



Farm women *Breaking barriers*

Leisa India is published quarterly by AME Foundation

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Blustream Printing (India) Pvt. Ltd., Bangalore

COVER PHOTO

*Women, provided with support and opportunity,
can manage healthy farms and farm enterprises,
successfully.*

(Photo: WASSAN, GRAVIS, RKMVERI, BAIF)

LEISA India Editions

English
Hindi
Kannada
Tamil
Telugu
Oriya
Punjabi
Marathi

www.leisaindia.org

The editors have taken every care to ensure
that the contents of this magazine are as accurate as
possible. The authors have ultimate responsibility,
however, for the content of individual articles.

The editors encourage readers to photocopy
and circulate magazine articles.

Dear Readers



Twenty five year completion is a momentous occasion for any initiative. More so, when it is a magazine – one devoted to sharing alternative ecological agriculture grassroot practical experiences from the field. LEISA India has created uniqueness about itself by its contextual relevance, emulatable content and didactically evolved presentation. This reality has been made possible primarily by relentless passion of hundreds of authors willing to share their learnings and thousands of readers keen to learn from others.

Beginning as an Indian English edition, integrating Indian and international experiences, the magazine soon emerged as a primary knowledge sharing tool of small holder ecological experiences from India. Gradually, with enthusiastic practitioners support from all over India, it spread out to Hindi, Kannada, Telugu, Tamil, Marathi, Punjabi and Oriya translated editions. The donor support came from ILEIA, Netherlands for over a decade and later MISEREOR, Germany for over 15 years. All along, individuals keen on this initiative provided voluntary contributions too.

Coming to this issue, the examples included reiterate that what women require to excel is - an equal opportunity. They can manage innovation, organic farming, farm as well as non farm enterprises besides their regular household responsibilities. Being naturally blessed to handle multitasking, sometimes, they do require training on specific skills as well as an ecosystem fostering their managerial acumen. Their confidence levels and self esteem blossoms much more when organized as women led institutions. Naturally, they do attract accolades and awards for their excellence and commitment. Their holistic perspective towards healthy well being of all – the family, the community as well as ecology, is exemplary. Hope you all get inspired too by these path breaking cases of women.

The Editors

LEISA is about Low-External-Input and Sustainable Agriculture. It is about the technical and social options open to farmers who seek to improve productivity and income in an ecologically sound way. LEISA is about the optimal use of local resources and natural processes and, if necessary, the safe and efficient use of external inputs. It is about the empowerment of male and female farmers and the communities who seek to build their future on the bases of their own knowledge, skills, values, culture and institutions. LEISA is also about participatory methodologies to strengthen the capacity of farmers and other actors, to improve agriculture and adapt it to changing needs and conditions. LEISA seeks to combine indigenous and scientific knowledge and to influence policy formulation to create a conducive environment for its further development. LEISA is a concept, an approach and a political message.

MISEREOR founded in 1958 is the German Catholic Bishops' Organisation for Development Cooperation. For over 50 years MISEREOR has been committed to fighting poverty in Africa, Asia and Latin America. MISEREOR's support is available to any human being in need – regardless of their religion, ethnicity or gender. MISEREOR believes in supporting initiatives driven and owned by the poor and the disadvantaged. It prefers to work in partnership with its local partners. Together with the beneficiaries, the partners involved help shape local development processes and implement the projects. This is how MISEREOR, together with its partners, responds to constantly changing challenges. (www.misereor.de; www.misereor.org)

AME Foundation promotes sustainable livelihoods through combining indigenous knowledge and innovative technologies for Low-External-Input natural resource management. Towards this objective, AME Foundation works with small and marginal farmers in the Deccan Plateau region by generating farming alternatives, enriching the knowledge base, training, linking development agencies and sharing experience.

AMEF is working closely with interested groups of farmers in clusters of villages, to enable them to generate and adopt alternative farming practices. These locations with enhanced visibility are utilised as learning situations for practitioners and promoters of eco-farming systems, which includes NGOs and NGO networks. www.amefound.org

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Farm women

Breaking barriers

Rural women traditionally have been entrepreneurial. Women as a part of their livelihoods and lives have been involved in several tasks related to farming like dairying, sericulture, processing and local marketing of vegetables. However, they are not recognised as entrepreneurs as their efforts do not fit within the conventional definition of an enterprise.

The rapid feminisation of Indian agriculture with men leaving for greener pastures has in a way forced women to take on entrepreneurial roles, besides managing farms. They do not however have an easy path to traverse, when they begin their journey. They are faced with numerous challenges. For example, the pressure to stick to their traditional gender roles, lack of family and social support which further leads to lack of confidence, lack of access to training, finance and other support systems.

There is a growing realisation that the nation cannot achieve the desired economic growth by ignoring half of its population. The government has devised a number of schemes and policies to support women entrepreneurs in India. With substantial support from the government as well as handholding support from various other institutions working towards rural development, rural women entrepreneurship is finally gaining momentum. This issue celebrates the grit and courage of some of the rural woman farm entrepreneurs, in creating a space for themselves, both as individuals as well as a collective.

Passion to excel

Fierce determination to pursue one's passion can also defy advancing age and can result in achieving spectacular success as an entrepreneur. This is proved by two women – One, Ms. Subhadra Kumari, a 63-year-

old visionary behind Nila Garden, who has nourished an enterprise nestled in the serene landscapes of Wayanad, Kerala embodying her passion and a deep-rooted love for orchids. (Archana Bhatt, Sreeram V and Abdulla Habeeb, p.15). Similarly, Smt. Indumathi, starting as a hobbyist and evolving into an entrepreneurial farmer, has come a long way. Defying advancing age, she has proved that farm incomes could be enhanced by diversifying, practicing organic farming and using drudgery reducing farm machinery. Her enthusiasm for farming suggests that learning new skills and engaging in agricultural endeavour is not age-related. (Vijaya Hosamani and Mala Patil, p.21)

In the pursuit of producing safe food, women are the forerunners in embracing organic farming. Mrs. Hitesh Choudhary of Uttar Pradesh and Mrs. Savitha Yelne from Maharashtra, with a deep interest in organic farming, got trained and started using organic farming methods. By developing connections with markets, generating income, and enhancing their own and their communities' quality of life, these entrepreneurs have also received several awards. Additionally, they are encouraging and supporting other women to pursue organic farming as a viable and long-term career. (Pawan Kumar, Manohari Rath and Apurva Tiwari, p.30)

Supportive systems is the key

In order to conquer the challenges faced by rural women wanting to pursue entrepreneurship, a supportive environment that offers mentorship along with skill training, value addition, improved financial access, risk sharing and market collaborations must be nurtured. Several institutions are supporting in various ways in nurturing women entrepreneurship. GRAVIS has been able to overcome some of the challenges by

mobilising farmers as a collective. The emergence of Farmer Producer Organisations (FPOs) has proven to be beneficial for small and marginal farmers and have enabled them to come together, access better markets and enhance their economic potential. GRAVIS, currently working with 2 FPOs and 50 FIGs, has ensured that at least 33% of the members are women participating fully in decision making and market related activities. Around 1000 small and marginal cumin and coriander growers of Osian and Phalodi Blocks in Jodhpur district, Rajasthan, have begun to conduct business collectively through the FIGs and FPOs. There has been a substantial increase in the individual and group capacity of the spice farmers. (Krupa Gandhi, p.8).

With a little support from BAIF, Champion farm women in Karnataka, Maharashtra and Madhya Pradesh have shown that women can be empowered to handle farm operations as well as farm machinery with confidence and pride. The farm machineries access enabled timely farming operations and efficient use of inputs; adoption of climate resilient practices and technologies by farmers; drudgery reduction; increase in cropping intensity; crop residue recycling and prevention of burning of agricultural crop residues; reduction in cost of cultivation and creating work opportunities for skilled labour and small artisans. (Sujata Kangude, p.6).

Odisha Millets Mission and Mission Shakti department have been successfully promoting WSHG-led millet-based farm enterprises across Odisha, strengthening livelihoods and improving household income. The revival of millets in Odisha has instilled a sense of confidence among women groups, helping them to beat poverty and malnutrition. (Abhijit Mohanty, Bhesaja Choudhury and Trinath Taraputia, p.33)

The convergent model promoted by the local KVK has broken the barriers of development and unleashed the potential of women groups of South Paraganas district. Women have successfully taken up turkey farming. The assured marketing linkages along with technological backstopping by KVK, ICAR -IVRI and Animal Resource Development Department of Government of West Bengal have made the program a successful one. (Sarbaswarup Ghosh and Narayan Chandra Sahu, p.24)

Smt. Manjula, trained and supported under the Nutri Smart village of University of Agricultural Sciences,



Dharwad, Karnataka, has adopted farm diversification. By integrating various enterprises into a farming system she could meet multiple needs like food and nutritional security, enhanced incomes and optimal utilisation of resources. (Rajeshwari Desai and Geeta Channal, p.19)

With handholding and training support from BAIF, women entrepreneurs in Maharashtra have developed confidence to provide quality goods and services. Kalsubai Parisar Biyane Sanvardhan Samajik Sanstha (Kalsubai Seed Savers' Group) was formed in Akole block of Ahmednagar district of Maharashtra in 2015 to conserve and revive agrobiodiversity. This group has established three seed banks and conserved 118 accessions of 40 crops including rice, millets and pulses. The group has also been involved in production and sale of more than 21,600 kitchen garden kits and around 39 metric tons of quality seeds. Women from the community have been trained as resource persons, called Poshan Sakhi. From an invisible contribution which was limited to the confines of their homes or on the fields, they have now emerged as visible, successful entrepreneurs with greater social acceptance. (Rajashree Joshi and Santarpana Choudhury, p.12).

Promoting women led agricultural enterprises will have an effect far beyond the economy. is no more a choice but a necessity for sustainable development. It will help reduce poverty, generate employment, unleash social development and move towards a more gender-equal society.



Farm mechanisation driven by women farmers

Sujata Kangude

Women can be empowered to handle farm operations as well as farm machinery with confidence and pride, if proper support systems are provided. With a little support from BAIF, Champion farm women in Karnataka, Maharashtra and Madhya Pradesh have shown that besides handling farm equipments and increasing farm productivity, they can also empower other women.

Sustainable agriculture demands the participation of women in agriculture. According to the World Bank and FAO data of 2009, 80% of rural women of small landholding families have been involved in agricultural activities as most of the men have migrated. However, the irony is that a majority of these women worked as farm labourers.

Due to non-availability of labour force during peak agricultural operations, use of agricultural machinery becomes inevitable. Thus, mechanization of farming operations started gaining popularity. As the machinery is often costly and its use is only for a limited period, its purchase by individual farmers is not cost-effective.

