmer meetings to create awareness to get the maximum production with minimum input cost. ARF promoted artificial insemination to upgrade the breed of the animals to improve the total production & productivity of individual. Total 2141 artificial insemination were performed with the use of semen of genetically superior bulls of cattle & buffalos. After the pregnancy diagnosis of the inseminated animals, 1263 animals were found pregnant, i.e., 59% conception rate.

## 2.3. Waste to Wealth Management

ARF is working on the motto of '5 F' i.e., food, feed, fodder, fuel & fertilizer. ARF has demonstrated and trained the farmers for utilization of the animal waste as a fuel (bio gas) & fertilizer (vermicompost).

## 2.4. Biogas

To fulfil the huge demand for fuels which is increasing day by day, ARF has been promoting the utilization of dung of dairy animals as a raw material for biogas synthesis. ARF has demonstrated the biogas technology for awareness & adoption of the farmers which is the eco-friendly technique, where anaerobic bacteria convert the waste excreta into biogas which can be utilized as fuel for cooking, and lightening. ARF has been utilizing the biogas for electricity production, Hydroponics fodder production & slurry of a biogas plant in the vermicompost.

## 2.5. Vermicomposting

Vermicompost is one of the very good options to convert waste into wealth in rural India, where disposal of animal excreta is a big problem. Nowadays, it is the opportunity for the entrepreneurship in the vermicompost with the integration of dairy sector. ARF provided the training to the farmers for waste management of animal waste which turned into highly fertile manure with richness of humus, nutrients & minerals that improves the soil health and water holding capacity.

The domestic production in the last 12 months has been 45 tonnes which was sold to farmers. According to experts, 45 tonnes of vermicompost is sufficient for 64 acres of land, it provides nutrition equal to 16062 kg of DAP, which saves the farmer Rs 54612.

# 3. Research & Projects

## 3.1 Multilayer Farming

**Project Title: Demonstration of MLF Model among farmers for increasing their income and optimum utilization of the decreasing agricultural land due to urbanization**

**Duration:** 2 years (Dec 2021 to Dec 2023)

**Funding Agency:** NABARD

**Location:** Muradnagar Block, Ghaziabad

**No. of Beneficiaries:** 12

**Objectives:**

- i. Demonstration of multilayer farming and create awareness among farmers for crop cultivation, new methods and technology.
- ii. Demonstration of optimum utilization of

decreasing Agricultural Land due to rapid urbanization.

- iii. To improve the socio-economic status of the farmer

Project Completion Report (PCR) along with other promotional literatures prepared on MLF has also been submitted to NABARD U.P. R.O. (Lucknow), The



Multilayer farming team

outcomes/results furnished in the report greatly impressed the NABARD higher officials, after which, the officials from Lucknow R.O. expressed their desire to visit the MLF farms and meet the farmer beneficiaries. Mr. Rohit, AGM, NABARD R.O. made a visit to MLF, where he interacted with farmers and showed his interest for future project collaborations with ARF. He appreciated the good work done by the farmers and the ARF team under the project in making it successful.

### 3.2 Capacity Building & Adoption of Technology (CAT Visit)

**Project Title: Technology transfer to the farmers under Capacity Building for adoption of Technology (CAT) for farmers of Ghaziabad District.**

**Duration:** 3 Days (Aug 07 – 09, 2023)

**Funding Agency:** NABARD

**No. of Beneficiaries:** 25 Farmers

An initiative of CAT programme was undertaken to give exposure to the farmers on innovative farming techniques, and also aid in doubling their farm income. ARF in collaboration with NABARD successfully conducted a CAT exposure visit for 25

farmers from Bhojpur block, Ghaziabad district, U.P. at ICAR-IISR (Indian Institute of Sugarcane Research), Lucknow where they learnt about advanced sugarcane cultivation techniques, new high yielding hybrid varieties diseases and pest management and preparation of value-added products from sugarcane. During the visit farmers also attended the Agri-Udaan Food and Agribusiness 6.0 Accelerator Roadshow organized by



Visit of Bhojpur farmers at ICAR-IISR, Lucknow

ICAR-NAARM in collaboration with NABARD at IISR

#### Key discussion:

- Developing platform for making farm fresh products directly available to the consumers
- Subsidized Government Schemes for FPOs, Farmers and Agri businesses
- Govt's Initiative towards executing Lab to Land Programme
- Financial support to Agri start-ups to form FPOs
- Improving Marketing channel for the farmers

### 3.3 Garden of Herbs

**Project Title: Project on Vertical Gardening and nursery setup of Medicinal and horticultural plants with regular farmer visit at ARF HO Laxmi Nagar, Delhi.**

**Duration:** 2 years

**Location:** ARF HO Laxmi Nagar, Delhi

#### Objectives:

- i. To encourage, promote and popularise "Herbal Garden" concept and provide an opportunity to

learn benefits of ayurvedic medicinal plants

2. Sustainable office buildings, it balances the ecosystem by the release of oxygen and absorbing pollutants and improve the air quality
3. Cleaner air as plants is adept at removing pollutant such as benzene, trichloroethylene, and formaldehyde from the air, making it cleaner & safer for humans to breathe



Visit of Sh. Pradip Burman at Garden of Herbs

4. To educate in identifying different types of medicinal plants and learn regarding their importance in daily lives
5. To conserve the associated traditional knowledge of herbal plants for future generations
6. Serve as living specimen to help to study plant growth over time and also aids in mental well being

#### Project Details:

1. Gardening of more than 70 species of Medicinal plants (Lemon Grass, Safed musli, Bringraj, Shatawar, Punarnava, Mandukaparni, Aloe vera etc), Ornamental plants, Vegetable plants and Flowering plants.
2. Regular visits of ARF guest, farmers and students to know benefits of herbal plants.
3. Well established vertical garden having 120 plants which help to reduces CO2 levels and increases oxygen with improved air quality.

## 4. Rural Development

### 4.1 Project Title: Formation and promotion of Farmer Producer Organizations (FPOs)

**Duration:** 5 years (July 2021 - July 2025)

**Funding Agency:** NABARD

**Area Covered:** 48 villages of block Gangoh & Nakur, Saharanpur

NABARD-UP has approved two dairy FPOs to ARF under the 'Producer Organization Development Fund - Interest Differential' (PODF-ID) scheme.

| Name of FPO                  | Address                                     | Year of Registration | Scope of work                    |
|------------------------------|---|----------------------|----------------------------------|
| Milkmug Producer Co. Ltd.    | Village- Dudhla, Block- Gangoh, Saharanpur  | 14/07/2021           | Dairy farming<br>Milk Processing |
| Dudhshakti Producer Co. Ltd. | Village- Nayagaon, Block- Nakur, Saharanpur | 25/08/2021           | Dairy farming<br>Milk Processing |

#### Outcomes:

1. Started milk business with AMUL.
2. Established village level collection centres (VLCCs) in block Nakur & Gangoh, Saharanpur for milk procurement.
3. Supplying feeds to farmer member with minimum margin.
4. Dudhshakti FPO started milk ATM for pure milk supply to local consumers in district Saharanpur.
5. Dudhshakti FPO awarded by NABARD for great progress in 3 years of the project.
6. Milkmug FPO turnover is Rs. 6.90 crore for FY 2023-24.

### 4.2 Project Title: Formation and Promotion of Farmer Producer Organizations (FPOs)



Annual General Meeting – FPO Saharanpur

**Duration:** 3 years (Apr 2022 – Apr 2025)

**Funding Agency:** NABARD

**Area Covered:** 20 villages of Saharanpur

Under NABARD sponsored scheme, ARF as POPI (Producer Organization Promoting Institution) has been promoting 2 FPOs on dairy products in district Saharanpur.

| Name of FPO                          | Address                                       | Year of Registration | Scope of work                 |
|--------------------------------------|---|----------------------|-------------------------------|
| Dairo Greens Producer Co. Ltd.       | Village Uncha Samana, Block Gharaunda, Karnal | April 2023           | Dairy farming Milk Processing |
| Shiv Gorakh Farmer Producer Co. Ltd. | Village Rindal, Karnal                        | March 2023           | Dairy farming Milk Processing |

#### Outcomes:

1. Started milk business at local level.
2. Established village level collection centres (VLCCs) in block Gharaunda & Karnal for milk procurement.
3. Supplying feeds to farmer member with minimum margin.
4. Organised two trainings successfully at ISPER-Panchkula & NDRI-Karnal.

