International Seminar on Technology and Innovations for Gender Inclusivity in Agriculture

March 19-20, 2025

Compendium of Abstracts

National Institute of Agricultural Extension Management (MANAGE)

(An Autonomous Organization of Ministry of Agriculture and Farmers Welfare, Govt. of India)

Rajendranagar, Hyderabad 500 030, Telangana

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In this e-book, the readers will be introduced to cutting-edge technologies and innovative practices that are transforming agriculture with a gender-inclusive approach. It comes at the right time when the UN has declared the Year 2026 as the "International Year of Women Farmers". This theme encompasses Gender inclusivity in agriculture not only promotes equality but also boosts productivity, food security, and sustainability. This 3-day seminar will focus on how technology can be harnessed to bridge the gender gap in agriculture, empowering women farmers, entrepreneurs, and agri-professionals to become key contributors in the agri-food systems of tomorrow.

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Table of Contents

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Preface

It is with great pleasure that we present this Compendium of Abstracts for the International Seminar on 'Technology and Innovations for Gender Inclusivity in Agriculture,' organized by the National Institute of Agricultural Extension Management (MANAGE) on March 19-20, 2025. This seminar brings together thought leaders, researchers, policymakers, and practitioners to deliberate on ground-breaking advancements that promote gender inclusivity in agriculture.

Agriculture has long been the backbone of rural economies, with women playing a critical role in production, processing, and value addition. Despite their significant contributions, gender disparities in access to technology, resources, and decision-making persist. This seminar aims to address these challenges by exploring innovative solutions, emerging technologies, and policy interventions that can bridge the gender gap and empower women in agriculture.

The abstracts compiled in this volume represent a rich diversity of perspectives, research findings, and field experiences from across the globe. They reflect the latest advancements in gender-responsive agricultural technologies, digital innovations, sustainable farming practices, and institutional frameworks that foster women's leadership and participation in the sector. These contributions not only highlight existing challenges but also provide actionable insights for creating more inclusive and equitable agricultural systems.

MANAGE remains committed to fostering gender-responsive agricultural development through capacity building, research, and policy advocacy. We are confident that this compendium will serve as a valuable resource for scholars, practitioners, and policymakers striving to enhance gender inclusivity in agriculture.

We extend our heartfelt gratitude to all the contributors, participants, and partners who have enriched this seminar with their expertise and insights. We look forward to meaningful discussions that will pave the way for transformative changes in agricultural systems worldwide.

Dr. Sagar Hanuman Singh, IPoS

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MESSAGE

I extend my heartfelt congratulations to MANAGE for bringing together this pioneering International Seminar on Technology and Innovations for Gender Inclusivity in Agriculture, and for including IRRI as a part of this meaningful initiative.

Organizing such a significant platform requires vision, dedication, and an unwavering commitment to change—and this event is a testament to that. In a world where technology is rapidly transforming agriculture, it is imperative to ensure that women are not just included but positioned at the forefront of this transformation. By creating this space for dialogue, collaboration, and action, the organizers have taken an important step toward shaping a more equitable and resilient future for agriculture.

Agriculture has been the backbone of economies and communities, yet the contributions of women—who cultivate, nurture, and sustain—often go unrecognized, underrepresented, and underserved. As we stand at the crossroads of agricultural transformation, the real question is not just about adopting technology but about who gets to access and benefits from it.

Women are not just stakeholders in agriculture; they are change-makers. However, structural barriers, digital divides, and systemic biases continue to limit their potential. This seminar is an opportunity to move beyond discussions and head towards action—reimagining agricultural landscapes where women are equipped with cutting-edge tools, supported by inclusive policies, and empowered to lead innovation.

At ISARC, we are committed to creating pathways where technology meets equity, where access translates into agency, and where women's participation is not just encouraged but embedded in the core of agricultural progress.

By bringing together multidisciplinary teams, we design and implement socially inclusive, gender-responsive strategies that drive equitable innovation in agri- food systems. The conversations we spark here must lead to solutions that dismantle barriers and create a future where gender inclusivity is not a goal but a given.

I look forward to the insights, collaborations, and commitments that emerge from this seminar, ensuring that agriculture is not just transformed—but transformed for one and all.

Wishing my best for the success of the event!

(Dr. Sudhanshu Singh)

March 17, 2025 Varanasi, India

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MESSAGE

At the outset, I would like to extend my sincere congratulations to the National Institute of Agricultural Extension Management (MANAGE), Ministry of Agriculture & Farmers Welfare Govt of India, for organizing this significant international seminar on Technology and Innovations for Gender Inclusivity in Agriculture.

Climate change is a pressing issue human are facing today, and when it comes to agriculture its impact is rampant. It's the time that our efforts together must tackle the climate crisis addressing its impact on people. The impacts of climate change and related adaptive strategies are not gender neutral. Women are often left behind with less resources and decision-making power in addressing climate related issues due to existing social inequalities and unequal level playing field. Evidence shows that heat stresses amplify the income gap between rural female-headed households and male-headed households by $ 37 billion a year, and floods by $16 billion a year across low- and middle-income countries.

Hence, it becomes crucial to brainstorm on the gender responsive climate resilient technological innovations to support the adaptive actions through key policies and programmatic interventions. In this context this international seminar that brings together policy makers, implementors, farmers, researchers, scientists and academicians at one platform creates a conducive ecosystem to discuss challenges, opportunities and scalable solutions ensuring equitable access to cutting-edge technologies and innovative practices that are transforming agriculture.

My best wishes to all the participants and experts in their endeavors to create a pathway that bridges the gap in agriculture contributing to an inclusive agri-food system.

I wish the conference a grand success.