BAIF Development Research Foundation, championing women empowerment in all its programmes, promoted Custom Hiring Centres (CHCs). CHCs were promoted through Project *Prerna* - an empowering model focussed on engagement of women farmers for crop

productivity enhancement and promotion of farm mechanization at the grassroots level. Through the project, Custom Hiring Centres were set up by six Self Help Groups (SHGs) in Karnataka, Maharashtra and Madhya Pradesh.

Women farmers were empowered to manage farms leading to higher crop productivity



The capacities of the SHG members were developed through training and exposure visits to innovative farmers accompanied by expert sessions by the project team. The study visits helped them to understand the day-to-day operations as well as how to manage an enterprise. With growing confidence and abilities, they carried out farm-related activities without further assistance and guidance from the men in the families.

Farm machineries and their use

The farm machineries access enabled timely farming operations and efficient use of inputs; adoption of climate resilient practices and technologies by farmers; drudgery reduction; increase in cropping intensity; crop residue recycling and prevention of burning of agricultural crop residues; reduction in cost of cultivation and creating work opportunities for skilled labour and small artisans.

The farm machineries available at these custom hiring centres included seed drills, power weeders, sprayers, rotavators, onion sowing machine, weeders, ragi harvesters and other farm-based equipment. The women observed that with the availability of drip and sprinkler sets, more area could be brought under irrigation with the same amount of water. Seed-cum-fertilizer drills helped in introducing or expanding the intercropping area, ensured efficient use of expensive chemical fertilizers and thereby reduced nitrous oxide emissions while reducing the cost of cultivation. The equipment available in the centres were light in weight, easy to operate and efficient. The power sprayer reduced manual labour while the power weeder and hand hoe reduced the drudgery of women. Different kinds of crop threshers available in the centres enabled farmers to carry out timely harvesting operations at a lower cost. This could help avoid crop damage in adverse weather conditions

Promoting champion women farmers

Champion women farmers equipped with agricultural expertise and innovation shared their expertise to other women through meetings and practical trainings. Each champion farmer guided 10 other women on agricultural development resulting in creating independent women farmers



Trained and confident – women use farm machinery with ease

such as cyclone, frost etc. Zero till drills helped to save time, water, fuel and escape terminal heat stress besides enabling farmers to ensure early harvest of rabi crops. Broad bed furrow technology for wheat, soybean, and maize saved crop damage due to excess soil moisture by aiding quick drainage and avoiding water stagnation. In terms of use, 766 women farmers used these farm equipment for 187 days with a turnover of Rs. 74,730.

Women were trained on using heavy machinery too. Out of 395 women, 55 trained women farmers are driving tractors too.

Through these initiatives, BAIF has popularised women led farm enterprises; empowered women in emerging as Development leaders, transforming the dynamics of farming in their regions. The custom hiring center being operated by farmer groups ensured easy access of needed equipment at a reasonable rate. These bold women are driving into the future with confidence and hoping for a better future.

Sujata Kangude

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Journey of becoming agripreneurs

Challenges and way forward for women farmers

Krupa Gandhi

Promoting women led agricultural enterprises is no more a choice but a necessity for sustainable development. Ensuring women driven businesses in rural set-ups will not only unleash the untapped potential of the agriculture sector but also reduce poverty, generate employment and build a more gender equal society.

Jamna Devi, 56, is a resident of Mokhei, a remote village in Phalodi Block of Jodhpur district, located in the vast expanse of India's Thar desert. She is a farmer and an active participant of various agricultural programmes implemented by GRAVIS in her region. She is a member of the Budhar Das Farmer Interest Group (FIG) of her village as well as one of the Board members of Dhora Dharti Farmers Producer Organisation (FPO).

When Devi joined the FIG in 2019, she would regularly participate in the monthly meetings. This wasn't easy for her but eventually, she along with several other women members received trainings on leadership skills, financial literacy, business planning, book keeping, on-farm training on cumin cultivation including production technology, pest and disease management, nutrient and water management and post-harvest management.

One of the key challenges that regularly came up during these discussions was the lack of availability of cumin seeds locally. The idea of opening a seed bank that had stayed with her during one of her exposure visits, started taking shape. She immediately pooled in 60 kgs of cumin seeds (GC4 variety) (which are rarely found in the market) and stored in earthen pots using the local and traditional



technique of farmers. She created this bank at her home and manages it along with the other members of the FIG.

In the next sowing season, FIG members distributed 60 kgs of stored cumin seeds among 25 farmers. Once the farmers harvested the crop, double the quantity of cumin seeds was procured from them to be used for the next Rabi season which was later distributed among 50 farmers. As on today, 240 kgs of seeds are with the seed bank. Farmers of her village are able to access good quality seeds at their doorstep saving both time and money while reducing their dependence on input suppliers and commission agents. Jamna Devi has also

Farmers adopted integrated organic farming practices for enhancing crop productivity



been instrumental in mobilizing several women from her village in using advanced agricultural practices.

As a Board Member, she has been actively involved in the development of 3-year sustainability/business plan activity for her FPO and is geared towards contributing in making it a functional farming enterprise. While it is going to take some time and learning for the enterprise to become a success, Jamna Devi's story is still an exception and not the rule in the difficult-to-survive region of Thar, an area marred with the impacts of fluctuating climate, recurring droughts, scarcity of water, sand erosion and salinity, adding to the woes of small and marginal farmers. Women here are often the worst affected as a large share of their time is spent in fetching water from long distances in addition to their role of caring for family members in the household, daily agricultural as well as animal husbandry activities and other domestic chores. These obvious impositions on them limit the time they have to study, care for self or develop on income-generating opportunities.

Women led farm enterprises

Women led farm enterprises in rural set-ups face several barriers on their path to sustaining themselves as profitable business establishments. These include lack of access to affordable and quality agricultural supplies and inputs, working capital, market, technology, personalized mentoring and handholding in addition to various other factors like lack of education, limited mobility, lack of access to professional networks and limited industry knowledge. Existing societal arrangements limit women to traditional gender roles instead of encouraging them to take up entrepreneurial ventures.

Generally, they are involved in works like weeding, sowing, transplanting and harvesting in agriculture along with caring for livestock. Everything related to market and sales have been typically considered the domain of male members of the household. And despite their heavy involvement and contribution to agricultural and allied activities, women's work isn't identified as economically productive. They are seldom labelled as entrepreneurs as it is difficult to draw a clear line of difference between their household chores and entrepreneurial activities. Though, the overall situation is now changing.

Due to the rapid feminization of Indian agriculture as a result of increased migration of male members,

more women are choosing farm entrepreneurship as a natural choice. And while this shift is visible, whether women have the eco-system that will enable them as micro-entrepreneurs and offer upskilling, access to capital, markets and supply chains is the bigger question to answer. The emergence of Farmer Producer Organisations (FPOs) has proven to be beneficial for small and marginal farmers and have enabled them to come together, access better markets and enhance their economic potential. Joining FPOs has changed the lives of many farmers but did women secure equal opportunities as men within the system? Most of the times many women are not able to participate in these organisations due to rigid socio-cultural norms, time constraints because of family responsibilities and lower social mobility. Men constitute a vast majority of FPO membership and leadership roles. Women are mostly underrepresented in the boards of these organisations and even when they do become members, they do not attend meetings frequently or even speak up when they do.

India has one of the lowest female labour participation rates in the world. Not to mention, in agriculture they are systematically excluded from owning most resources of production. While more than 70% of rural women work in agriculture, less than 13% own any land. In 2020, the Indian Government issued detailed guidelines for the setting up of 10,000 FPOs scheme in the country by 2024. But unfortunately, in the scheme, neither there is any mention about the minimum number of women FPOs that must be formed, nor there is any specification about the minimum number of women members to be included in an FPO. Access to information, mobility and money is much lesser for women farmers and hence, special efforts will be needed to include women as they will not consider being a part of FPOs on their own.

GRAVIS is currently working with 2 FPOs and 50 FIGs and while doing that has ensured at least 33% of the members are women who fully participate in decision making and market related activities. Women in these groups have been inducted to leadership positions as board members and shareholders through appropriate skilling and capacity building. They have been also trained in learning through digital platforms, good agricultural practices for productivity enhancement of spices, integrated spice organic farming and sowing,

on-farm trainings and demonstrations, technical equipment for land preparation, procurement, inventory management, pricing, coordination with buyers and understanding as well as access to a range of financial services.

One thousand small and marginal cumin and coriander growers of Osian and Phalodi Blocks in Jodhpur district, Rajasthan, have been enrolled and have begun to conduct business collectively through the FIGs and FPOs. There has been a substantial increase in the individual and group capacity of the spice farmers. With 914 acres of land under improved technologies and management practices, there has been a countable increase in the volume and value of incremental sales. 100% of male and female farmers and other value chain participants have access to financial services through banks and Kisan Credit Cards. All farmers have individual bank accounts and are benefitting from its financial services. It is still a long road for the farmers involved to achieve sustenance and GRAVIS will continue to handhold the FIGs and FPOs of the spice farmers, especially women, by supporting them with an efficient socio-economic environment to access resources, enabling direct linkages as well as get quality agricultural inputs for better incomes and profit margins.

Strengthening women agripreneurship

In order to conquer the challenges faced by rural women wanting to pursue entrepreneurship, a supportive environment that offers mentorship along with skill training, value addition inputs, improved financial access, risk sharing and market collaborations must be nurtured. Some of the other factors that could strengthen and promote women's agripreneurship are:

- Digital financial literacy training programmes for women entrepreneurs.
- Equipping women with skills to develop the FPO from a production-oriented company to a market led social enterprise. Producing enough quantity is important but it is also necessary to understand the demand and prepare farmers to meet the quality and process requirements of the market. Only value addition might help to sustain FPOs.
- Increased women's participation in economic activities should become a matter of national priority.

- Priority to women in accessing credit on soft terms from banks and other financial institutions for setting up their businesses, buying properties and building houses.
- Provision of alternative and better employment opportunities through policies and programmes to eligible agricultural women laborers in rural areas.
- Programmes targeting women entrepreneurship must address their time and money related issues. Customised financial products and services to cater to the needs of women farmers should be made available.
- Creating alternative credit score system for women, registering them on various e-commerce platforms to market and sell their produce, to overcome the mobility constraints and other socio-cultural factors.
- Helping small and local FPOs to get on multiple state and national level producer collective platforms to gain the benefit of aggregation.
- Encouraging women to participate in national and international level Trade fairs and exhibitions to improve their access to information on latest and affordable machinery and technology, etc.
- Helping women entrepreneurs access government schemes by providing information on the ones relevant for them. Central sponsored schemes can be a decent source of funding for enterprises that struggle with finances.
- Bringing in skilled professionals and industry experts to help women led farm enterprises with communications, branding, quality management, pricing and distribution channels for them to be viable in the market.