#### 4.3 Project Title: Formation and Promotion of Farmer Producer Organizations (FPOs)

**Duration:** 3 years (Aug 2021 – Aug 2024)

**Funding Agency:** NABARD & NABCON

**Area Covered:** 30 villages of Baghpat



Visit of CGM NABARD at Antral Dairy FPO

Under NABARD sponsored scheme, ARF as POPI (Producer Organization Promoting Institution) has promoted 2 FPOs on dairy products, vegetables, mustard oil, spices in district Baghpat.

#### Outcomes:

1. Inauguration of Mava production unit and outlet.
2. Started manufacturing of milk products.

| Name of FPO      | Address             | Year of Registration | Scope of work                              |
|------------------|---------------------|----------------------|--|
| Antral Dairy FPO | Tyodhi Baghpat      | 2021                 | Dairy Products & dairy sweets              |
| Pilana FPO       | Pilana Baghpat (UP) | 2021                 | Vegetables Jaggery Production, Drip agency |

3. Started their trading of Jaggery, Mustard Oil and UPNSC seed multiplication of wheat & mustard.
4. Pilana FPO worked as drip irrigation agency dealership and installed at farmer's fields with 90% subsidy, with help of horticulture department and water pipeline on 75% from Soil Water Conservation Department, Baghpat.
5. The Custom Hiring Centre (CHC) received an 80% subsidy from the Agriculture Department, allowing farmers to rent equipments at low prices, which helped them save 25% of their input costs.
6. FPO procured 1200 quintal wheat and 60 quintal mustard from farmers (shareholders).
7. FPO sold seed to farmers on 50% subsidy from UPNSC.

#### 4.4 Project Title: Formation and Promotion of Farmer Producer Organizations (FPOs)

**Duration:** 3 years (Aug 2021 – Aug 2024)

**Funding Agency:** NABCON

**Area Covered:** 30 villages of Baghpat

Under Central Sector Scheme, ARF promoted 2 FPOs on Potato & maize production & processing.

#### Outcomes:

1. Organized awareness meetings to increase the membership with the help of the agriculture department.
2. FPO started input and seed business and

provided to farmers at low prices.

3. Started new activities in different sectors like mustard oil, Multigrain flour.
4. FPO has been decided about profit distributed to shareholders during the AGM program.
5. BODs and CEO completed training programme at BIRD Lucknow on different BIRD modules.

| Name of FPO                                    | Address                     | Year of Registration | Scope of work   |
|--|-----------------------------|----------------------|---|
| Aligarh Potato Seed Producer Company Ltd.      | Lodha Block, Aligarh (UP)   | 2022                 | Potato Seed & processing, Multigrain flour (Shree Anna) |
| Gangiri Potato & Maize Processing Company Ltd. | Gangiri Block, Aligarh (UP) | 2022                 | Mustard Oil, Potato & Maize Processing                  |

#### 4.5 Project Title: Formation and Promotion of Farmer Producer Organizations (FPOs)

**Duration:** 4 years (Jan 2023 – Jan 2027)

**Funding Agency:** NAFED

**Area Covered:** 50 villages of Maharajganj

Under Central Sector Scheme, ARF as CBBO promoted 5 FPOs on vegetables, medicinal plants, banana production, cereal crop & millet production.

| Name of FPO   | Address                      | Year of Registration | Scope of work                                |
|---|------------------------------|----------------------|--|
| Agricon Fed Farmer Producer Company Limited                           | Partawal, Maharajganj        | 2023                 | Vegetables and medicinal plant               |
| Paniyara Fed Vegetable Farmer Producer Company Limited                | Partawal, Maharajganj        | 2023                 | Production and marketing                     |
| Adigaauri Fed Falirmer Producer Company Limited                       | Brijmanganj, Maharajganj     | 2023                 | Pesticides, Fertilizer, Vermicompost & Seeds |
| Siswa Maharaj Banana & Vegetables Fed Farmer Producer Company Limited | Siswa, Maharajganj           | 2023                 | Vegetables and Banana                        |
| Sohagibarwa Vegetables Fed Farmer Producer Company Limited            | Pakara Chauraha, Maharajganj | 2023                 | Vegetables Production and Bulk Marketing     |

#### Outcomes:

1. Participation and successful conductance of DMC meeting.
2. Organised baseline survey & awareness meetings

to increase the membership.

3. FPO started seed business and provided to farmers at low prices.
4. FPO decided about profit distribution to shareholders in the AGM program.

#### 4.6 Project Title: Capacity Building for adaptation of technology (CAT) exposure visit & training program, Karnal

**Duration:** 2 years (Jan 2023 – Jan 2025)

**Funding Agency:** NABARD

**Area Covered:** Baghatpat

**No. of Beneficiaries:** 150



Farmers Meeting at Maharajganj District

CAT visit organized from 20th Sep. to 22nd Sep. 2023 at Mother Dairy, Delhi. Harit Pradesh FPO, Meerut (U.P.), IIFRS, Modipuram, Meerut, Milkbug Producer Company Limited (FPO), Gangoh, Saharanpur Dudhshakti Producer Company Limited (FPO), Nakur, Saharanpur (U.P.) for farmer of Dairo Greens FPO. Farmers got exposure about the dairy farming and milk processing.

#### 4.7 Project Title: Capacity Building for adaptation of technology (CAT) exposure visit & training program, Baghatpat

**Duration:** 6 months (Sep 2023 – Feb 2024)

**Funding Agency:** NABARD

**Area Covered:** Baghatpat

**No. of Beneficiaries:** 25

CAT visit organized from 7th Aug. to 9th Aug. 2023

at ICAR-IISR, Lucknow, Pilana FPO, Baghpat. Farmers got exposure about sugarcane farming along with new technology and also got information on entrepreneurship development programs under Agri Udan show 6.0.

#### 4.8 Project Title: Capacity Building for adaptation of technology (CAT) exposure visit & training program, Meerut

**Duration:** 6 months (Jan 2024 to June 24)

**Funding Agency:** NABARD

**Area Covered:** Meerut

**No. of Beneficiaries:** 25

CAT visit organized from 20th Feb. to 22nd Feb. 2024



Farmers at G. B. Pant University, Pantnagar (UK)

at G.B. Pant University, Pantnagar, KVK Kashipur and Sugarcane Research Centre, Kashipur (UK) Neer Adarsh FPO, Meerut.

Farmers got exposure about Integrated farming modal, sugarcane farming along with new technology and vegetable farming cultivation through low-cost playhouses.

#### 4.9 Project Title: Livelihood and Entrepreneurship Development Program on milk-based processing (LEDP-Baghpat)

**Duration:** 2 years (Jan 2023 – Jan 2025)

**Funding Agency:** NABARD

**Area Covered:** Baghpat

**No. of Beneficiaries:** 120

Under this project, 120 women from 30 groups were given training for 10 days on milk processing through

various esteemed trainers from reputed institutes like LUVAS, Mother Dary, NIFTEM, Janta Vedic College (JVC), Motherhood University etc. After training women started self-businesses in milk processing and created employment for other women.

#### 4.10 Project Title: DPR project on Mix farming i.e Biofloc Fish farming, Sweetcorn, Broccoli, Turmeric, Saharanpur.

**Duration:** 2 years

**Funding Agency:** NABARD

**Area Covered:** Gangoh Block, Saharanpur

**No. of Beneficiaries:** 10

NABARD approved the project on 'Mix Farming System' under the NABARD scheme farmer sector development fund with grant assistance amount of Rs. 24,94,800.00 for two years period.

4 biofloc tanks were installed at the field of each of 10 farmers for fish farming. In addition, sweet corn & broccoli cultivation were taken up as part of mix farming.

## 5. Bio Resource Development

Human beings have been deriving health and immunity solutions from Medicinal plants since time immemorial and hence this very category of plants has sustained its value to mankind.

