



MANAGE Agricultural Extension “Evening4Learning (E4L)” Webinar Series



Theme: “Innovations in Extension with Entrepreneurship”



Topic: “AgroSonic Solutions Private Limited: Transforming Agricultural Extension through Innovation and Entrepreneurship”



Schedule:

27-04-2024, 19:00 – 19:45 PM



About the Program

The MANAGE Agricultural Extension “Evening4Learning” Webinar Series is aimed at enhancing knowledge and professional engagement in the field of agricultural extension. The four-day series is structured with each day focusing on a distinct topic under a common theme, allowing participants to gain comprehensive insights into key areas of extension. The program is intended for a diverse audience, including postgraduate and doctoral students, agricultural faculty, and industry professionals. It covers broad themes ranging from entrepreneurship and sustainability to emerging technologies in agriculture.

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Agricultural Extension
“Evening4Learning”
Webinar Series
April 27-30, 2024
19.00-20.30 pm (IST)

Theme: Innovations in Extension with Entrepreneurship



Speaker

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 Anil Tatti

About the Speaker

Mr. Anil Tatti, Director, AgroSonic Solutions Private Limited, Pune, is an entrepreneur with over 26 years of experience working towards strengthening livestock-based livelihoods through technology-enabled and sustainable value-chain solutions. Since establishing the enterprise in 2020, he has focused on SaaS-based solutions for livestock farmers, initially concentrating on goat and sheep farming and subsequently expanding to cattle, cows and buffaloes. Under his leadership, the company's systems support the management of approximately 40,000 livestock, with operations and clients across India and countries including Kenya, South Africa, Zimbabwe, Sri Lanka and Bangladesh, while exploring expansion into South American markets. His work highlights the potential of digital technologies and scientific livestock management to create sustainable rural livelihoods and supplementary income opportunities for farmers.

Overview of the Livestock Sector

The livestock sector makes a significant contribution to the Indian economy and plays a vital role in sustaining rural livelihoods. It serves as an important supplementary source of income for farming households, particularly during periods of crop failure resulting from adverse weather conditions, pest outbreaks, or market uncertainties. India possesses one of the largest livestock populations in the world, with nearly 54 crore animals, and is a leading producer and exporter of livestock products. Among these, goats and sheep contribute substantially to the country's meat production and support the livelihoods of millions of small and marginal farmers.

Goat farming, in particular, holds immense potential due to its low investment requirements, adaptability to diverse agro-climatic conditions, high reproductive efficiency, and multiple sources of income through meat, milk, manure, and skin. It is often referred to as the “poor man’s cow” because of its affordability and suitability for resource-constrained households. Despite the presence of a large goat-farming community in India, the sector remains largely unorganized. Farmers frequently face challenges such as limited access to quality breeding stock, scientific management practices, veterinary and extension services, organized markets, and reliable price information. Addressing these constraints through improved extension support, technology adoption, value-chain development, and stronger market linkages can significantly enhance the productivity, profitability, and sustainability of goat farming in the country.

Challenges in Livestock Farming

Despite the significant contribution of livestock to rural livelihoods and the national economy, the sector continues to face several structural, technical, and institutional challenges that limit its productivity and profitability. Some of the major challenges encountered by livestock farmers include:

- Absence of reliable records related to animal health, breeding history, vaccination schedules, and productivity performance.
- Lack of effective livestock identification and traceability systems, making disease monitoring and quality assurance difficult.
- Inadequate veterinary infrastructure and limited access to timely animal healthcare services, particularly in remote rural areas.
- Poor herd management practices resulting from limited awareness and adoption of scientific livestock management techniques.
- Restricted access to organized markets, value chains, and market intelligence, leading to lower returns for farmers.
- Inadequate nutrition, feed management, and scientific breeding practices, which adversely affect animal productivity and reproductive efficiency.
- Heavy dependence on intermediaries for the marketing of livestock and livestock products, reducing farmers’ bargaining power and profit margins.
- Limited access to credit, insurance, and risk-management mechanisms for livestock enterprises.

A critical challenge confronting the livestock sector is the shortage of veterinary professionals and extension service providers. Given India's vast livestock population, the existing veterinary workforce is insufficient to meet the growing demand for animal healthcare, disease management, breeding services, and advisory support. This gap often results in delayed treatment, inadequate preventive healthcare, and reduced productivity among livestock farmers. At the same time, this shortage presents significant opportunities for entrepreneurship in the livestock sector. Trained professionals, agripreneurs, and veterinary graduates can establish enterprises offering veterinary healthcare, artificial insemination, vaccination services, livestock advisory support, digital extension platforms, feed and nutrition consultancy, and livestock management solutions. Such ventures can not only address service delivery gaps but also contribute to improving livestock productivity, farmer incomes, and the overall sustainability of the livestock sector.