Promoting women led agricultural enterprises is no more a choice but a necessity for sustainable development. Ensuring women driven businesses in rural set-ups will not only unleash the untapped potential of the agriculture sector but also reduce poverty, generate employment



Educating women cadre on gender equality

and build a more gender equal society. A cross-sectoral approach whereby public, commercial and civil society sectors are involved, will be crucial in channelising innovation and growth while bridging the many gaps that hold back the aspirations and progress of women, the original torchbearers of agricultural landscape in India.

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Seed custodians

A women-led farm enterprise

Rajashree Joshi and Santarpana Choudhury

With handholding and training support, women entrepreneurs in Maharashtra have developed confidence to provide quality goods and services. From an invisible contribution which was limited to the confines of their homes or on the fields, they have now emerged as visible, successful entrepreneurs with greater social acceptance.

India's 40 crore rural women are the heart of our rural economy. Besides managing their households, they are also involved in agriculture and livestock management. With rapid feminization of agriculture, their role has become even more crucial.

Statistics reveal that 20% of India's 63 million Micro, Small and Medium Enterprises (MSMEs) owned by women are ensuring employment for 22 to 27 million people. Further, rural areas have a higher share of women-owned enterprises (22.24%) than urban areas (18.42%). Nevertheless, lack of recognition for these women-led enterprises remains a matter of concern.

The fact that women entrepreneurship is concentrated in low-earning farm and ancillary sectors is one of the reasons why women-led enterprises are seldom acknowledged. The common perception is that these are everyday activities and are not income generating avenues. As per the sixth economic census, 34.3% of all women-owned Micro, Small and Medium Enterprises were engaged in agricultural activities, with the majority being involved in livestock (92.2%), followed by forestry (4.5%), non-crop farming (1.9%) and fisheries (1.4%). More than 99% of women's enterprises are in

the micro sector. It has been observed that there is an inverse relationship between women-led enterprise and the size of enterprise. As the size of the enterprise increases, the proportion of women-led enterprises decreases. A combination of factors - individual, societal and ecosystem can be attributed to the limited success of women entrepreneurs. The challenges faced by women-owned MSMEs at the individual and societal level have often been discussed. In addition, there are larger ecosystem barriers, some of which have been identified as given in Box 1.

Box 1: Ecosystem barriers for women entrepreneurs

- a. Entrepreneurship promotion, which includes creating awareness and knowledge of different entrepreneurship opportunities
- b. Easy and affordable access to finance
- c. Training and skilling in technical and business skills
- d. Mentoring and networking from industry experts to guide and incubate budding entrepreneurs and peer networking
- e. Market linkages with domestic and global markets
- f. Access to business, legal, digital and other higher support services for better efficiency and productivity.



Nutri-garden kits with 12-15 types of seeds and saplings were promoted for increased dietary diversity

Women-led initiatives

BAIF Development Research Foundation, a not-for-profit organisation with its focus on fundamental developmental concerns such as agriculture and women development, has facilitated the formation of more than 4000 women's Self Help Groups (SHGs) in its operational areas. These women have been provided with necessary training and mentoring to set up their own enterprises such as nurseries, mushroom cultivation, poultry keeping and stitching units, with an aim to increase their financial and digital literacy for ensuring self-sufficiency and enhanced productivity. Presented here is a success story of Women as Seed Custodians.

Seed Custodians

Kalsubai Parisar Biyane Sanvardhan Samajik Sanstha (Kalsubai Seed Savers' Group) was formed in Akole block of Ahmednagar district of Maharashtra in 2015 to conserve and revive agrobiodiversity.

Akole, which was originally a bioresource rich agroclimatic zone of India has in recent years witnessed rapid commercialization of agriculture. This led to depletion of crop cultivars diversity resulting in narrow genetic base and low productivity, increasing incidence of pest infestation and diseases. Further, growing prevalence of mono-cropping has resulted in deteriorating soil health, increased cost of cultivation and has led to detrimental effects on nutritional outcomes of the local tribal communities. Not only has it led to erosion of

knowledge, but traditional practices of management and conservation are also becoming precarious.

Rainfed agriculture on homestead land has been the primary occupation for the people of Akole. During the winter and dry summer seasons, the local people, mostly of Mahadev Koli and Thakar tribes, sought casual employment as agricultural labourers or in neighbouring urban areas which indicated that the household had neither income nor food security for the entire year.

Initially, primary data was collected through focus group discussions, field visits and individual interviews. Mapping and collection of crop landraces was undertaken in various parts of Akole block. Seed savers were identified along with knowledgeable people leading to the establishment of 10 in-situ conservation centres for purification and scientific studies. Local indigenous vegetables and tubers were documented and germplasm collected and deposited in village/cluster level seed banks. The crop selection was based on the year-round availability and nutrition content. The selected worthy crop species seed production was carried out at the community level.

SHG members belonging to indigenous communities were inducted into this 11-member seed saver committee which was registered as a trust in 2017. Since its formation, this tribal women-led initiative is spearheading efforts for agrobiodiversity conservation and management by focussing on crop cultivar diversity,

seeds and wild edible plants. Field level training was imparted on organic input production along with usage of mulching, seed selection and proper storage. The germination testing and physical purity are carried out at the seed bank level.

The packaging and marketing of seeds was undertaken through the *Kalsubai Parisar Biyane Sanvardhan Sanstha*. The committee ensures quality seed production, management of seed exchange and establishment of market linkages. In addition, they organize field training for the local community on scientific agricultural practices along with exposure visits. The members have been trained in maintenance and record keeping of seed accession register, procurement and sale of seeds and grain production and are now confident of managing the day-to-day operations. Women conservationists Padma Shri Rahibai Popere and National Genome Saviour Farmer Award recipient Mamta Bhangare have led the way for conservation of indigenous seeds and wild vegetables through their knowledge awakening efforts and by linking science and technology therefore achieving the leap from Grassroot to Global and Research for Use.

This group has established three seed banks and conserved 118 accessions of 40 crops including rice, millets and pulses. The group has also been involved in production and sale of more than 21,600 kitchen garden kits and around 39 metric tons of quality seeds. Their success is not limited to their vicinity alone. They have successfully adopted innovative marketing techniques resulting in the sale of terrace garden seeds and thereby fostered a rural-urban linkage. Their efforts have generated business worth Rs. 46 lakhs till date.

There is also major thrust on capacity building in the community by means of women resource persons, called *Poshan Sakhi*. Due to the efforts of these *Poshan Sakhis* and good quality nutri garden kits supplied by the Seed Saver Committee, nutrition gardens have gained prominence in the area. These nutri-garden kits have seeds and saplings of 12-15 crops, and can ensure increased dietary diversity and assured availability of food for around 10 months. Seed saving among women SHG members is also encouraged thereby ensuring production in the next cycle. In the initial days, the initiative found support from the Rajiv Gandhi Science and Technology Commission (RGSTC), Government

of Maharashtra. Later, its upscaling was carried out with the help of Shabari Adivasi Vitta va Vikas Sanstha Maryadit, Nashik, Tribal Development Department, Government of Maharashtra.

Conclusion

Thus, there is ample scope for promotion of new and green enterprises in the farm sector led by women which can either be niche products or service-based enterprises or a combination of both. As there is considerable demand for such goods and services in both rural and urban areas, hence the rural-urban connect needs to be tapped. With some handholding and training, women entrepreneurs have developed confidence to provide quality goods and services. From an invisible contribution which was limited to the confines of their homes or on the fields, they have now emerged as visible, successful entrepreneurs with greater social acceptance.

These-farm-based enterprises have provided the women a dignified means of livelihood as well as income throughout the year. Higher disposable income has also promised greater secondary benefits for the entire household. These enterprises have the potential to be replicated across different tribal geographies and scaled up thereby ensuring greater profitability for the women. With the large base of farm women in India, such women-led farm enterprises can emerge as a major contributor to the Indian economy.

References

<https://msme.gov.in/sites/default/files/All%20India%20Report%20of%20Sixth%20Economic%20Census.pdf>
<https://www.niti.gov.in/sites/default/files/2023-03/Decoding-Government-Support-to-Women-Entrepreneurs-in-India.pdf>

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Nila garden

Passion leading to success

Archana Bhatt, Sreeram V and Abdulla Habeeb

Fierce determination to pursue one's passion can result in achieving spectacular success as an entrepreneur. This is a story of Ms. Subhadra Kumari, who nurtured her orchid enterprise to bloom and flourish.

Meet Subhadra Kumari, a 63-year-old visionary behind Nila Garden, a flourishing enterprise nestled in the serene landscapes of Wayanad, Kerala embodying her passion and a deep-rooted love for orchids.

Originally hailing from Pathnamthitta, Subhadra's family settled in Wayanad district around 1975. Having completed SSLC and a Diploma in Telecommunication & Typewriting, Subhadra's fascination with plants blossomed from an early age. Seeing her enthusiasm

towards plants, especially flowering plants, the family supported her by sourcing planting materials from various regions to fuel her botanical pursuits.

Subhadra got enrolled as a member of the agri- horti society, a society of floriculture enthusiasts at Sulthan Bathery. The society is run by the agriculture department on cut flower business. It had members from all over Wayanad. Subhadra in fact started her floriculture

Smt. Subhadra Kumari's love for orchids has bloomed into Nila Garden



journey with a training on *Anthurium* in 2003. The training was provided on collection, cultivation and processing of cut flowers of *Anthurium*. Marketing was done across Wayanad at the time through government wholesale market called as *Krishi Vipanana Samithi*.

She reminisces how she went to learn accompanied by her sister in-law using local bus. Despite having little money for the bus fare, she went because of her never ending love towards plants. Many of her colleagues who were once members in the society dropped off later as they faced economic hardships in managing the flowers as well as wild life attacks on the plants. She continued despite facing several challenges. Eventually, her interest got aligned towards the beautiful orchid flowers in 2008.

During a visit, the officials of agriculture department, Trivandrum introduced her to the idea of orchid cultivation. Initially, she started with a small purchase from a private nursery in Trivandrum which eventually proved to be a turning point in her floriculture journey. At that time, the general perception was that many orchid varieties won't survive well in the climate of hilly region of Wayanad. But, she still pursued and made her own orchid kingdom at her house. Her initial plan was to create her own orchid collection. As the plants propagated in large numbers, she turned to marketing the vast varieties of orchids she had in her collection. Recognising the untapped market potential for orchids state-wide, Subhadra intensified her efforts.