During COVID times there had been a sudden upsurge in awareness and consumption of these natural healthcare and immunity solutions. This scenario has not only increased the burden on wild resources but also, opened new dimensions of cultivation of quality medicinal plants produced under different certification regimes to meet the global requirements as well as standards. Bringing medicinal plants under cultivation would add benefits to the farmers by improving their farm income and in providing quality herbs to the herbal industry. It will create a sustainable value chain and reduce the impact on forests. Another benefit of the medicinal plants is that the various plant parts are used, hence the chances of wastage are less, reducing the environmental impact.

About 8000 species of medicinal plants are currently used by local communities all over India. About 90% of the country's medicinal plants are found in forest habitats.

Agricultural diversification through the medicinal

plants can help in enhancing farms' productivity, profitability, and value addition besides leading a healthy lifestyle. Cultivation and production of the medicinal plants will ensure the purity, quality and the sustainable conservation of these plants and the supply of herbs required for the herbal industry.

With growing demand of medicinal plants by Indian herbal industry, there is continuous increase in pressure on forest and its biodiversity. In order to create a sustainable supply base of medicinal plants, ARF continued its journey through structured conservation programme for a variety of medicinal plants.

In FY 2023-24 projects related to Ashwagandha, Brahmi and Tulsi cultivation were undertaken in various parts of country .

#### Outcomes:

1. Crop diversification through the cultivation of medicinal plant
2. Identification of best geographical location for cultivation of targeted species of herbs for quality produce.
3. Skill development of farmers through on farm training during cultivation.
4. Develop and produce quality seeds & planting material for multiplication.
5. Develop a value chain and market linkage for farmers.

During cultivation, regular technical support, guidance, training along with good quality planting materials and POP were provided.

## Project wise progress of the year 2023-24

### 5.1 Projects at Baghpat, Uttar Pradesh

#### a) Ashwagandha (*Withania somnifera*):

**Name of Project:** Crop diversification through cultivation of medicinal plants and its marketing for improving farm income in Baghpat District.

#### Objectives:

1. To demonstrate the benefit of medicinal farming by crop diversification.
  - a. It will help in improving microbial activity in soil necessary for soil health.

- b. It will help in improving soil fertility through crop rotation.
  - c. It will help in improving water holding capacity of soil and water conservation.
  - d. It will help in increasing the credibility of farmers by value added crops.
  - e. It will help in improving farmer as well as country health.
2. To create awareness on the side effects of using chemical fertilizers and pesticides on soil and human health.
  3. To improve socio economic status of the farmers by increasing their income due to demand in medicinal plants.
  4. To encourage sustainable farming and optimum utilization of resources with assurance of profits.

**Crop Duration:** 7 to 8 Months

**Number of Farmers:** 25

**Number of Acres:** 25

**Planting Material:** Jahwar 20 (Ashwagandha seed variety)

**Harvesting:** After fruit ripening

| Particulars     | Plan | Actual | % Achieved |
|-----------------|------|--------|------------|
| Area(Acres)     | 1    | 1      | 100        |
| Yield (Kg/Acre) | 300  | 260    | 87         |
| Withanolide (%) | 0.3  |        |            |

#### b) Tulsi (*Ocimum tenuiflorum*):

**Name of Project:** Crop diversification through cultivation of medicinal plants and its marketing for improving farm income in Baghpat District

#### Objectives:

1. To demonstrate the benefit of medicinal farming by crop diversification.
  - a. It will help in improving microbial activity in soil necessary for soil health.
  - b. It will help in improving soil fertility through crop rotation.



- c. It will help in improving water holding capacity of soil and water conservation.
  - d. It will help in increasing the credibility of farmers by value added crops.
  - e. It will help in improving farmer as well as country health.
2. To create awareness on the side effects of using chemical fertilizers and pesticides on soil and human health.
  3. To improve socio economic status of the farmers by increasing their income due to demand in medicinal plants.
  4. To encourage sustainable farming and optimum utilization of resources with assurance of profits.

**Crop Duration(2 Cuttings):** 6 to 7 Months

**Number of Farmers:** 25

**Planting Material:** Tulsi local variety (origin from Hamidpur, U.P.)

**Harvesting:** At the initiation of flowering

| Particulars       | Plan | Actual | % Achieved |
|-------------------|------|--------|------------|
| Area(Acres)       | 1    | 1      | 100        |
| Yield (Kg/Acre)   | 700  | 540    | 77         |
| Ursolic acid (%)  | 0.3  | 0.25   | 83         |
| Essential oil (%) | 1    | 0.5    | 50         |



**Tulsi field- Baghpat, UP**

## 5.2 Cultivation Project at ARF Chidana

### Objectives:

1. Nursery & QPM development
2. Demo to farmer & training
3. Promote cultivation

### A. Cultivation of medicinal plants in 1 Acres

|   |                                      |      |
|---|--------------------------------------|------|
| 1 | Number of Herbs                      | 6    |
| 2 | Total area under cultivation (Acres) | 1    |
| 3 | Tentative QPM output (MT)            | 2.42 |

### Output- QPM:

| S.No. | Herbs         | QPM output | QPM Qty./Acre (Kg) | Cultivation area (acre) | QPM output (Kg) |
|-------|---------------|------------|--------------------|-------------------------|-----------------|
| 1     | Brahmi        | QPM        | 10,000.00          | 0.15                    | 1,500.00        |
| 2     | Mandukparni   | QPM        | 5,000.00           | 0.15                    | 750.00          |
| 3     | Peppermint    | QPM        | 1,000.00           | 0.15                    | 150.00          |
| 4     | Tulsi Rama    | Seeds      | 35.00              | 0.15                    | 5.25            |
| 5     | Tulsi Shayama | Seeds      | 35.00              | 0.15                    | 5.25            |
| 6     | Bhumiamla     | Seeds      | 30.00              | 0.15                    | 4.50            |
|       | Total         |            |                    | 0.90                    | 2,415.00        |

### B. Demonstration Garden

|   |                                      |         |
|---|--------------------------------------|---------|
| 1 | Number of Herbs                      | 15      |
| 2 | Total area under cultivation (Acres) | 3375    |
| 3 | Tentative QPM output (MT)            | 15 X 15 |
| 4 | Number of Plant Saplings             | 1500    |

### C. Net House

|   |                                      |       |
|---|--------------------------------------|-------|
| 1 | Number of Herbs                      | 22    |
| 2 | Total area under cultivation (Acres) | 1782  |
| 3 | Tentative QPM output (MT)            | 9 X 9 |
| 4 | Number of Plant Saplings             | 1320  |



Herbal garden at ARF Chidana

## 6. ARF's New Initiatives

### ARF F2F Model

With the objective of providing organic and fresh farm produce directly to consumers, ARF has started a new initiative named "ARF-F2F" for marketing vegetables of our Multilayer farmers directly from the farms to flats, ensuring freshness, quality, convenience for urban consumers and fair price to the farmers by eliminating the middleman.

**Project duration:** Jan 2024- Mar 2024

**Consumer Base:** 70

#### Results:

- i. Good prices to farmers
- ii. Healthy and fresh farm produce to consumer
- iii. Customer rating: 8.5 on 10



Fresh strawberry at farmer's field

## 7. HR Initiatives

ARF is a team of strong people who are passionate & committed towards sustainable development. Our employees bring an enormous amount of positive energy with them and have greater focus at work and never hesitate to go the extra mile.

We have always believed in leveraging people's passion to achieve organization objectives. As on March 31st, 2024, a strong team of 40 committed employees aligned to the laid objectives. They are indeed a critical asset to our organization to deliver sustainable results year after year.

In all 11 new members were inducted during the year. HR dept. offered a wide range of training opportunities throughout the year in order to build on the professional competencies.

## 8. ARF's Farmers Producer Organization (FPOs)

The term Farmer Producer Organisations (FPOs) is interchangeably used to refer to farmer collectives, be it a producer company or a co-operative. The scheme also encourages both categories of institutions comprising primary producers. FPOs are built as inclusive institutions to strengthen the bargaining power of smallholder farmers through collective action. The aggregation of the produce is considered to offset scale disadvantages and give bargaining power to the farmers. The success of any collective action is primarily dependent on its ownership.

Team ARF successfully managed Farmer Producer Organizations in Haryana, Western UP and Eastern UP. These FPO's were supported by NABARD, NABCON, NAFED etc.