GoatMate Livestock Management Solution

To address these challenges, GoatMate, a Software-as-a-Service (SaaS) based livestock management platform designed to create a comprehensive digital footprint for each animal. The platform utilizes muzzle-scanning technology to identify animals and maintain detailed records related to health, breeding, vaccination, feed management, productivity, and ownership history.

The platform provides farmers with automated reminders on breeding schedules, vaccinations, deworming, health interventions, and feeding practices. It also supplies market intelligence and demand forecasts, enabling farmers to plan production according to market requirements. Artificial Intelligence (AI) is used to identify high-performing animals, support breeding decisions, and optimize herd management practices. The solution is accessible through both mobile and cloud-based applications.



Impact of Digital Livestock Management Platform: Evidence from Field Implementation

The transformative impact of digital livestock management systems through field-level case studies. One notable example was the implementation of the Farm Field Live platform in Bihar, covering 136 livestock animals. The results demonstrated significant improvements in livestock productivity, health management, and farm profitability following the adoption of the software-based management system.

Prior to the introduction of the platform, farmers relied on manual record-keeping, which often resulted in inadequate monitoring of animal health, breeding cycles, and productivity indicators. After adopting the digital livestock management system, substantial improvements were observed across key performance parameters. Mortality rates declined dramatically from 40 per cent to 8 per cent, indicating better health monitoring and timely veterinary interventions. Average daily weight gain increased from 60–85 grams per day to 100–125 grams per day, reflecting improved feeding and management practices. Birth rates improved from 60 per cent to 89 per cent, while the incidence of sickness decreased from 50 per cent to 18 per cent. Most notably, farm profitability increased from 0–12 per cent under traditional management practices to 20–24 per cent after the adoption of the software platform.

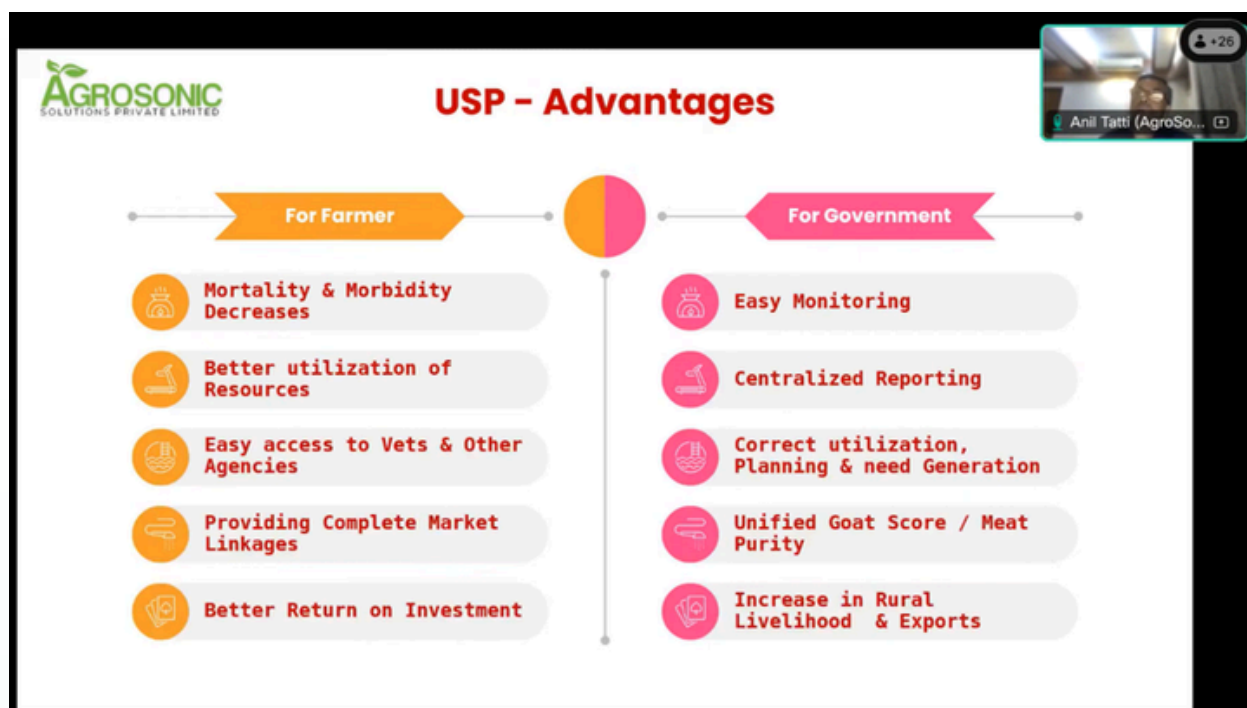
These outcomes demonstrate the effectiveness of digital tools in enhancing decision-making, improving herd management, and optimizing resource utilization. The platform enables livestock farmers to maintain comprehensive digital records, monitor animal performance in real time, and access timely veterinary support through online consultations. In addition, it strengthens market linkages by connecting farmers with buyers and service providers, thereby improving marketing efficiency and returns on investment.