With the help of her business friend Reena, she imported exotic orchids from Thailand and Taiwan to add to her collection and scale up the business. In 2010, Subhadra officially launched her orchid marketing venture. The unwavering support of her family was crucial at every step. Beginning with sale of *Anthurium* and indoor plants, the venture got scaled up through her enormous orchid collection. Later, she also got subsidy from the horticulture department as they came and verified the scope of orchids in Wayanad. This helped her further in expanding the enterprise. Recently, she also availed a scheme of Horticulture department for Wayanad Orchid Farmers besides procuring orchids with the support from Regional Agricultural Research Station, Kerala Agricultural University at Ambalavayal, Wayanad.

Today, Nila Garden has a huge collection of orchids along with *Anthurium*, Ferns, *Begonia*, African violet,

Hoya and other indoor plants at her garden. Her orchid collection includes *Dendrobium* (over 100 varieties), *Phalaenopsis*, *Mokara*, *Oncidium*, *Cattleya*, *Vanda*, *Cymbidium*, *Grammatophyllum*, etc., to name a few notable ones, besides a good collection of native orchids.

In 2017, her journey was covered in the popular *Krishi Darshan* programme premiered on DD National television. She showcases her collection at various events, like the Bangalore Flower Show held every August, Agri fair of Agriculture Department (VAIGA), *Poopoli* flower festival of RARS, Kalpetta flower show and various other events.

Through her website and nationwide exhibitions, Subadra's clientele spans the length and breadth of the country, with Kerala and Bangalore emerging as primary markets. Also, she has marketed to buyers from Maharashtra to Kolkata over the years. She manages the packaging of the plants with good care and quality to ensure good long term customer relationships.

Currently, she earns an average monthly profit of Rs. 50,000/- through the sales of plants alone. Beyond commercial success, Subhadra remains committed to nurturing a culture of botanical appreciation and knowledge-sharing. She warmly welcomes visitors at her garden and shares her passion towards flowers. She also provides training and advisory services to budding enthusiasts interested in orchid cultivation.

She adds that till now there is no full-fledged facility in Wayanad for processing and storage of cut flowers. She hopes that government can take initiatives to realize the business potential the cut flowers have, especially with bigger markets like Bangalore in the vicinity.

Subhadra's determination and love for plants shows how one can realise one's dreams through hard work and persistence. As she grows her garden, she inspires others with her creative ideas. She motivates the future generations that anyone can pursue their passion irrespective of age and gender.

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Inclusivity through nature: Bengaluru's horticulture project empowers individuals with disabilities

In the bustling metropolis of Bengaluru, where the Garden City is fighting a tough battle against concretisation, an initiative is redefining the narrative around disabilities, and has thus created a sustainable, scalable project with inclusivity at its core.

“Disability is not a matter of charity; it is a right-based approach. Every individual, regardless of their abilities, has the right to be present in all facets of life, just like the right to education. To truly support people with disabilities, we must embrace a holistic approach that recognises and addresses their comprehensive needs,” says, Dr Senthil Kumar, CEO of the Association of People with Disabilities (APD).

Keeping this in mind, the organisation set up an Inclusive Sustainable Horticulture Centre. Situated between Kidwai Memorial Institute of Oncology and NIMHANS, the seven homes housing 425 residents under the Correctional Institutions Complex (CIC) will be provided with sustainable livelihood opportunities, post-training. The facility includes people with diverse needs, with intellectual disabilities, vulnerable women, and children who have been rescued from abuse, abandonment, forced labour, and other unfortunate circumstances.

The 32,000 sqft horticulture centre is a tripartite collaboration between APD, the Department of Women and Child Development, and Bosch. It was inaugurated in November. The therapeutic training interventions will be done for six months and followed up with six more months of regular practice of skills as a vocation in growing plants and maintaining the nursery.

The carefully designed centre attempts to help the beneficiaries build hand-eye coordination, improve cardiac health and develop problem-solving skills. “We have also tweaked the gardening tools and equipment, which are specifically made so that beneficiaries do not harm themselves and are easy to use.

The curriculum formulated by APD between Monday and Friday engages individuals for over an hour, every day. As a positive response, many have started looking forward to their sessions and enjoy being one with nature.

Source: www.newindianexpress.com/good-news/2023/Dec/17/inclusivity-through-nature-bengalurus-horticulture-project-empowers-individualswith-disabilities-2642339.html

Andaman farmer ‘Nariyal Amma’ receives Padma Shri for innovative organic coconut plantation

Kamachi Chellammal, a 67-year-old farmer from Rangachang in South Andaman, has been awarded the Padma Shri for her exceptional work in organic coconut plantation. Fondly known as ‘Nariyal Amma,’ Chellammal’s innovative farming techniques have not only garnered recognition but have also set a sustainable example for coconut cultivation.

In her unique farming approach, Chellammal employs coconut leaves and husks as mulching on the plantation. Mulching, the practice of covering soil with organic materials like bark, wood chips, or leaves, is key to preserving moisture and enhancing soil quality, especially during the post-rainy season.

Chellammal explained, “Mulching helps minimize moisture loss and reduces weed population, crucial factors for maintaining a healthy coconut plantation.”

Breaking away from conventional chemical pest control methods, Nariyal Amma adopted an Integrated Pest Management strategy. She strategically incorporated ‘trap plants,’ varying from one plantation to another, to attract insects that release pheromones into the air. This disrupts the natural mating cycle of pests, effectively controlling their population.

Chellammal implemented coconut-based multi-species cropping, utilizing the interspaces in her 10-acre land. This integrated farming system not only helped her

overcome the challenges posed by low coconut market prices but also increased her revenue.

Her multi-species cropping includes various plants such as elephant foot yam, banana, groundnut, pineapple, sweet potato, green chilly, tube rose, gladiolus, marigold, and green vegetables.

Chellammal explained, “Diversification has been key to financial sustainability in farming. It mitigates risks and boosts income.”

Over the years, Nariyal Amma has been an advocate for organic farming, encouraging fellow farmers to adopt sustainable practices. Her commitment to environmental stewardship and innovation has now been acknowledged with the prestigious Padma Shri award.

Source: https://economictimes.indiatimes.com/news/india/andaman-farmer-nariyal-amma-honored-with-padma-shri-for-innovative-organic-coconut-plantation/articleshow/107167800.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

‘Kisan Sathi’ portal acting as single window platform for Rajasthan farmers

With the use of information technology in a big way for the agriculture sector, the ‘Kisan Sathi’ portal has started acting as a single window platform for the farmers in Rajasthan. The IT applications have simplified the procedure for the agriculturists to apply for various government schemes and monitor the benefits available to them.

State Agriculture Commissioner Kanhaiya Lal Swami said here on Wednesday that more than 12 lakh farmers had used the web portal so far and benefited from the schemes for agriculture, horticulture, animal husbandry and agricultural marketing. The paperless work had speeded up the procedure and brought transparency to the system, he said.

The Kisan Sathi portal has facilitated direct benefit transfer of ₹1,600 crore to about three lakh farmers,

while the licences for selling seeds, fertilizers and pesticides were issued in large numbers with the help of online verification. Mr. Swami said the portal, launched in 2021 as an initiative for “ease of doing farming”, had brought revolutionary changes for the farming community.

The mobile apps developed for the farmers have also created new platforms connecting them with the buyers of agricultural produce. The apps are rendering services for registration of sellers of farm produce, distribution of seed mini-kits, registrations for bio-farming and online submission of seed and fertilizer samples.

Source: <https://www.thehindu.com/news/national/other-states/kisan-sathi-portal-acting-as-single-window-platform-for-rajasthan-farmers/article67821855.ece>

Medicinal plants preserved at PHC

A Government health centre in Bantwal, Dakshina Kannada, has collaborated with the Forest, Environment, Ecology, Research and Development (FERD) Trust to conserve rare medicinal plants and endangered Western Ghat trees.

The public Health Center (PHC) in Balthila has 100 medicinal plants and more than 250 saplings of 160 western Ghats tree varieties in a Miyawaki model forest.

FERD trustee Nithin Kumar K said that the saplings were planted on 10 cents of land available near the PHC.

Ghats and lakes. A vanamahotsava of medicinal plants was celebrated at the government school in Papemajalu of Ariyadka in Puttur, in August last year. We have introduced saplings of several rare medicinal plants, including tulsi, Krishna tulsi, sambrani, muyala, darbe, garike, majjige soppu, garuda pathala, pinari, nandi battalu, garga, ondelaga, kepula, aloe vera, kudka bachire, arrow root and several other varieties.

Source: <https://timesofindia.indiatimes.com/city/mangaluru/preserving-medicinal-plants-and-endangered-trees-at-phc-mangaluru/articleshow/107375689.cms>

“We have launched several initiatives to preserve medicinal plants, rare species of trees found in Western

Integrated Farming System

Key to prosperity

Rajeshwari Desai and Geeta Channal

Diversity and integrating various enterprises into a farming system helps in meeting multiple needs – food and nutritional security, incomes and optimal utilisation of resources. The case of Smt. Manjula proves it.

Small and marginal farmers are the core of India's rural economy and constitute 85 percent of the total farming community. The Integrated Farming System (IFS) is recognised as a way forward to address food security and nutritional security, improved incomes as well as efficient use of resources by recycling outputs (sometimes considered waste) becoming an input for another system. IFS is a mix of agricultural enterprises such as cultivation of cereals, pulses, horticulture crops like vegetables, mango, animal husbandry- dairy, fodder crops and aquaculture in farm pond, poultry farming etc., to achieve economic and sustainable agricultural production through efficient use of resources.

A case of Smt. Manjula Boknekar

Smt. Manjula Boknekar, aged 43, hails from Kumbarkoppa village of Dharwad taluk, Dharwad district, Karnataka. Her family is rooted in tradition and is impoverished. She is not educated and was married at a young age of 18 to Shri Naryan Boknekar, an agricultural labourer. She is now a grandmother of six children.

Smt. Manjula started helping her husband in the field as she grew up in a farming family. In 1999, they bought 4 acres and 3 guntas of irrigated land in Kumbarkoppa village, by raising loans. One acre was dedicated to a

mango orchard. Initially, two crops were grown annually. Also, all types of vegetables, pulses like cowpea, green gram and horse gram are cultivated for household consumption.

Box 1: Intervention of All India Co-ordinated Research Project-Women in Agriculture

As part of Azadi Ka Amrit Mahotsav, to commemorate the 75th year of Independence of India, a programme on "Nutrition Smart Village" is initiated to strengthen the Poshan Abhiyan. This new initiative aims to reach out to 75 villages across India through the network of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) which is in operation at 13 centres in 12 States of India.