Visit of CGM NABARD at Antral Dairy FPO

In the year 23-24 ARF managed 19 FPO's of which, 6 completed their task and became independent. Out of the current FPO's 70% are rated B while 15% were rated as A and remaining are new FPO's.

**8.1 Name of FPO: Milkmg Producer Company Limited, Saharanpur**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | C/o Ghasitu Singh, Vill- Bilaspur, Post- Dudhla, Distt-Saharanpur, Pin Code - 247341 Uttar Pradesh            |
| Email ID                             | milkmgppl@gmail.com   |
| Name of contact person of FPO        | Mr. Krishan Pal Saini   |
| Contact no. of contact person of FPO | +91 9548 7325 28  |
| Registration No./ CIN of FPO         | U01100UP2021PTC148701   |
| Date of Registration                 | July 31, 2021   |
| Total membership                     | 375   |
| Share capital of FPO                 | Rs. 6,60,000/-  |
| Nature of Business                   | Khoya & Desi Ghee, Tie-up with Amul in Raw Milk (Under Process), Input Supply ( Cattle feed, khal and Choker) |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | A   |
| E-NAM                                | Registered  |
| Input License                        | FSSAI   |
| Compliances under MCA                | Completed   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | Not Required  |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs. 10,00,000/-   |
| Turn Over(Rs) FY 2023-24             | 6,90,00,000   |
| Products                             | Marketing of Mustard Oil,Ghee, Khoya and Paneer   |



Training programme for the farmers of FPO



Marketing of products

**8.2 Name of FPO: Dudhshakti Producer Company Limited, Saharanpur**

|                                      |  |
|--------------------------------------|--|
| Address of Reg Office of FPO         | Vill- Nayagaon, Block- Nakur, Distt. Saharanpur, Pin Code-247342 Uttar Pradesh |
| Email ID                             | dudhshaktipl@gmail.com   |
| Name of contact person of FPO        | Mr. Satyapal Singh   |
| Contact no. of contact person of FPO | +91 7078 7907 20   |
| Registration No./ CIN of FPO         | U01100UP2021PTC151077  |
| Date of Registration                 | August 25, 2021  |
| Total membership                     | 332  |
| Share capital of FPO                 | Rs. 4,60,000/-   |
| Nature of Business                   | Khoya & Desi Ghee, Tie-up with Amul in Raw Milk Under Process)                 |
| No. of BOD Members                   | 5  |
| Rating/Grading                       | A  |
| E-NAM                                | Registered   |
| Input License                        | FSSAI  |
| Compliances under MCA                | Completed  |
| Custom Hiring Centre                 | N/A  |
| CCDP                                 | N/A  |
| Market committee License             | No   |
| CC Limit                             | 8,60,000   |
| Authorized capital                   | Rs. 10,00,000/-  |
| Turn Over (Rs) FY 2023-24            | 29,00,000  |
| Products                             | Ghee, Khoya and Paneer & Mustard oil   |



Training programme for the farmers of FPO



Milk ATM

**8.3 Name of FPO: Pilana Farmer Producer Company Limited, Baghpat**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | C/o Saguwa Pilana Khas Baghpat Uttar Pradesh 250615   |
| Email ID                             | pilanafpo@gmail.com   |
| Name of contact person of FPO        | Mr. Vinod Tyagi, Mr. Bijendra Tyagi   |
| Contact no. of contact person of FPO | +91 9719 2260 90, +91 7500 1533 70  |
| Registration No./ CIN of FPO         | U01100UP2021PTC149596   |
| Date of Registration                 | July 26, 2021   |
| Total membership                     | 520 (Male 467 & Female 53)  |
| Share capital of FPO                 | Rs. 6,65,000/-  |
| Nature of Business                   | 1.Drip Irrigation Dealership (Finolex) 2. Mustard oil processing 3. Sugarcane & Vegetable 4. Pesticide & Seed |
| No. of BOD Members                   | 5 (4 Male & 1 Female)   |
| Rating/Grading                       | B   |
| E-NAM                                | Registered  |
| Input License                        | FSSAI, GST Registration, Pesticide & Seed License   |
| Compliances under MCA                | Completed   |
| Custom Hiring Centre                 | Yes   |
| CCDP                                 | Sugarcane/Mustard   |
| Market committee License             | Not Required  |
| CC Limit                             | Yes, Rs.5,00,000/-  |
| Authorized capital                   | Rs. 10,00,000/-   |
| Turn Over (Rs) FY 2023-24            | 30,00,000   |
| Products                             | Mustard oil, Seed, Pesticide, Jaggery, Drip irrigation dealership   |



Demonstration of vegetable farming



Interaction with farmers of FPO

**8.4 Name of FPO: Antral Dairy Producer Company Limited, Baghpat**

|                                      |  |
|--------------------------------------|--|
| Address of Reg Office of FPO         | 2, VILLAGE TYODHI, BAGHPAT, Baghpat, Uttar Pradesh, India 250611                                       |
| Email ID                             | antraldfpo@gmail.com   |
| Name of contact person of FPO        | Mr. Praveen Sharma   |
| Contact no. of contact person of FPO | +91 9557 0481 11   |
| Registration No./ CIN of FPO         | U01111UP2021PTC156928  |
| Date of Registration                 | December 15, 2021  |
| Total membership                     | 310  |
| Share capital of FPO                 | Rs.7,56,000/   |
| Nature of Business                   | Processing of packaging of milk, Milk product such as Curd, Paneer, Mawa, Ghee, and Butter, and Sweets |
| No. of BOD Members                   | 7 (3 Male & 4 Female)  |
| Rating/Grading                       | B  |
| E-NAM                                | Registered   |
| Input License                        | No   |
| Compliances under MCA                | Completed  |
| Custom Hiring Centre                 | N/A  |
| CCDP                                 | Not Required   |
| Market committee License             | No   |
| CC Limit                             | Under Process  |
| Authorized capital                   | Rs. 10,00,000/-  |
| Turn Over (Rs) FY 2023-24            | 30,00,000  |
| Products                             | Milk, Dairy Products and Sweets, Ghee, Mawa etc.   |



Interaction with members of FPO



Visit of officials at FPO

**8.5 Name of FPO: Aligarh Potato Seed Company Limited**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | Vill. Heerpur,Husainpur,Aligarh 202123, |
| Email ID                             | Aligarhpotatoseed2022@gmail.com         |
| Name of contact person of FPO        | Jitendra Singh                          |
| Contact no. of contact person of FPO | 8630372106                              |
| Registration No./ CIN of FPO         | U01100UP2022PTC175270                   |
| Date of Registration                 | December 19, 2022                       |
| Total membership                     | 307                                     |
| Share capital of FPO                 | Rs.6,67,000/-                           |
| Nature of Business                   | Potato seed producer                    |
| No. of BOD Members                   | 5 (1 female & 4 male)                   |
| Rating/Grading                       | B                                       |
| E-NAM                                | Yes                                     |
| Input License                        | Yes                                     |
| Compliances under MCA                | Completed                               |
| Custom Hiring Centre                 | Will apply in 24-25                     |
| CCDP                                 | Yes                                     |
| Market committee License             | No                                      |
| CC Limit                             | N/A                                     |
| Authorized capital                   | Rs.15,00,000/-                          |
| Turn Over (Rs) FY 2023-24            | 53,43,000                               |
| Products                             | Pesticide and Potato seed               |



Interaction with members of FPO



Inaugural program of FPO

**8.6 Name of FPO: Gangiri Maize & Potato Processing Producer Company Limited, Aligarh**

|                                      |  |
|--------------------------------------|--|
| Address of Reg Office of FPO         | C/o Kapil Sharma, Village Rehmapur Alampur Rani, C.D Aligarh, 202129 |
| Email ID                             | N/A  |
| Name of contact person of FPO        | Kapil Sharma   |
| Contact no. of contact person of FPO | N/A  |
| Registration No./ CIN of FPO         | U01100UP2022PTC175045  |
| Date of Registration                 | 14th December 2022   |
| Total membership                     | 320  |
| Share capital of FPO                 | Rs.7,06,000/-  |
| Nature of Business                   | Maize and potato processing  |
| No. of BOD Members                   | 5 (1 female & 4 male)  |
| Rating/Grading                       | B  |
| E-NAM                                | Yes  |
| Input License                        | Yes  |
| Compliances under MCA                | Completed  |
| Custom Hiring Centre                 | N/A  |
| CCDP                                 | Maize & Potato   |
| Market committee License             | No   |
| CC Limit                             | N/A  |
| Authorized capital                   | Rs.15,00,000/-   |
| Turn Over (Rs) FY 2023-24            | 57,67,000  |
| Products                             | Seed, pesticide and coming product mustard oil                       |