The benefits of the platform have been recognized beyond individual farmers. Several government livestock farms, including those in Uttarakhand and Maharashtra, have adopted the system for livestock monitoring, breeding management, and performance tracking. The successful implementation of such digital solutions highlights their potential to modernize the livestock sector, improve productivity, reduce losses, and enhance the overall sustainability and profitability of livestock enterprises.

Building a Livestock Value Chain Ecosystem

The livestock development requires an integrated ecosystem involving multiple stakeholders. The platform connects farmers with feed suppliers, veterinary service providers, insurance companies, financial institutions, meat processors, exporters, retailers, and other value chain actors. This integrated digital marketplace, referred to as Livestock Bazaar, enables farmers to access services and market opportunities through a single platform.

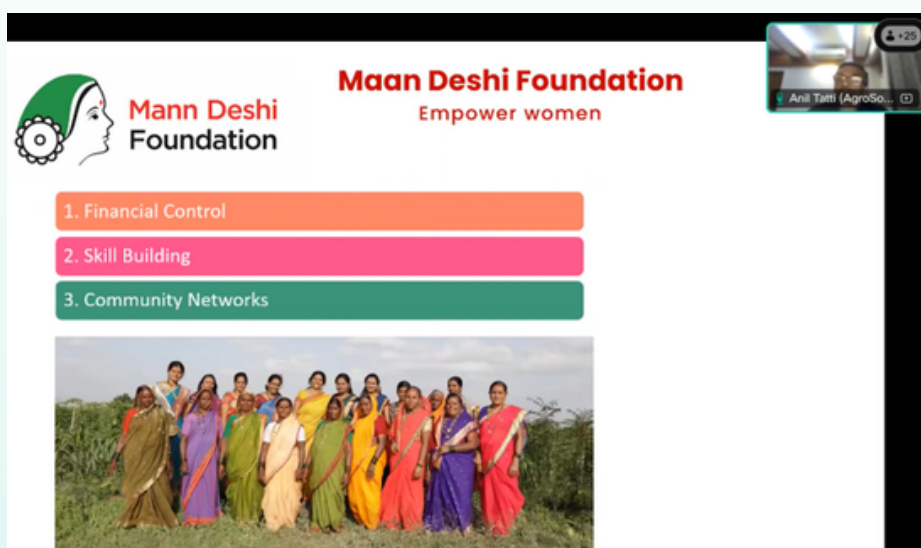
USP Advantages



Community-Based Livestock Entrepreneurship Models

The successful community-based initiatives supported through the platform:

Maan Deshi Foundation Model



The collaboration with the Maan Deshi Foundation, where women entrepreneurs were trained as Pashu Sakhis to provide basic animal healthcare services, including vaccination, deworming, and livestock management. These women formed cooperatives and developed sustainable livestock enterprises. One success story highlighted a woman entrepreneur who expanded from two goats to a thriving enterprise generating substantial annual income through collective livestock management.

Goat Bank Model: An Innovative Livelihood and Livestock Development Initiative

The innovative livestock-based livelihood model implemented by the NGO Goat Bank, Akola, under the leadership of Mr. Naresh Deshmukh. The initiative is designed to promote sustainable income generation among rural and tribal communities through a low-investment goat-rearing model.

Under this model, beneficiaries are provided with pregnant female goats for a nominal contribution of approximately ₹1,200 per animal. The goats remain with the beneficiaries, who are responsible for their care, feeding, breeding, and management. Due to the high reproductive potential of goats, the herd size increases rapidly over time. For example, a beneficiary starting with two pregnant female goats can gradually expand the herd through successive breeding cycles, resulting in substantial growth in livestock assets within a few years.

A unique feature of the model is its repayment mechanism. Instead of repaying the monetary value of the goats, beneficiaries are required to return a limited number of offspring to the Goat Bank after approximately 40 months (about three years). This enables the organization to extend the benefits to new beneficiaries while allowing existing participants to retain and expand their livestock holdings. The model thus creates a self-sustaining cycle of livestock asset distribution and livelihood enhancement.

Women-Centric Entrepreneurship Development

The initiative has achieved considerable success in tribal and economically disadvantaged regions of Maharashtra, including Jawhar, Palghar, and surrounding areas. Approximately 120 women entrepreneurs have been trained and supported under the programme. These women are actively engaged in goat rearing, breeding, herd management, and marketing of livestock, thereby generating supplementary income and improving household livelihoods.