The objectives of the initiative are promoting nutritional awareness, education and behavioural change in rural areas involving farm women and school children, harnessing traditional knowledge through the local recipe to overcome malnutrition and implementing nutrition-sensitive agriculture through homestead agriculture and Nutri-garden. To achieve the goal of malnutrition-free villages, intensive awareness campaigns, field activities, distribution of vegetable seeds and fruit plants, were undertaken. Under this initiative, UAS, Dharwad adopted Kumbarkoppa village with an aim to develop Nutri-Smart village during 2020-21.

Staking and mulching: In vegetable staking method, plant ties are used to secure plants to upright stakes that have been driven into the ground. The plants are able to push upwards against the weight of their fruit or blooms, strong winds, rain, or other obstacles because of the power and support that the stakes give. Staking can prevent plants from bending or breaking, especially those with heavy leaves, fruit, or flower heads. Additionally, keeping them upright helps promote better air circulation, which benefits the health of the plants.

Staking tomatoes provides support to help keep plants off the ground while assisting in their upward growth habit. Because many diseases and insects start at the ground level, using a structured system to keep them away from ground contact is prudent.

Mulching is the process of covering the upper surface of the soil for weed control and retaining soil moisture that is available to plants. Potential advantages of mulching in agriculture being, soil moisture conservation, minimizing soil compaction and erosion, regulation of soil temperature, soil fertility improvement, mitigation of salt stress, plant growth, development, and yield, diminution of diseases and decline of weeds.

To deal with shortage of labour and increasing labour cost, they started cultivating sugarcane along with vegetables as mixed crop. Initially, vegetables were grown for home consumption. Realising the demand, soon expanded the vegetable growing area. Initially they sold the surplus in nearby villages, gradually supplying to Belgaum city. However, the farmer found harvesting of tomatoes and creeper vegetables grown in a larger area difficult.

Under the 'Nutri-Smart village' project initiative (see Box), a scientist visited the farm guiding the farmer to introduce large scale vegetable farming and improved vegetable growing techniques and integrated farming methods. Besides guidance, seeds of different vegetables and leafy vegetables and saplings of tomato, brinjal and chilli were distributed. After getting convinced, Manjula embraced these technologies in her field.

By using mulching and staking method, Manjula has been successful in growing ridge gourd and bottle gourd in large scale. She also grows leafy vegetables, such as spinach, coriander, sepu, and amaranthus, and she gets paid a high price for them in the market. Tomatoes were grown as a mixed crop in sugarcane, whereas brinjal was grown using the staking method.

The components like dairy, sericulture were adopted by her. She began dairy with just one cow, but today they have three: one cow, two bullocks. She sells excess

milk and uses FYM generated on the farm. She has started mulberry cultivation also. Later, she plans to add sericulture components. Since the mulberry plants are small now, she is growing vegetables as mixed crops in mulberry cultivation.

For home consumption, she grows three to four types of pulses: horse gram, green gram, cowpea, and moth bean. For income from market, she grows maize, paddy and sugarcane. One acre of farm is mango orchard. Initially, she was growing vegetables for household consumption. Now she is cultivating them on a large scale. Further she has lemon, curry leaves, guava, coconut and sapota fruit trees also. While mangoes are sold, rest all are used for household consumption.

She prepares organic manures. By recycling organic solid wastes, she prepares compost. She has a compost unit for which the culture was provided by the project. Under another scheme supported by Department of Agriculture, she constructed Krishi Honda to store rainwater that can help irrigate about five acres of land during the dry spells.

Smt. Manjula Boknekar's farm income has increased significantly to Rs. 297500/- from around 2 lakhs. Besides having access to wide variety of vegetables and farm produce, she says with pride that she shares the farm fresh vegetables with friends and relatives. Numerous farmers have visited her field. She is a role model for many. From her example, it shows that IFS model helps small holders get healthy and nutritious foods as well as improved net incomes.



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Return to farming

Embracing integration and technology

Vijaya Hosamani and Mala Patil

Starting as a hobbyist and evolving into an entrepreneurial farmer, Smt. Indumathi has come a long way. Defying advancing age, she has proved that farm incomes could be enhanced by diversifying and practicing organic farming and using drudgery reducing farm machinery. Her enthusiasm for farming suggests that learning new skills and engaging in agricultural endeavour is not age-related.

Smt. Indumathi follows agri-horti-forestry pattern on her farm



Agriculture is the main occupation of the farming community in India. It is life line of our economy. However, today's youth are not interested in agriculture because of lower incomes, challenges faced with climate changes and natural calamities. Everyone aspires to a modern, opulent life and do not want to take up farming as their livelihood option. Thus, they are migrating to urban areas in search of jobs. In such circumstances, a woman moving from a city to a village to work in agriculture at the age of 55 is extremely uncommon. This is the case of one such farm woman, Smt. Indumati P. Channal from Dhavaleshwara, Gokak taluk, Belagavi district, who has been practicing integrated farming system, organically.

Even though ambitious, she could study only upto 7th standard, as girls were not encouraged to study then. She got married to Shri Pandappa Channal from a joint family. After fulfilling all her family responsibilities, she wanted to do something different with available resources.

Smt. Channal started farming during 2000-01. She has adopted organic Integrated Farming System in two acres of land. Agri- horti-forestry cropping pattern is being practiced. A farm house was built and she started working on the farm. She grows wide diversity of crops in two acres. Turmeric is grown in 30 guntas. Foxtail millet, vegetables, fodder maize were also grown in between turmeric and used for home consumption as well as to meet fodder requirements. After harvesting turmeric and foxtail millet, *Dicoccum* wheat is grown in the field. Navane is being used for home consumption rather than selling. Along the borders, she has planted around 300 teakwood plants and few coconut trees in-between.

One gets healthy organic produce/products like mangoes, bananas, coconut, tamarind and turmeric rhizome and turmeric powder from her farm. By growing turmeric, she got net returns of Rs. 65,000/- per year. Turmeric rhizome is powdered at home using mill, thus, preparing pure



Farm wastes are recycled back to the soil

turmeric powder. Both rhizomes and powder are being sold to the Sangali markets through commission agency. It is expected that Teak plants shall fetch one crore as income in the future. Coconuts are sold locally as well as to nearby city hotels. By selling coconuts, she got an income of Rs. 40,000/-. She has also planted around 200 banana plants in the farm which fetches an income of Rs. 1 lakh per year. Besides these, she has planted different fruit trees on her farm which include sapota, custard apple, diverse mango varieties from Ratnagiri. Mango trees have started yielding. Tamarind, lime, cherry, ramphal are also grown on the farm whose seedlings were brought from UAS, Dharwad. Harvests from all these trees are being used for home consumption.

To support organic farming, four HF cows are being reared. These cows give five litres of milk which is being sold to local dairy unit at Dhavaleshwar every

Table 1: Cropping systems, expenses and net profit

Crops grown	Expenditure	Profit	Purpose	Mode of sale/ consumers
Turmeric	35,000/-	65,000/-	Home consumption and Sale	Through commission agency and friends to consumers
Navane			Home consumption	
Teak	5,000/-	Estimated income of one crore in the future		
Tamarind	100/-	5,000/-	Used for Home and sale both	Sold locally
Coconut	2000/-	40,000	-do-	To hotels in nearby cities.
Banana	10,000/-	1,00,000/-	-do-	To nearby city market
Mango and other fruit plantations	2000/-	20,000/-	Majority of fruits are being used for Home	-do-

Table 2 : Expenses on enterprises and equipment

Particulars		Expenditure (Rs.)
Dairy		25000/-
Vermicompost		100/-
Bio digester		5000/-
Drip irrigation		20000/-
Compost making		500/-
Machinery and Drudgery reducing equipments	Coconut Sheller	1500/-
	Coconut climber	4500/-
	Mango harvester	300/-
	Mill	10000/-
Total		66,800

day at Rs.50/per litre. Vermicompost, Panchagavya, Jeevamruth, Bio-digester, Kashaya (prepared using different tree leaves) are being prepared in the field and used as fertilizers, growth promoters and natural pesticides. Machinery and drudgery reducing equipment are also being used which include, Flourmill, Coconut Sheller, Coconut climber, Mango harvester etc. Drip irrigation is also being used on the farm.

Overall, she is earning an income of around Rs. 2.5 lakhs per year. She grows few vegetables for home purpose throughout the year, so that a lot of expenditure on vegetables is also reduced. Money saved is money earned.

Recognising her enthusiasm, dedication and achievements in farming, UAS Dharwad honoured her with *Best Farm Woman Award* during 2009-10. She was selected as one of the resource persons in the Farmers to Farmers Training Programme conducted by University of Horticultural Sciences, Bagalkot. Many visitors who visit the farm to witness her entrepreneurial spirit, highly appreciate her dedication and enthusiasm at her age.

Agriculture holds the hands of those who hold it. There is no age limit to do farming. Rather, it requires determination, hard work and enthusiasm, abundantly epitomised by Smt. Channal. By adopting diversity, integration and organic farming methods, the produce is of good quality while the expenditure on manures and plant protection measures is minimal, thus, making farming remunerative and profitable. She is an inspiration to young and old alike.

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Smt. Indumathi sells value added turmeric by processing rhizomes to powder



Turkey farming

An alternative livelihood opportunity for women

Sarbaswarup Ghosh and Narayan Chandra Sahu

Women of South Paraganas district have successfully taken up turkey farming. This convergent model promoted by the local KVK has broken the barriers of development and unleashed the potential of women groups.

Azolla is grown and fed to turkeys



Indian poultry sector is witnessing a robust growth of around 8% per annum owing to many factors like high demand of poultry meat and eggs, development of integrated value chain, continuous research, and innovation (Toor and Goel, 2022). During the last few decades, this sector has shown a clear shift from a backyard poultry to a more commercially oriented activity. However, a large portion of small and marginal farmers and farm women who used to rear poultry birds traditionally in small flocks in their backyard remain clueless. They neither have adequate finances nor the technical expertise needed for intensive broiler farming.

In this backdrop, in 2016, Sasya Shyamala Krishi Vigyan Kendra (SS KVK) of South 24 Parganas district in Kolkata, attempted to promote backyard turkey (*Meleagris gallopavo*) farming as an alternative livelihood strategy for women, owing to many factors. Turkey birds can thrive easily in low input system. They are not prone to various diseases like broiler birds kept at intensive system of rearing. The meat from turkey birds is preferred by the urban consumers for its lean meat quality, distinct taste and aroma. It is also observed that the turkey meat is of lower caloric value (125 Kcal/85g) than broiler meat (140 Kcal/85 g) and thus more suitable in the dish of health-conscious people. It was believed that urban consumers in Kolkata city could serve as a good market for turkey meat.