Interaction with members of FPO



Mobilisation of farmers of FPO



## 8.7 Dairo Greens Milk Producer Company Limited, Karnal

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | Village-Rindal, Karnal                            |
| Email ID                             | N/A   |
| Name of contact person of FPO        | Mr. Rohit Kumar                                   |
| Contact no. of contact person of FPO | 9466623123  |
| Registration No./ CIN of FPO         | U01500HR2023PTC110402                             |
| Date of Registration                 | 03rd April 2023                                   |
| Total membership                     | N/A   |
| Share capital of FPO                 | Rs.5,00,000/-                                     |
| Nature of Business                   | Dairy Farming                                     |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | New-Started                                       |
| E-NAM                                | N/A   |
| Input License                        | N/A   |
| Compliances under MCA                | Completed   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | N/A   |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs.10,00,000/-                                    |
| Turn Over (Rs) FY 2023-24            | 8,00,000  |
| Products                             | Prospective item- Milk, Ghee, Paneer & Khoya etc. |



Training program for farmers of FPO



Mobilisation of farmers of FPO

**8.8 Name of FPO: Shiv Gorakh Farmers Producer Company Limited, Karnal**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | Village-Uncha Samana, Gharaunda, Karnal           |
| Email ID                             | N/A   |
| Name of contact person of FPO        | Mr. Man Mohan                                     |
| Contact no. of contact person of FPO | 9991041234  |
| Registration No./ CIN of FPO         | U01611HR2023PTC110617                             |
| Date of Registration                 | 03rd April 2023                                   |
| Total membership                     | 210   |
| Share capital of FPO                 | Rs.5,00,000/-                                     |
| Nature of Business                   | Dairy farming                                     |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | New-Started                                       |
| E-NAM                                | N/A   |
| Input License                        | N/A   |
| Compliances under MCA                | Completed   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | N/A   |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs.10,00,000/-                                    |
| Turn Over (Rs) FY 2023-24            | 8,00,000  |
| Products                             | Prospective item- Milk, Ghee, Paneer & Khoya etc. |



Mobilisation of farmers of FPO



Training program for FPO members

**8.9 Name of FPO: AgricoIn Fed Farmer Producer Company Limited, Uttar Pradesh**

|                                      |  |
|--------------------------------------|--|
| Address of Reg Office of FPO         | Partawal Chowk, Kaptanganj Road, Partawal, Maharajganj-273301, Uttar Pradesh |
| Email ID                             | agricoIn.fpo2023@gmail.com   |
| Name of contact person of FPO        | Pramod Kumar Patel   |
| Contact no. of contact person of FPO | 9935823451   |
| Registration No./ CIN of FPO         | U01611UP2023PTC183221  |
| Date of Registration                 | 01/06/2023   |
| Total membership                     | 312  |
| Share capital of FPO                 | Rs.2,50,000/-  |
| Nature of Business                   | Medicinal plant and vegetables   |
| No. of BOD Members                   | 5  |
| Rating/Grading                       | B  |
| E-NAM                                | Registered   |
| Input License                        | Fertilizer, Insecticide, Pesticide, Seeds                                    |
| Compliances under MCA                | Yes  |
| Custom Hiring Centre                 | N/A  |
| CCDP                                 | N/A  |
| Market committee License             | N/A  |
| CC Limit                             | N/A  |
| Authorized capital                   | Rs.10,00,000/-   |
| Turn Over (Rs) FY 2023-24            | 2,45,000   |
| Products                             | Medicinal Plants / Vegetables / Fertilizers / Seeds                          |



Interaction with members of FPO



Mobilisation of farmers of FPO

**8.10 Name of FPO: Paniyara Fed Vegetable Farmer Producer Company Limited, Maharajganj**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | Beltikara, Rajaurakhurd, Paniyara, Maharajganj-273158,Uttar Pradesh |
| Email ID                             | paniyara.vegfpo@gmail.com   |
| Name of contact person of FPO        | Deepchandra Gupta   |
| Contact no. of contact person of FPO | 9628196491  |
| Registration No./ CIN of FPO         | U01611UP2023PTC181440   |
| Date of Registration                 | 04/05/2023  |
| Total membership                     | 310   |
| Share capital of FPO                 | Rs.2,50,000/-   |
| Nature of Business                   | Vegetables  |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | B   |
| E-NAM                                | Registered  |
| Input License                        | Fertilizer, Insecticide, Pesticide, Seeds                           |
| Compliances under MCA                | Yes   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | N/A   |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs.10,00,000/-  |
| Turn Over (Rs) FY 2023-24            | 5,50,000  |
| Products                             | Fresh Vegetables / Fertilizers / Seeds                              |



Awareness program for FPO farmers



Sales training program for FPO farmers

**8.11 Name of FPO: Adigauri Fed Farmer Producer Company Limited, Maharajganj**

|                                      |  |
|--------------------------------------|--|
| Address of Reg Office of FPO         | Mahuari,Lalpur,Brijmanganj, Maharajganj-273157 |
| Email ID                             | adigaurifpo2023@gmail.com                      |
| Name of contact person of FPO        | Padmendra Singh                                |
| Contact no. of contact person of FPO | 7236002675                                     |
| Registration No./ CIN of FPO         | U01611UP2023PTC183357                          |
| Date of Registration                 | 02/06/2023                                     |
| Total membership                     | 310  |
| Share capital of FPO                 | Rs.2,50,000/-                                  |
| Nature of Business                   | Cereals and Millets                            |
| No. of BOD Members                   | 5  |
| Rating/Grading                       | B  |
| E-NAM                                | Yes  |
| Input License                        | Cereals and Millets                            |
| Compliances under MCA                | Yes  |
| Custom Hiring Centre                 | N/A  |
| CCDP                                 | N/A  |
| Market committee License             | N/A  |
| CC Limit                             | N/A  |
| Authorized capital                   | Rs.15,00,000/-                                 |
| Turn Over (Rs) FY 2023-24            | 15,60,000                                      |
| Products                             | Millets / Fertilizers / Seeds                  |



Interaction with farmers



Display of products for sales

**8.12 Name of FPO: Siswa Maharajganj Banana & Vegetables Fed Farmer Producer Company Ltd.**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | House n. 2, Near Police Chowki, Bandi Dhala, Munderi, Siswa, Maharajganj-273151 |
| Email ID                             | siswamrj.bnanafpo1278@gmail.com   |
| Name of contact person of FPO        | Virendra Pal  |
| Contact no. of contact person of FPO | 9454383651  |
| Registration No./ CIN of FPO         | U01611UP2023PTC181278   |
| Date of Registration                 | 01/05/2023  |
| Total membership                     | 309   |
| Share capital of FPO                 | Rs.3,02,000/-   |
| Nature of Business                   | Vegetables & Banana   |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | B   |
| E-NAM                                | Registered  |
| Input License                        | Fertilizer, Insecticide, Pesticide, Seeds                                       |
| Compliances under MCA                | Yes   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | N/A   |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs.10,00,000/-  |
| Turn Over (Rs) FY 2023-24            | 30,50,000   |
| Products                             | Fresh Vegetable, Fertilizers, Seeds   |