The programme places significant emphasis on capacity building and self-reliance. Beneficiaries receive comprehensive training on:

- Scientific goat-rearing practices.
- Breeding and reproductive management.
- Basic veterinary care and animal health management.
- Feed and nutrition management.
- Record keeping and digital livestock management.
- Utilization of mobile applications and digital tools available in multiple Indian languages.

Through continuous mentoring and handholding support, the initiative empowers rural women to manage livestock enterprises independently and sustainably.

Digital Technologies and Livestock Capacity Building

The digital tools and livestock management applications form an integral component of the programme. Beneficiaries are trained to use software and mobile-based applications for maintaining livestock records, monitoring animal health, tracking breeding schedules, and accessing veterinary advisory services. The availability of these applications in regional languages enhances accessibility and adoption among rural communities.

Support for Sheep Farming and Wool-Based Livelihoods

The company is also involved in supporting sheep farming initiatives, particularly in the Himalayan regions of Uttarakhand. Special emphasis is placed on Merino sheep, which are renowned for producing high-quality wool used in the manufacture of premium woollen products and textiles.

Technical support and training provided to farmers include:

- Artificial insemination and breed improvement programmes.
- Scientific flock management.
- Sheep shearing techniques.
- Animal health and disease management.
- Wool quality improvement and value addition

The wool produced from Merino sheep is supplied to textile industries and contributes to both domestic and export markets.

Promoting Sustainable Rural Livelihoods

The organization's approach combines livestock development, entrepreneurship promotion, digital technologies, and continuous handholding support to strengthen rural livelihoods. By working closely with local institutions and community organizations, the initiative contributes to income generation, women's empowerment, livestock productivity enhancement, and the overall socio-economic development of rural and tribal communities.

Key Highlights

Digital Livestock Management Improves Farm Performance: Adoption of the Goat Mate / Farm Field Live platform significantly reduced livestock mortality, improved weight gain and birth rates, lowered disease incidence, and increased farm profitability through data-driven herd management.

Comprehensive Digital Ecosystem for Livestock Farmers: The platform creates a digital identity for each animal using advanced identification technologies and provides services such as health monitoring, breeding management, vaccination reminders, market intelligence, and online veterinary support.

Innovative Goat Bank Model Promotes Rural Entrepreneurship: Goat Bank, Akola, enables rural and tribal households to start goat-rearing enterprises with minimal investment by providing pregnant female goats and a unique offspring-based repayment system, creating a sustainable livestock asset development model.

Women Empowerment through Livestock Enterprises: Around 120 women entrepreneurs in tribal regions of Maharashtra have been trained in scientific goat rearing, animal healthcare, digital livestock management, and entrepreneurship, helping them generate income and become self-reliant.

Strengthening Rural Livelihoods through Technology and Capacity Building: The initiative integrates livestock development, digital technologies, value-chain linkages, and continuous handholding support to enhance productivity, improve market access, and promote sustainable rural livelihoods.

Interactive discussion

1. How can muzzle recognition technology and digital tools be effectively adopted by goat farmers, particularly in remote areas, and what measures are needed to overcome the challenges of awareness and technology adoption?

Muzzle recognition technology provides a non-invasive alternative to physical and RFID tagging by enabling farmers to access an animal's complete digital history, including vaccination, feeding, veterinary and other management records. However, its adoption among goat farmers, particularly in remote and nomadic farming communities, is limited by inadequate digital penetration and awareness. To address this, technology and extension personnel must reach grassroots communities through extensive capacity building and training of NGOs, private institutions, government agencies and agricultural colleges. Further, agricultural universities should make agricultural technology a core component of education and provide students with practical exposure to emerging digital tools, machinery and methodologies so that future extension professionals can effectively promote technology adoption among farmers.

2. How can organizations effectively partner with the public sector, private companies, FPOs and civil society organizations to strengthen agricultural advisory services?

Effective partnerships require a hybrid and farmer-centric approach involving government departments, universities, private organizations and FPOs. In Karnataka, collaboration with the Department of Agriculture has helped in supporting digital advisory initiatives, although government agencies have raised concerns regarding the reliability of recommendations that may differ from university advisories. The approach is therefore to integrate knowledge from both universities and the private sector, while ensuring that recommendations are scientifically sound, practical and cost-effective.

There is also a need to address gaps in existing extension platforms, where advisories may reach extension workers rather than farmers directly and where separate pest and disease recommendations can sometimes create confusion. FPOs and civil society organizations can play an important role by supporting technical advisory services for their members, particularly where their internal technical capacity is limited. At the same time, partnerships with private companies need to be carefully navigated because many company-led apps tend to recommend their own products, which may make the advisory profit-oriented rather than farmer-oriented. Therefore, future partnerships should focus on independent, integrated, evidence-based and affordable advisories, with all stakeholders working together to ensure that technology ultimately delivers greater value to farmers.

YouTube Link:

<https://youtu.be/V8QKoDIu7Lw?t=2>

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