Mobilisation of target women group for adopting turkey farming program

Some women farmers were earlier engaged in homestead poultry farming for additional income generation. They used to rear Kuroiler/RIR type of chicken breeds in small flocks. Gradually they were losing interest in traditional poultry farming owing to three factors viz. i) lesser economic return compared to broiler farming, ii) forced selling of their eggs and ready birds to the middleman as there were no definite marketing channels in the existing system and iii) high rate of bird mortality. When they were approached for adopting alternative livelihood through turkey farming, they showed interest in it. Around fifteen SHG leaders from three development blocks of South 24 Parganas district namely Sonarpur, Baruipur and Budge Budge II were thus chosen for turkey farming.

The women groups were first given hands-on training on turkey farming. They were exposed to the medium sized turkey farms managed by state government. Front-line demonstrations on scientific turkey farming using *Beltsville Small White* turkey breed were also conducted in farmers' field from time to time. This helped in infusing confidence among women and helped in horizontal spread of the package of practices. Package of practice for backyard turkey farming was based on the principles of scientific housing, scientific feeding, and strict preventive care. In general, a turkey bird gains 5 kg weight around 5 months of age under homestead management condition, and then it is marketed.

Large scale adoption

The breakthrough of this program was achieved when KVK entered into an agreement with West Bengal Livestock Development Corporation (WBLDC), a subsidiary of Government of West Bengal, for marketing of turkey birds reared by SHG members. With this agreement WBLDC started to lift ready turkey birds from farmers' home. The average farm gate price of live turkey birds is Rs. 270 per Kg which is much higher than commercial broiler birds. The amount is received through direct bank transfer by WBLDC. A turkey grower with an average flock size of 20 birds can thus generate net income of Rs. 15000-20000 per cycle of rearing. The net income can be enhanced further if birds are fed with locally available feeds, kitchen wastes and azolla.

The turkey meat thus procured from the SHG members, is sold under frozen meat category in various retail counters of WBLDC throughout West Bengal in the brand name of '*Haringhata Meat*'.

The large-scale adoption program of the turkey farming has been gradually taking momentum since the year of 2019 through an established model (Fig. 1) that is well integrated with financial institutions for credit linkages, various line departments of the Govt. of West Bengal for technology collaboration and WBLDC for market linkages. The program for turkey rearing and its marketing was overall spearheaded by the KVK.

In the current year, as many as 160 women SHG members are engaged in successful turkey farming. The women turkey farmers mostly belonging to the small and marginal backward farming community, are now

supplying around 1.5 tons of live turkey birds per quarter to WBLDC. They have sketched their own success story in the broad canvass of rural development through turkey farming. Not only the turkey farming is the source of their additional income but also a great source for self-confidence, satisfaction, pride and family nutrition.

Inspired by the examples of the women turkey growers, ARD department, Government of West Bengal has initiated to scale up this program in Sonarpur block from the year of 2023. Under a special scheme, ARD department along with KVK is distributing turkey chicks to the rural youths with an aim of achieving better income for farm families.

Success factors

The impact of the training, demonstration and motivation classes from KVK on the farming community, were enormous. The training and awareness programs had given the necessary scientific foundation for the program. It also unleashed the skills of the leadership quality that was dormant inside each SHG member.

The assured marketing linkages along with technological backstopping by KVK, ICAR -IVRI and Animal Resource Development Department of Government of West Bengal have made the program a successful one.

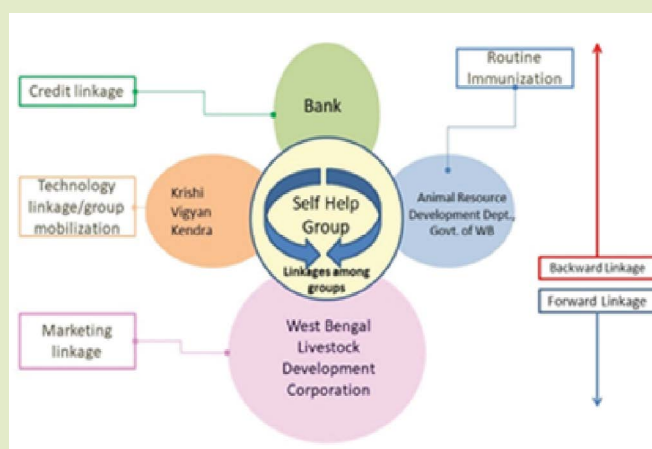


Fig 1: Convergent model of upscaling

This assured marketing channel had sustained the turkey farming community even during the COVID pandemic situation when many other farming sectors stood still. Animal Resource Development department (ARD), Government of West Bengal collaborates in the program since inception of the program by supporting the turkey growers through continuous supply of day-old turkey chicks and immunization programs in the villages. This collaboration has become instrumental for maintaining the optimal value chain. The proximity of the megacity and its huge consumer base with appetite for turkey meat also remains one of the important factors for successful

Box 1: From a house wife to a turkey entrepreneur: Inspiring Story of Mrs. Niyati Mondal

Niyati Mondal, aged 41, is a house wife, struggling to earn extra money for her daughter's education. She is a member of Puspa Gosthi (SHG), of Jaikrishnapur village, Sonarpur block. She used to manage a small poultry flock in the backyard as an avenue for her additional income. Unfortunately, she was facing setbacks due to low returns from her backyard poultry venture. Things turned positive when she first learnt about turkey farming during a training session at KVK. Motivated by the narratives of a fellow farmer who adopted scientific methods of turkey farming, she expressed her willingness to join the turkey rearing groups.

At first she received 10 turkey chicks as frontline demonstration from KVK. Gradually she assimilated scientific concepts of turkey bird management, azolla cultivation for birds' feeding, vaccination of chicks and record keeping. After 6 months, she completely replaced her poultry flock with turkey birds. She learned and practised every aspect of scientific turkey farming including brooding, feeding and giving veterinary medicines. Eventually, she started to manage a flock of 50 turkey birds on her own using smart interventions like azolla cultivation, vegetable wastes feeding, recycling of litters and

scientific biosecurity management. She also used turkey manure in her small vegetable garden with good results. With all her efforts, she could earn an average annual net income of Rs. 60,000- 75,000 from her turkey rearing enterprise. According to her, turkey farming is a smart alternative to traditional backyard poultry farming owing to less disease prevalence and assured marketing channel in turkey farming.

She slowly started talking to all the women in her village. Seeing her success as many as 50 women farmers from her community joined the turkey rearing group in Sonarpur block. In her village, she gradually became an icon who inspired many for taking an alternative livelihood through turkey farming. The current farming situation in the village is contrary to what it was earlier. In 2022, she also deliberated in a TV channel program as a farming expert. In 2023, she was awarded as 'Achiever Farmer' by ARD department, Govt of West Bengal for her turkey farming business which improved livelihood of many fellow farmers. She is now willing to set up an incubator machine under her group for easy availability of turkey chicks. She is also planning to set up a small meat processing center in her village as her future endeavour. Mrs. Niyati Mondal who started her journey as a backyard poultry grower is now a celebrity turkey farmer for her great zeal, collective approach and smart interventions.



Niyati Mondal transporting Turkey birds for sale

turkey farming by SHG women. This convergent model broke the barriers of development and unleashed the potential of women groups. The success of turkey farming has been widely covered in local print and electronic media.

Further, thrust could be given by connecting more farmers' organizations like self-help groups, farmers' clubs and FPOs with this alternative yet profitable enterprise to optimise the farm income through diversification using scientific knowledge and attitude.

References

- Ghosh Sarbaswarup, Narayan Chandra Sahu, and Avijit Haldar. (2023) **Status of Backyard Turkey (*Meleagris Gallopavo*) Production System in South 24 Parganas District of West Bengal, India.** *Journal of the Indian Society of Coastal Agricultural Research* 41: 1 <https://doi.org/10.54894/jiscar.41.1.2023.128933>
- Ghosh Sarbaswarup and Manidipta Saha. (2023). **Growth Performance and Meat Quality of Turkey birds Produced by the Small Holders in**

South 24 Parganas district of West Bengal India. *Exploratory Animal & Medical Research* 13: 2. pp 184-190.

- Toor, J.S. and Goel, R. (2022). **Poultry Farming in India with Special Reference to Punjab: An Overview.** *Agricultural Science Digest*. DOI: 10.18805/ag.D-5540 (13) (PDF) *Poultry Farming in India with Special Reference to Punjab: An Overview*. Available from: https://www.researchgate.net/publication/362220105_Poultry_Farming_in_India_with_Special_Reference_to_Punjab_An_Overview [accessed Feb 10 2024].

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Organic Versus Conventional Farming

Cezary A. Kwiatkowski, Elżbieta Harasim, Lucjan Pawłowski, Artur Pawłowski, Małgorzata Pawłowska, Barbara Kołodziej, 2023, CRC Press, 116 p., hard cover £ 84.99, ISBN 9781000870312

This book presents the results of a comparison of the quality of food products and raw materials, such as vegetables, fruits and honey, produced in organic and conventional farming systems. The comparison, which was based on literature data and the results of our own research, included not only the chemical parameters important for assessing the nutritional and health-promoting values, but also the stability of the ingredients in the fruits, which is important from a food storage perspective. The ecological, social and economic aspects of organic food production, which are crucial from the perspective of sustainable development, are also discussed in the book.

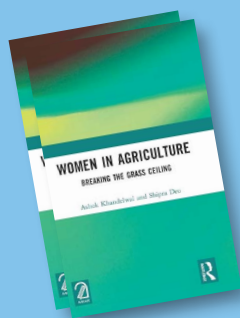
Organic Versus Conventional Farming aims at academics and farmers, but also to anyone looking for the answer to the question of whether organic farming ensures high-quality food, the production of which is safe for the environment.

Women in Agriculture - Breaking the Grass Ceiling

Ashok Khandelwal, Shipra Deo, 2023, Taylor & Francis, 174 p., e book £ 29.24, ISBN 9781003831068

The lives of women in rural India cannot be visualized without agriculture and allied activities. As per census 2011 figures, four out of five women workers in rural India work as agriculture workers, as owner cultivators or as wage workers.

This research monograph is about women farmers—women who are engaged primarily in the cultivation of vegetables and fruits and predominantly belong to small and marginal land holdings households. It is the outcome of a baseline survey done in the year 2010-11 in three districts of Uttar Pradesh as part of an action intervention project. Based on the survey findings, it discusses the structural and other factors that promote and perpetuate gender inequality and prevent women from realizing their full potential as farmers; presents the struggles, positive experiences and practices; explores possible interventions at different levels for different stakeholders; and suggests a framework keeping the women's agency/empowerment at center stage while simultaneously enhancing their wellbeing.