Interaction with members of FPO



Visit of officials at FPO

**8.13 Name of FPO: Sohagibarwa Vegetables Fed Farmer Producer Company Ltd., Maharajganj**

|                                      |   |
|--------------------------------------|---|
| Address of Reg Office of FPO         | NH-730,Police Chowki, Pakara Chauraha,Maharajganj, 273303 |
| Email ID                             | svegetables.fpo186@gmail.com                              |
| Name of contact person of FPO        | Govind Yadav  |
| Contact no. of contact person of FPO | 8881643567  |
| Registration No./ CIN of FPO         | U01611UP2023PTC186328                                     |
| Date of Registration                 | 26/07/2023  |
| Total membership                     | 310   |
| Share capital of FPO                 | Rs.4,00,000/-   |
| Nature of Business                   | Vegetables Production and Bulk marketing                  |
| No. of BOD Members                   | 5   |
| Rating/Grading                       | B   |
| E-NAM                                | Registered  |
| Input License                        | Fertilizer, Insecticide, Pesticide, Seeds                 |
| Compliances under MCA                | Yes   |
| Custom Hiring Centre                 | N/A   |
| CCDP                                 | N/A   |
| Market committee License             | N/A   |
| CC Limit                             | N/A   |
| Authorized capital                   | Rs.10,00,000/-  |
| Turn Over (Rs) FY 2023-24            | 12,10,510   |
| Products                             | Fresh Vegetable, Fertilizers, Seeds                       |



Awareness program for farmers of FPO



Mobilisation of farmers

## Initiatives Enriching the Employee Experience & Engagement



Egg Day Celebration



Eye Checkup Camp



Friday Development Hours



Sustainability Day



Independence Day Celebration



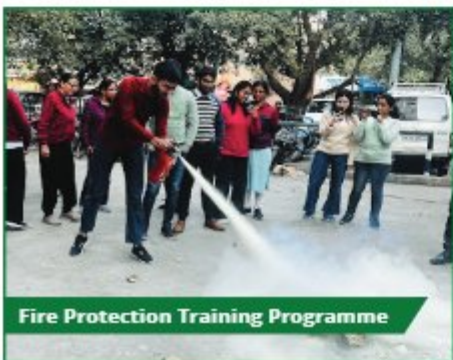
Diwali Celebration



Christmas Celebration



New Year Celebration



Fire Protection Training Programme



Annual Health Checkup



Holi Celebration



## 9. Training

### Accreditation /Certification:

ARF Test House is a part of ARF, located at Village Chidana, Tehsil Gohana, Sonapat, Haryana which is accredited with NABL by Ministry of Commerce & Industry, Govt. of India, permitted to conduct chemical and microbiological testing of feed, herbs, spices, condiments, milk and dairy products, packaged drinking and natural mineral waters. NABL first onsite surveillance audit was successfully conducted in Feb 2023.

#### i. Visit to RGIPT



Visit to Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Jais for identification of collaborative research areas and funding agencies for the project calls in the identified areas.

#### ii. Visit to Shobhit University



Collaboration for new project research visit to Shobhit University.

#### iii. Visit of Dr. Ashish Hooda, Veterinary Surgeon, Haryana



Dr. Ashish Hooda (Govt. Vet.Surg., Haryana) visited ARF for certificate distribution program on rural entrepreneurship development training program on artificial insemination & animal health.

#### iv. Participation in Biochar meet



Dr. Puneet Pathak participated in MSME Hyderabad for two days seminar on Biochar status and opportunities.

#### v. Visit of Dr. ASK Sinha and his team to Chidana



RGPIT Dr. A. S. K Sinha (Director), and team visited ARF for research project collaboration on 21st August 2023.

**vi. Visit to NDRI, Karnal**



ARF team members visited NDRI Karnal and met with its Director for inking MoU for collaborative research on 18th November 2023.

**vii. Visit of Dr. Chhavi Sharma to ARF**



Dr. Chhavi Sharma, Assistant Professor, Department of Biotechnology, Chandigarh University (CU), Mohali visited ARF on 01 January 2024 for Collaborative Research Projects.

**b) NABL external training:**

- i. Ms. Shashi Prabha Yadav, Mr. Somveer (January 2024) and Ms. Kirti (March 2024) attended training on Laboratory Quality management system and Internal Audit as per IS/ISO/IEC 17025:2017 organized by Quality Fusion of India.
- ii. AI Training under entrepreneurship skill development training program on Artificial Insemination in DUVASU, Mathura, UP from 26th

June to 1st July 2023.



- iii. External fire training for all ARF staff on 28th December 2023.



- iv. AI Training under entrepreneurship skill development training program (6 Days) on Artificial Insemination in DUVASU, Mathura, UP from 7th - 13th January 2024.



### c) ARF Webinar Series:

ARF through its webinar series has organized 7 webinars. The objective of these webinars was to share the knowledge with the farming community to improve their farm productivity and income.



#### List of Webinars:

1. Multilayer farming of vegetable crops: A successful efforts towards doubling farmers' income.
2. Biochar for soil health management and carbon credits.
3. Millets of health and environment sustainability.
4. Phytopharmaceuticals: An emerging platform for innovation and development of new drugs from botanicals.
5. Doubling farm income and rural entrepreneurship development.
6. Multilayer farming: Impact of soil health on productivity.
7. Skilling of farmers: Developing Quality planting material for cultivation of medicinal plants.

## 10. ARF Publications

The team at ARF made at constant efforts to communicate its research through publications and lead articles in various scientific journals and important magazines. During the year, ARF published 17 articles and 6 articles for publication are in pipeline.

1. IMPORTANCE OF INDIGENOUS COW DUNG AND ITS MICROBIOTA. Banerjee, S., Kanaujia, A, Sharma S., International Journal of Current

Microbiology and Applied Sciences (2023) 12(4):26-36

2. ZERO BUDGET SPIRITUAL FARMING (ZBSF), International Journal of Environmental & Agriculture Research (IJOEAR)] [Vol-9, Issue-4, April- 2023]
3. E-MARKETING PLATFORM FOR BETTER REACH & BENEFIT OF FPOS, Kirti Sharma, Anil Kanaujia, Mohan Ji Saxena, Anup Kaira, International Journal of Veterinary Science and Agriculture Research, 2023, Volume 5 Issue 4, July-August, 1-5
4. POST HARVEST MANAGEMENT, MINIMIZING FRUITS & VEGETABLES SPOILAGE, AGRICULTURE TODAY, Kirti Sharma, Anil Kanaujia, Aparajita Das, & Mohan Ji Saxena [Vol-XXVI, Issue-7, pp.50-51, July- 2023]
5. NUTRITIONAL IMPORTANCE AND BIOAVAILABILITY OF PLANT PROTEINS IN HUMAN SYSTEM, Kirti Sharma, Anil Kanaujia, Vandita Srivastava, Mohan Ji Saxena, Anup Kalra, Annals of Plant Sciences, 2023, Volume 12, Issue 08, pp. 5926-5930
6. TRANSFORMING AGRI-CROP RESIDUE BIOMASS FOR VALUE ADDITION: AN INNOVATIVE STRATEGY TOWARD RESILIENT CIRCULAR ECONOMY, Sharma, C., Pathak, P., Gautam, S. (2023). In: Thomas, S., Hosur, M., Pasquini, D., Jose Chirayil, C. (eds) Handbook of Biomass. Springer, Singapore. [https://doi.org/10.1007/978-981-19-6772-6\\_6](https://doi.org/10.1007/978-981-19-6772-6_6) 6-1
7. VALUE ADDED VERICOMPOST FOR BETTER FARM PROFITS, Kirti Sharma, Anil Kanaujia, Mohan Ji Saxena, Anup Kalra, International Journal of Advances in Agricultural Science & Technology, Vol.10 Issue.8, August 2023, pg. 1-6.
8. ROLE OF MILLETS IN ACHIEVING SUSTAINABLE DEVELOPMENTAL GOALS (SDG), ENVIRONMENT & HEALTH ISSUES, Kirti Sharma, Anil Kanaujia, Vivek Kumar, Mohan Ji Saxena and Anup Kalra, International Journal of Recent Advances in Multidisciplinary Research, Vol. 10, Issue 09, pp.8871-8873, September 2023
9. MICROPLASTICS IN AQUATIC AND FOOD ECOSYSTEMS: REMEDIATION COUPLED WITH CIRCULAR ECONOMY SOLUTIONS TO CREATE