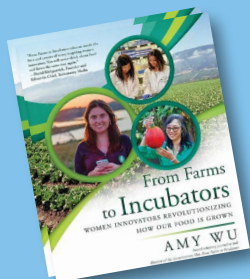
Waste Management for Sustainable and Restored Agricultural Soil

Amitava Rakshit, I M Rizwanul Fattah, James Seutra Kaba, Marouane Baslam, Murti Dhar Meena, Su Shiung Lam, Vijay Singh Meena, 2024, Elsevier Science, 460 p., paperback 134.70, ISBN 9780443184864

Waste Management for Sustainable and Restored Agricultural Soil provides a holistic approach to various mechanisms of waste management for plant nutrients, highlighting the importance of improving plant growth, nutrient concentration, and system sustainability for enhancing crop production and achieving desired environmental goals. Covering a broad overview of different kinds of wastes and waste recycling methods and sustainable management for soil health, this book focuses on both basic and applied aspects of waste management for sustainable agriculture and how nutrients are made available through waste.

Academics, professionals, researchers and policymakers working in the fields of safe waste management for potential use in agricultural crop production will benefit from this book.





From Farms to Incubators - Women Innovators Revolutionizing How Our Food Is Grown

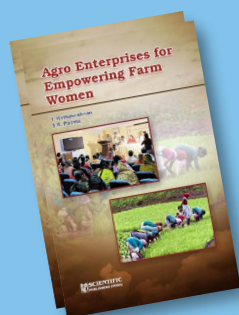
Amy Wu, 2021, Linden Publishing, 256 p., hard cover £ 1.70, ISBN 9781610353816

An exciting look at how women entrepreneurs are transforming agriculture through high technology.

Don't take the food you eat for granted. Farmers today face huge challenges in keeping your food supply secure—climate change, precarious water and soil supplies, and a growing global population projected to reach 10 billion people in 2050. Women innovators are tackling these problems to create a secure and sustainable food supply for the future. Using drones, artificial intelligence, sophisticated soil sensors, data analytics, blockchain, and robotics, these women are transforming agriculture into the growing field of agtech, the integration of agriculture and technology.

From Farms to Incubators presents inspiring stories and practical case studies of how women entrepreneurs from diverse cultural and ethnic backgrounds are leading the agtech revolution. Each agribusiness leader profiled in From Farms to Incubators tells her own story of how she used agtech innovation to solve specific business problems and succeed. The women profiled speak frankly on the advantages and drawbacks of technological solutions to agriculture and offer lessons in making technology productive in real work. These business cases demonstrate the influence of female innovation, the new technologies applied to agribusiness problems, and the career opportunities young women can find in agribusiness.

A must-read book for everyone interested in tech innovation and food security, From Farms to Incubators offers exhilarating role models for young women, a thought-provoking glimpse into the future of food production, and a fascinating investigation of how women leaders are profitably disrupting the world's oldest industry.



Agro Enterprises for Empowering Farm Women

T. Rathakrishnan and S.R. Padma, 2013, Scientific Publishers, 143 p., ISBN 9788172338558

This book gives a broad idea about the importance of such enterprises which are feasible for farm women. Techniques of Mushroom production, Layer production and Value addition of fruits and vegetables were the enterprises covered in detail in this book. This book will serve as a valuable reference material for upcoming entrepreneurs, field functionaries of women development programmes, food processing industries, NGOs, public and private sector training centers, graduates and agricultural other related enterprises.



Successful Women Micro Entrepreneurs from Rural Areas of Assam

Ratna Bhuyan and R. M. Pant, 2021, NIRDPR, 26 p., ISBN 9788195248209

Entrepreneurship plays an important role in developing and contributing to the economy of a country. Women entrepreneurs comprise approximately one-third of all entrepreneurs worldwide. Entrepreneurship, being a difficult undertaking, calls for innovative ideas, risk-taking, strong business acumen and effective leadership in all aspects of the business. It is, therefore, a challenging role for a woman. However, it has been made possible due to the attitude of women towards economic independence. The study has followed the Case Study method. An open-ended interview schedule was drawn for the study, keeping in view the objectives. Focussed interaction and discussions were carried out with the women entrepreneurs for documenting successful cases. The cases were drawn from the Kamrup (Rural) district of Assam along with a few cases in Bodoland Territorial Area Districts (BTAD). Ten cases of women entrepreneurs have been selected and studied, these cases are documented and presented in this report.

Women-led farm initiatives

Pawan Kumar, Manohari Rathi and Apurva Tiwari

By using organic farming methods, developing connections with markets, generating income, and enhancing their own and their communities' quality of life, two women entrepreneurs are making impact in spreading organic agriculture. Additionally, they are encouraging and supporting other women to pursue organic farming as a viable and long-term career.

Women entrepreneurs play a vital role in the rural economy and contribute to food security, poverty reduction, and gender equality. Some of the opportunities rural farm women have are in increasing demand for organic and healthy food. While organic farming is beneficial for health and environment, yet women face several challenges in

building an enterprise related to organic farming owing to lack of access to land, credit, markets, technology, training and extension services. Here are two examples of successful women-led farming initiatives where they overcame barriers and emerged successful.

Mrs. Hitesh Choudhary

Mrs. Hitesh Choudhary belongs to Chak Chaavi village in the district Amroha district, Uttar Pradesh. As a progressive woman farmer, the main objective of Mrs. Hitesh was to increase farmer's income through agricultural activities. Initially, she used to grow wheat, lemon grass, sugarcane, turmeric and mustard by adopting traditional methods of cultivation.

She is a person who is always keen to adopt new ideas and technologies in farming. She channelised her energies in few areas. She worked on organic lemon grass cultivation; maintaining nutritional Kitchen Gardens; developed expertise in organic input production techniques; motivated and trained fellow farmers on organic farming.

After participating in the Training of Trainers program organized by Patanjali Organic Research Institute, Haridwar during 2018, she started farming by organic and natural methods. She is currently growing mustard, vegetables, lemon grass, wheat, sugarcane, turmeric and guava in 2-acre land. She has also converted large chunks of land to organic cultivation.

As part of nutritional garden, she grows, Onion, Potato, Carrot, Radish, Spinach, Coriander, Cabbage, Fenugreek Banana Fruit Plants Papaya, Brinjal, Sweet Potato, Turnip Guava Plants, Arbi, Bottle Gourd, Luffa.

She started using the manures and fertilizers prepared through natural methods, namely, *Beejamrut*,



Panchagavya, Jeevamrut and Ghanjeevamrut. She used cow dung in preparing compost. She collects and uses Cow urine in preparing natural farming inputs which are helping her with huge savings on inputs for crop production.

She sells Lemon grass oil, wheat, sugarcane, mustard, sorghum, turmeric direct to customers and in Mandi. She uses Organic Vegetables, cereals and mustard grown for home consumption. She has considerably improved her incomes, rather doubled her income through adopting organic farming methods.

Initially she faced many challenges at family and societal level. Without any family or monetary support, she started her journey with self-conviction and now she has reached this position where she is helping others in the field of organic farming. She supports several SHGs groups and FPO in Amroha district.

Mrs. Hitesh was honored as progressive and innovative farmer with awards conferred by Social Organizations

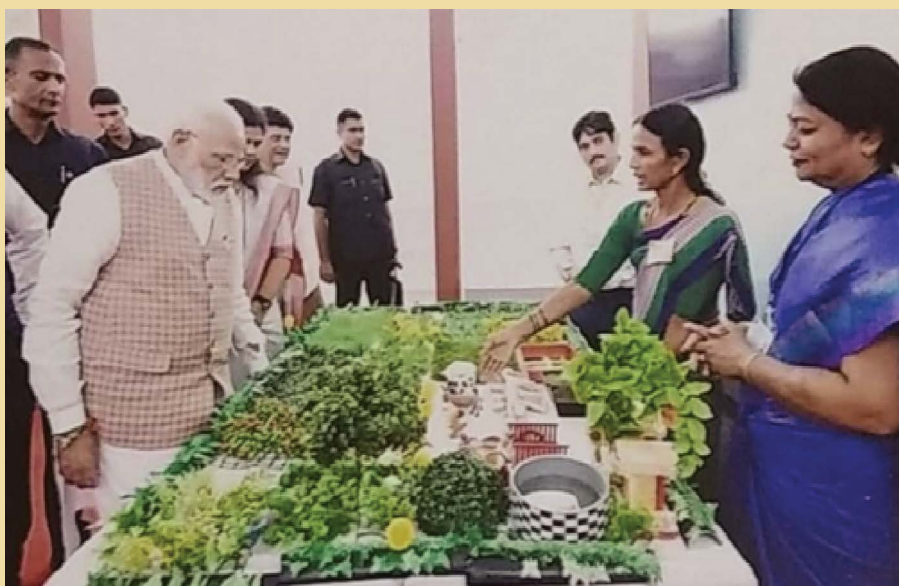


and District Administration, She received honours from Directorate, Min of Agriculture, GOI; VC, Sardar Vallabhbhai Patel University; Ministry of Agriculture, Uttar Pradesh, and also Governor of UP. Her name has been also recommended for the Padma Shri award by the Uttar Pradesh Government.

Mrs Savita J. Yelne

Mrs. Savita J. Yelane belonging to village Kanhapur, Wardha Dist. Maharashtra, started organic farming in the year 2008 in one acre land. She was trained by the Centre for Sustainable Agriculture (CSA) based in Secunderabad, Telangana. Subsequently, she also attended training organized by the State Agriculture Department, Maharashtra. During an exposure visit, she visited the organic farm of Mr. Subhash Sharma, known as 'smart farmer' across Maharashtra. After shifting to organic farming on 6-acre land in 2012, subsequently, she bought another 3 acres of land under organic farming. She is associated with "Maharashtra Rajya Jeevan Unnati Abhiyan", through which she is now imparting training in organic farming to the women of Wardha district. She is a member of Yogahaar programme of Patanjali Organic Research institute (PORI) which is especially a dedicated program to organic farming. Presently she is also selected as a trainer farmer by PORI. She shares her experiences from time to time to the aspirant organic farmers. Nearby farmers are getting motivated by the work of Savita and now more than 30 farmers have started growing organic food, especially for their own consumption and also selling the surpluses. She has converted about 15 acres of land into fully organic and about 50-acre land into 50% organic.