- RESOURCE FROM WASTE. Dhiman, S., Sharma, C., Kumar, A., Pathak, P., & Purohit, S. D. (2023) *Sustainability* 15(19), 14184. <https://doi.org/10.3390/su151914184>
10. A CASE STUDY OF MULTILAYER FARMING IN MURADNAGAR BLOCK OF GHAZIABAD: AN APPROACH FOR BETTER YIELD AND INCREASED FARM INCOME, Aparajita Das, Priya Kaur, Akshay Tyagi, Shivanshu Kaletha, Puneet Pathak, Anup Kalra and Mohan Ji Saxena, *International Journal of Agriculture Extension and Social Development*. Volume 7; Issue 3; March 2024; Page No. 280-291.
  11. HEALTH AND THERAPEUTIC USES OF TULSI (HOLY BASIL), Shashi Prabha Yadav, Puneet Pathak Anil Kanaujia, Aparajita Das, Mohan Ji Saxena, Anup Kalra, *Octa Journal of Environmental Research*. Vol. 12(01): 004-015, March 2024.
  12. BIOMASS DERIVED BIOCHAR FOR ENVIRONMENTAL REMEDIATION, Sharma, C., Saxena J., Pathak P, Kumar S., In *Handbook of Biomass Derived Materials for Environmental Remediation*. Edited by: Sabu Thomas, Cintil Jose Chirayil, Rini Thresia Varghese, Springer (Accepted)
  13. VALORIZATION OF RICE STRAW FOR ETHANOL PRODUCTION AND LIGNIN RECOVERY THROUGH ACIDIC AND ALKALINE PRE-TREATMENTS, Pathak P, Sharma C., Gautam S., Yadav S.P., Das A. In "Black liquor waste management in the pulp and paper industry" Ed. Dr. Suresh Sundaramurthy et al., Springer (Accepted)
  14. EFFECTS OF GENETICALLY MODIFIED PLANTS PRODUCTS ON THE HUMAN AND ENVIRONMENT, Anil Rathee, Puneet Pathak, Anil Kanaujia, Somveer Beniwal, *International Journal of Recent Advances in Multidisciplinary Research (IJRAMR)*, (Accepted)
  15. PICRORHIZA KURROA: NATURE'S BENIGNITY UNDER THREAT, Kanaujia A., Bhatt N., Rakesh R. K., Pathak P, Saxena M. J., Kalra A. (2024), *International Journal of Recent Advances in Multidisciplinary Research (IJRAMR)* (Accepted)
  16. THE POTENTIAL OF BACTERIAL NANOCELLULOSE-BASED HYDROGEL AND ITS NANOCOMPOSITES AS COATING MATERIALS IN REGENERATIVE BIOMEDICINE, Sharma C., Potdar P, Kumar S. Gautam S. Pathak P. In Kulkarni S. et al. (Eds.) "Medical Applications of Biocompatible Surfaces and Coatings" (Accepted)
  17. QUALITY CONTROL MEASURES FOR BETTER HUMAN AND LIVESTOCK HEALTH, Kanaujia A., Pathak P, Rathee A., Sharma K., Beniwal S., Yadav S. P. (2024) *International Journal of Advances in Agricultural Science and Technology* (Accepted)
- ### 10.1 List of submitted papers
1. Sapna, Chhavi Sharma, Puneet Pathak, Shashi Prabha Yadav, Sneha Gautam, Potential of emerging "all-natural" edible coatings to prevent post-harvest losses of vegetables and fruits for sustainable agriculture, *Progress in Organic Coatings*.
  2. Chhavi Sharma, Puneet Pathak, Anshul Sharma, *Phytochemicals in Herbal Medicine: Traditional Remedies and Modern Applications*; Editors/Authors: Tanmay Sarkar, slim smaoui, Wing-Fu Lai; In *Phytoceuticals in Food for Health and Wellness: Harnessing Plant Therapeutics*
  3. Chhavi Sharma, Puneet Pathak, Anuj Kumar, Sneha Gautam, *Sustainable Regenerative Agriculture Allied with Digital Agri-Technologies and Future Perspectives for Transforming Agrarian Sector*, Environment, Development and Sustainability
  4. Shashi Prabha Yadav , Chhavi Sharma, Puneet Pathak, Anil Kanaujia, Mohan Ji Saxena, Anup Kalra, *E-waste Management by Environment-friendly Microbial Approaches: Micro-remediation*, *Environmental Science: Advances*, RSC
  5. Shashi Prabha Yadav, Chhavi Sharma, Puneet Pathak, Sapna, Anil Kanaujia, Mohan Ji Saxena, Anup Kalra, *Management of Phyto-Parasitic Nematodes Using Bacteria and Fungi and their Consortia as Biocontrol Agents*, *Environmental Science: Advances*, RSC
  6. Anil Kanaujia, Mohan ji Saxena, Anup Kalra, Puneet Pathak, *The Inorganic Conjugates as Bio actives in Herbs as Co adjuvant for Biological Efficacy*, *International Journal of Current Research*.



## 11. ARF in Media



## Financials

**AGRILIV RESEARCH FOUNDATION**  
4TH FLOOR, SAGAR PLAZA, DIST.CENTRE, LAXMI NAGAR, DELHI -110092

BALANCE SHEET AS AT 31st MARCH, 2024

| PARTICULARS                                     | SCHEDULES | AS AT 31ST<br>MARCH,2024<br>(Rs.) | AS AT 31ST<br>MARCH,2023<br>(Rs.) |
|---|-----------|-----------------------------------|-----------------------------------|
| <b><u>SOURCES OF FUNDS</u></b>                  |           |                                   |                                   |
| TRUST FUND                                      |           | 3,18,25,000                       | 3,18,25,000                       |
| CORPUS FUND                                     |           | 5,50,00,000                       | 4,50,00,000                       |
| GRANTS  | A         | 39,20,836                         | 4,33,637                          |
| GRANT AGAINST FIXED ASSETS                      |           | 41,26,678                         | 41,26,678                         |
| ACCUMULATED DEPRECIATION                        | B         | 2,99,20,493                       | 2,74,47,776                       |
| <b>TOTAL</b>                                    |           | <b>12,47,93,007</b>               | <b>10,88,33,091</b>               |
| <b><u>APPLICATION OF FUNDS</u></b>              |           |                                   |                                   |
| FIXED ASSETS                                    | B         | 4,76,06,590                       | 4,66,47,343                       |
| FIXED ASSETS AGAINST GRANT                      | BA        | 41,26,678                         | 41,26,678                         |
| <b>CURRENT ASSETS, LOANS<br/>AND ADVANCES :</b> | C         |                                   |                                   |
| A) SUNDRY DEBTORS                               |           | 18,83,985                         | 6,35,050                          |
| B) CASH & BANK BALANCES                         |           | 65,74,083                         | 54,27,636                         |
| C) INVESTMENTS                                  |           | 5,56,24,819                       | 4,05,00,000                       |
| D) LOANS & ADVANCES                             |           | 20,37,102                         | 40,24,295                         |
|   |           | 6,61,19,989                       | 5,05,86,980                       |
| LESS: CURRENT LIABILITIES<br>AND PROVISIONS     | D         | 62,70,492                         | 5,98,49,496                       |
|   |           | 38,65,679                         | 4,67,21,301                       |
| INCOME & EXPENDITURE A/C                        |           | 1,32,10,243                       | 1,13,37,769                       |
| <b>TOTAL</b>                                    |           | <b>12,47,93,007</b>               | <b>10,88,33,091</b>               |