Slowly she started selling her farm produce outside her farm on Wardha-Nagpur road. Her organic shop is located at Wardha Nagpur national highway. There she sells seasonal vegetables, wheat flour, pulses, mustard, coriander and fenugreek seeds and sugarcane juice. Crops in which she does processing and value addition are wheat, sugarcane, mustard, and pigeon pea. She sells the sugarcane juice during the summer season mainly in May-June from her outlet. She is selling all her farm vegetables, processed chick pea (chana) and pigeon pea (toor), turmeric powder and papaya. Soybean and remaining pigeon pea is sold in mandi at market rates. People like to buy the Organic/Natural product from her shop because she is selling all her farm products at



market rates without charging any premium price for organic.

Mrs. Sarita was honored by Taluka and district level authorities for her efforts in innovative organic farming practices such as use of compost, vermicompost and other organic sources for nutrient management, mulching, crop rotation etc

She is an individual entrepreneur. Mrs. Savita told during her conversation that *"during initial stages she faced resistance from the society. People used to say that she is crazy, she doesn't understand her husband, she does farming herself but now things have changed and they also started practicing organic farming."* She has also motivated and trained near-by farmers to practice organic farming.

Mrs. Savita is happy with her journey and has been able to provide desirable education to her children. Her daughter has recently completed B.E. and her son has also completed MSc. Agriculture. Her husband and children also help in farm management.

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Women-led farm enterprises

Unleashing the potential of humble millets

Abhijit Mohanty, Bhesaja Choudhury and Trinath Taraputia

The revival of millets in Odisha has instilled a sense of confidence among women groups, helping them to beat poverty and malnutrition. Odisha Millets Mission and Mission Shakti department have been successfully promoting WSHG-led millet-based farm enterprises across Odisha, strengthening livelihood and improving household income.

Use of thresher for processing millets reduced the drudgery of tribal women



Odisha is home to 62 Scheduled Tribes and 13 particularly vulnerable tribal groups. The Scheduled Tribes of Odisha account for 22.85% of the total population of Odisha. For years, tribal communities have been sustaining their livelihood through subsistence rainfed farming mostly in the hilly terrain and mountain slopes where they cultivate traditional crops like millet, pulses, cereals, tubers, and roots under a mixed system of farming. Tribal women play a crucial role in supporting their household income where they assist their male counterparts in agricultural work like sowing, weeding, harvesting and processing the produce.

Traditionally, the highly nutritious millets formed a substantial part of the diets and cropping system in the tribal areas of Odisha. Millets are climate-resilient crops as they can withstand extreme climatic conditions and require less agro inputs and resources. It also attracts less pests. However, the traditional processing of millets is labour-intensive for tribal women as they spend hours sun drying, beating with sticks, winnowing, separating and collecting the clean grain. Additionally, millet grains differ in size, shape, and husk content, so it becomes difficult to ensure smooth processing.

Collaboration between government departments

In order to address these challenges, Odisha Millets Mission (OMM), a flagship programme launched by the Department of Agriculture and Farmers' Empowerment, Government of Odisha, to revive millets has been supporting women-led millet enterprises. In collaboration with the Mission Shakti Department, women self-help groups (WSHGs) have played a critical role in establishing, leading, operating and managing over 2,000 enterprises like processing units, Millet Shakti Cafe, Millet Shakti Outlet, Millet Shakti Tiffin Centre, Take-Home Ration (THR), Bio-Input Centres, Custom Hiring Centres and Community Managed Seed Banks.

“OMM is a unique programme because of its end-to-end value chain interventions and identification of scalable and innovative approaches,” said Arabinda Kumar Padhee, Principal Secretary, Department of Agriculture and Farmers' Empowerment, Government of Odisha. *“OMM is also focusing on women's empowerment through involving women-led self-help groups (WSHGs) and facilitating their active participation in the entire*

millet value chain with women being trained to take the leadership roles in processing, value addition, and marketing” the Principal Secretary highlighted. The mission was initiated in 30 blocks in 7 districts in 2017, which has been further extended to 177 blocks covering all 30 districts from 2023 onwards.

The Mission Shakti department has the objective of empowering women through gainful activities by providing credit and market linkage. Empowerment of women through WSHGs under Mission Shakti is a flagship programme of the Government of Odisha. It envisages that over a period of time, more and more women would be part of a WSHG. Nearly 70 lakh women have been organised into 6 lakh groups in all blocks and urban local bodies of the State so far.

Women-led farm enterprises

The partnership between the Odisha Millets Mission and the Mission Shakti Department has helped establish women-led farm enterprises for Self Help Groups (WSHGs) across the state. These enterprises include 7 WSHGs with 3-deck Ragi Cleaner-Grader-Destoner units (2-3 quintals per hour capacity), 14 WSHGs with 3-deck Ragi Cleaner-Grader-Destoner units (10-12 quintals per hour capacity), 35 WSHGs with 2-deck Ragi Cleaner-Grader-Destoner units, 20 WSHGs with Minor Millet Dehuller Units, 975 WSHGs with pulverizer units, 738 WSHGs with thresher units, 59 WSHGs with Take-Home-Ration units under the Integrated Child Development Services program, and 2 WSHG with an Integrated Minor Millet Cleaner-Grader-Destoner unit.

A few success stories are presented below.

Success Story 1

Sabari WSHG based in Doraguda village, Boipariguda block, Koraput district, is one of the 10 WSHGs in the Boipariguda block that received a Ragi thresher-cum-pearler, under the programme, to reduce the drudgery of tribal women farmers. Previously, these tribal women farmers primarily relied on traditional methods to thresh ragi, a laborious process that escalated processing expenses. These women used to spend approximately 5-6 hours daily manually drying and extracting ragi seeds, a process taking three to five days and incurring significant costs.

Since acquiring the ragi threshers, the WSHGs efficiently processed high-quality ragi. Sabari WSHG performed exceptionally well and earned a good income from the processing unit. Other women farmers bring their harvested ragi to process using the ragi thresher managed by Sabari WSHG, paying Rs.1 per kg of ragi to the group for their services. The WSHG earns an average income of Rs.10,000 per month during the harvesting season.

Chanchala Majhi, President of the Sabari WSHG said, *“We also provide ragi threshers to millet farmers on a rental basis. We charge Rs.100 per quintal of ragi processing.”* Typically, the threshers handle 3 to 4 quintals of ragi per day. Using the thresher, the time required for threshing is reduced to one day compared to the previous 5-6 days of intensive manual labour. *“We target those farmers who use traditional techniques for threshing ragi to reduce their time, cost and labour,”* said Bharati Taraputia, Secretary, Sabari WSHG. *“The ragi thresher unit has enhanced income for both farmers and the women members of WSHG. This has strengthened their livelihood,”* added Majhi.

Success story 2

Maa Santoshi WSHG from Mankadabeda village in Koraput district is managing a pulverizer machine (3 HP, single phase) to grind millet into flour. Gouri Gunta, president of the WSHG said, *“With the use of a pulverizer, it is very easy to convert ragi grain into fine flour. Thanks to OMM and Mission Shakti for training us and providing the machine.”* Local farmers often visit the pulverizer unit to process their ragi. The WSHG charges Rs.4 for grinding 1 kg ragi. The pulverizer can grind up to 15-20 kg ragi per hour. Last year the WSHG earned around Rs.50,000 from the pulverizer unit. *“We equally distribute the income with our WSHG members,”* Gunta said, while adding that, *“more and more WSHGs in the locality are showing interest in setting up a pulverizer unit.”*

Success story 3

Life has been challenging for Minte Kujur from Kutra Block in Sundargarh district. With agriculture as her primary source of income, providing affordable education for her children was difficult. In 2022, Minte Kujur and other members of Jyoti WSHG received a Pulverizer from the Odisha Millet Mission. After training from



Little millet dehulling mixie demonstrated the potential of the low-cost technology

the resource person, three out of ten members operated the machine, charging Rs 5 per kg and generating a monthly income of around Rs. 7000. The Pulverizer not only ground Ragi but also lentils, turmeric, and wheat. This initiative marked a significant step towards self-sufficiency and demonstrated the tangible impact of external support on women's empowerment through skill-building and resource provision. Following the implementation of OMM, WSHG members gained increased respect within their families and communities. Additionally, they achieved financial stability to afford quality education for their children in better schools, leading to improved opportunities for future generations.

Success story 4

Little millet is one of the traditional rainfed crops which used to be grown abundantly in the uplands of the Nuapada region. The shorter duration variety used is widely considered as a cash crop, in addition to being part of the traditional food basket. However, using the traditional method of manual little millet dehulling, it takes around 2 hours of labour to dehull 1 kg of grain.

A household level little millet dehulling mixie was developed through participatory machinery development approach to reduce the drudgery of women in little millet dehulling in remote areas. The pilot initiative in Nuapada district generated significant interest in women folk, demonstrating the potential of the low-cost technology to revive little millet production and consumption across the State.

OMM piloted a little millet dehulling mixie which could process about 4 kg of little millet in an hour, including

destoning, sieving, and allowing the machine to cool down between uses. Regular mixies currently available at a mass-scale were modified to develop this machine. This not only kept the technology low-cost under Rs 5000, but it also already had well-developed features for ease of use. The dehuller can be operated with single-phase electricity and doesn't require any additional infrastructure.

Success factors

The successful women-led farm enterprises have thrived under the collaboration between the Odisha Millets Mission and Mission Shakti due to several contributing factors. First is the comprehensive capacity building of WSHG members. The mission has focused on building the capacities of women farmers through training programmes, workshops, and exposure visits. This has enhanced their knowledge and skills in millet cultivation, processing, and marketing.

Under the mission, processing machinery has been provided to WSHGs to run their enterprises. And the third one is the supportive policies of the state government which prioritise women's participation and empowerment in the agricultural sector. All this has created an enabling environment for women-led farm enterprises to grow. These conditions, along with the determination and entrepreneurial spirit of the women farmers, have contributed to the success of these enterprises.

Conclusion

These women-led enterprises are leading their communities to include and promote millets, ensuring their nutritional and livelihood security while also providing an impetus to revive the millet economy. With the scaling up of the OMM programme, there will be a need for more such enterprises. There will be the expansion of the mission which will include more women farmers and WSHGs, replicating this in other regions of Odisha. This will broaden the reach and impact of the mission, contributing to poverty reduction and women's empowerment on a larger scale.



Simple technologies marked a significant step towards self sufficiency

WSHGs are playing a crucial role in driving the millet value chain, from farm to fork. The revival of millets in Odisha has instilled a sense of confidence among women groups, helping them to beat poverty and malnutrition. The OMM model has supported WSHGs to set up millet-based enterprises, which can become a comprehensive solution in addressing malnutrition, unemployment, and motivating farmers to increase their millet cultivation area.

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