**NOTES TO ACCOUNTS**

1 & 2

FOR SANDY ASSOCIATES  
CHARTERED ACCOUNTANTS  
FRN - 007337N

SANDEEP GUPTA  
PROPRIETOR  
M. NO - 086069



FOR AND ON BEHALF OF THE BOARD

MOHANJI SAXENA  
MANAGING TRUSTEE

PRADIP BURMAN  
CHAIRMAN/TRUSTEE

PLACE: DELHI

DATED: 23rd May, 2024

## Financials

**AGRILIV RESEARCH FOUNDATION**  
4TH FLOOR, SAGAR PLAZA, DIST.CENTRE, LAXMI NAGAR, DELHI -110092

INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON 31st March, 2024

| PARTICULARS                               | SCHEDULE | FOR THE YEAR<br>2023-24<br>(Rs.) | FOR THE YEAR<br>2022-23<br>(Rs.) |
|---|----------|----------------------------------|----------------------------------|
| <b><u>A) INCOME</u></b>                   | E        |                                  |                                  |
| DONATIONS                                 |          | 2,25,05,000                      | 2,62,45,283                      |
| INTEREST INCOME                           |          | 33,66,557                        | 18,51,372                        |
| GOVERNMENT GRANT UTILIZED                 |          | 94,05,784                        | 79,84,192                        |
| SALES                                     |          | 29,95,350                        | 18,37,600                        |
| TRAINING FEE/OTHER INCOME                 |          | 35,50,552                        | 19,10,898                        |
|   |          | 4,18,23,243                      | 3,98,29,345                      |
| <b><u>B) EXPENDITURE</u></b>              |          |                                  |                                  |
| EMPLOYEES COST                            | F        | 1,57,59,357                      | 1,33,87,048                      |
| OTHER EXPENSES                            | G        | 2,54,63,644                      | 2,45,29,313                      |
| DEPRECIATION                              | B        | 24,72,717                        | 26,33,244                        |
|   |          | 4,36,95,717                      | 4,05,49,605                      |
| TOTAL NET EXPENDITURE                     |          |                                  |                                  |
| SURPLUS/DEFICIT FOR THE YEAR CARRIED DOWN |          | (18,72,474)                      | (7,20,260)                       |
| Prior Period Adjustments                  |          | (18,72,474)                      | (7,20,260)                       |
| SURPLUS/DEFICIT BROUGHT FORWARD           |          | (1,13,37,769)                    | (1,06,17,509)                    |
| BALANCE CARRIED OVER TO BALANCE SHEET     |          | (1,32,10,243)                    | (1,13,37,769)                    |

AS PER OUR REPORT OF EVEN DATED ATTACHED

FOR SANDY ASSOCIATES  
CHARTERED ACCOUNTANTS  
FRN - 007337N

SANDEEP GUPTA  
PROPRIETOR  
M. NO - 086069









PLACE: DELHI  
DATED: 23rd May, 2024

FOR AND ON BEHALF OF THE BOARD

*Mohanji Saxena*  
MOHANJI SAXENA  
MANAGING TRUSTEE







*Burman*  
PRADIP BURMAN  
CHAIRMAN/TRUSTEE

## Our Esteemed Collaborators

|   |                        |   |
|---|------------------------|---|
|    | <p><b>RAJUVAS</b></p>  | <p>Rajasthan University of Veterinary and Animal Science Bikaner, Rajasthan</p>                                       |
|    | <p><b>DUVASU</b></p>   | <p>U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan, Mathura, U.P.</p> |
|    | <p><b>MAFSU</b></p>    | <p>Maharashtra Animal &amp; Fishery Sciences University Nagpur, Maharashtra</p>                                       |
|  | <p><b>NDVASU</b></p>   | <p>Nanaji Deshmukh Veterinary and Animal Science University Jabalpur, M.P.</p>  |
|  | <p><b>LUVAS</b></p>    | <p>Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Haryana</p>                                   |
|  | <p><b>NABARD</b></p>   | <p>National Bank for Agriculture and Rural Development</p>  |
|  | <p><b>GLA</b></p>      | <p>Ganeshi Lal Aggarwal University, Mathura, U.P.</p>   |
|  | <p><b>SKUAST-J</b></p> | <p>Sher-e-Kashmir University of Agricultural Sciences and Technology, Jammu, J&amp;K</p>                              |

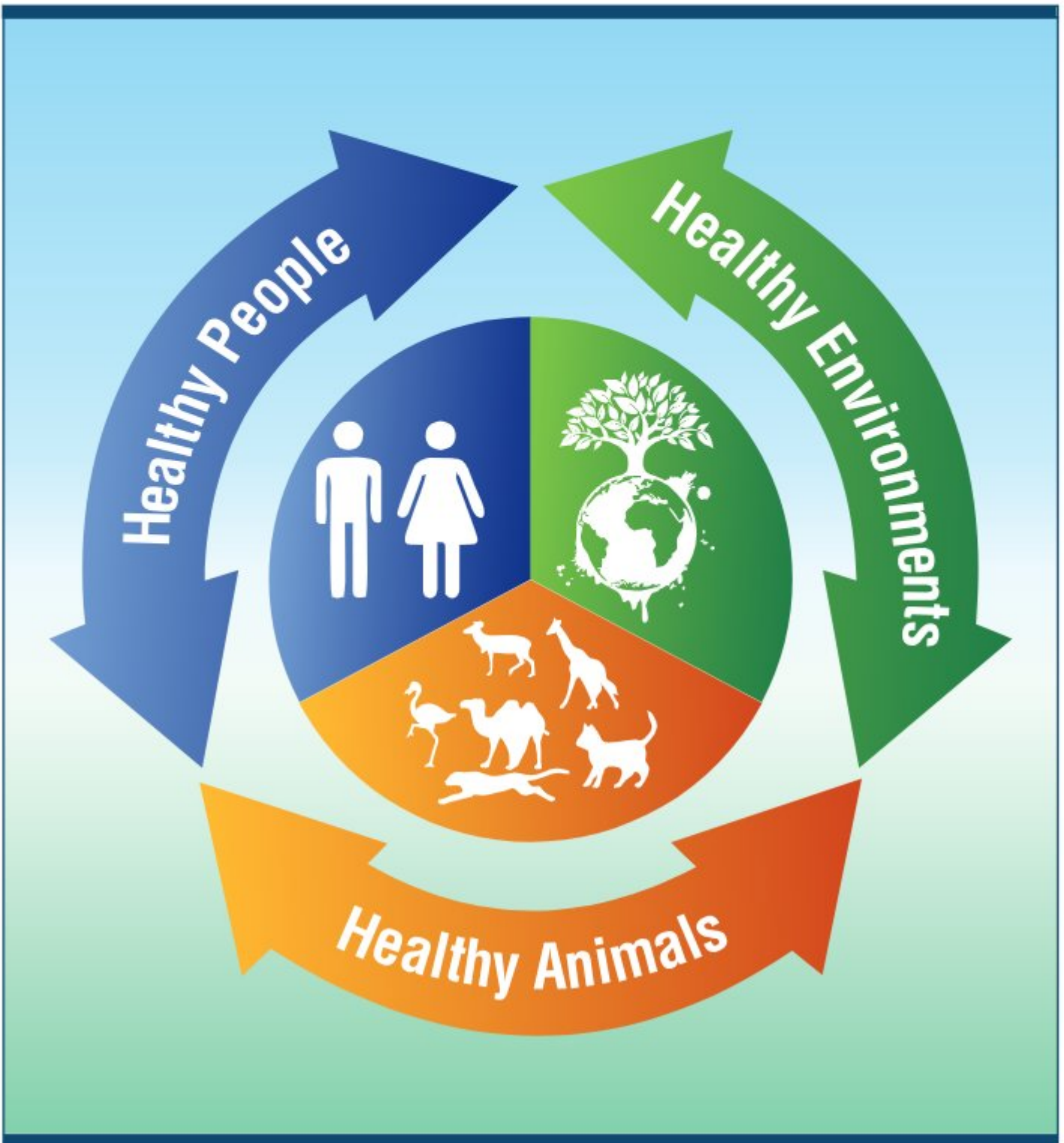


## Our Esteemed Collaborators

|   |                |  |
|---|----------------|--|
|    | <b>AAU</b>     | <b>Assam Agricultural University, Jorhat, Assam</b>                                |
|    | <b>NMPB</b>    | <b>National Medicinal Plant Board, New Delhi</b>                                   |
|    | <b>CAU</b>     | <b>Central Agriculture University, Imphal, Manipur</b>                             |
|   | <b>SVPDAT</b>  | <b>Sardar Vallabhbhai Patel University of Agriculture &amp; Technology, Meerut</b> |
|  | <b>NABCON</b>  | <b>NABARD Consultancy Services Private Limited</b>                                 |
|  | <b>NDRI</b>    | <b>National Dairy Research Institute, Karnal</b>                                   |
|  | <b>SHOBHIT</b> | <b>Shobhit University, Meerut</b>  |
|  | <b>RGIPAT</b>  | <b>Rajiv Gandhi Institute of Petroleum Technology, Amethi</b>                      |

# 1 Health

Our Health is “the collaborative efforts of multiple discipline working locally, nationally, and globally to attain optimal health for People, Animals and our Environment” as defined by the one health Initiative Task Force.





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