(Virender Kumar)

The Philippines
Dated: 18th March 2025

Dr. Vinod Pandit
Regional Director – South Asia
CABI, New Delhi
India

PREFACE

At the outset, we would like to thank Dr. Sagar Hanuman Singh, IPoS Director General, National Institute of Agricultural Extension Management (MANAGE), and his team, led by Dr. Vineeta Kumari, Deputy Director (Gender Studies), for arranging a strategic and thoughtful seminar at MANAGE on March 19th and 20th and inviting CABI as a Knowledge Partner.

The seminar was established with a clear objective of synthesizing the efforts made to bridge the gender gap and outlining the pathway forward for organizations globally, particularly the development sectors in agriculture and related fields, to collaborate in bringing the desired change.

The two-day seminar brought together some brilliant minds and deliberated on the need of the hour in terms of women's roles in agriculture and establishing their contribution by accessing and adopting new-era innovation and technology. The gist of the discussions has been brought together through this Compendium, which can give insights into designing the policies for enhanced participation in agriculture at various levels.

The objectives and follow up deliberations gel very well with CABI's Medium-Term Strategy 2023-25 and event like this help us to stay committed and contribute to reducing inequality by providing better opportunities for rural women and youth. This includes creating new jobs, ensuring equitable access to digital and in-person advisory services, and enhancing technology adoption among women. While CABI continues to focus on gender inclusivity through its strategies and implementations by adopting innovative approaches and technologies, joining hands with MANAGE to hold the seminar at this opportune time aims to discuss cutting-edge technologies and innovative practices that are transforming agriculture with a gender-inclusive approach, that act as a catalyst to provide directions that are more specific in achieving the desired outcomes. This timing is also significant for further deliberations, coinciding with the UN declaration of 2026 as the "International Year of Women Farmers."

Further, the agenda for the two-day seminar was appropriately placed to address issues and challenges related to policies, technology adoption and inclusivity, digital tools and

their potential to empower women, and innovation in gender-responsive, climate-smart agriculture, etc. CABI, strategically placed to work across various geographies, fully understands the issues concerning women's access to resources, especially technologies and innovations. Addressing this challenge in various areas, it has developed a suite of digital tools to build the capacities of the women workforce in Plant Health management areas. These tools are designed in such a way that the female workforce with limited resources (device/ internet) can also access information through these tools/applications. The tools are also structured to ensure that the content is gender-sensitive, with due consideration for gender inclusivity. CABI is committed to policy intervention by advocating for using gender-inclusive, low-resource-intensive CABI digital advisory tools to enhance our efforts toward a gender-inclusive ecosystem.

Dr. Vinod Pandit

Theme 1:

Technological advancements driving Gender inclusivity in agriculture

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From pastures to progress: Gender-Inclusive sheep farming in Jammu & Kashmir

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ABSTRACT

Animal husbandry forms an important component of agriculture. Sheep farming in Jammu & Kashmir forms the backbone of farmer's income particularly the tribal communities contributing significantly to Indian economy. This sector can be a cutting-edge tool for gender inclusive development as this region is home to diverse sheep breeds. Unlike dairy farming it is less capital intensive and requires less physical drudgery making it a more accessible and inclusive livelihood option across genders. Gender based constraints such as limited mobility, lack of ownership over land & livestock, restricted access to credit and market and climate stressors which include erratic weather patterns, harsh winters, fodder unavailability, increased sheep mortality in this region hinder the inclusive participation. Thus, a gender responsive approach is the need of the hour to tackle these gender disparities. By bringing forth the disparities that persist in this sector this paper advocates for much needed policy interventions for integration of gender inclusive and climate resilient strategies to bridge the gender disparities encountered in sheep farming. It calls for promoting gender sensitive training programs, policy reforms ensuring equitable resource distribution and use of technology driven solutions such as AI based livestock management tools to ensure sustainable sheep farming.

Keywords: Gender responsive, Sheep farming, Gender-inclusive and Jammu & Kashmir

Development of a Lightweight Multi-Crop Thresher to Reduce Drudgery among Women Farmers

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ABSTRACT

Threshing is a critical and labour-intensive task in agriculture that affects women farmers, who often engage in traditional methods due to limited access to mechanized solutions. Traditional threshing, which involves beating crop bundles against hard surfaces such as wooden logs, bamboo tables, or stones, is time-consuming, physically exhausting, and results in substantial grain losses. Existing threshing machines are often unsuitable for women due to their heavy weight and complex operation, limiting their adoption. To address this challenge, an ergonomic lightweight multi-crop thresher powered by one HP single-phase electric motor has been developed and rigorously tested. This innovative machine is designed for threshing, separating, and cleaning diverse crops. Its threshing capacity was recorded as 85–90 kg/h for wheat, 95–100 kg/h for paddy, 90–95 kg/h for barnyard millet and finger millet, 40–50 kg/h for amaranth, and 80–90 kg/h for radish and mustard. The machine achieved a threshing efficiency greater than or equal to 98% and a cleaning efficiency greater than or equal to 95% across all tested crops. This lightweight thresher reduces the physical drudgery faced by women in agriculture, saves time and labour, and enhances productivity. By offering a cost-effective and efficient mechanization solution tailored to the needs of women farmers, it promotes gender inclusivity in agriculture. Its adoption can empower women by reducing their workload, improving their economic contributions, and fostering their active participation in agricultural innovation.

Keywords: Multi-crop thresher, Lightweight machinery, Hilly regions, Threshing efficiency, Agricultural productivity, Drudgery reduction

Empowering Women in Agriculture through Technological Advancements -Bridging Gender gaps for Gender Inclusivity

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ABSTRACT

Technological advancements are playing a transformative role in promoting gender inclusivity in agriculture, offering women greater opportunities for empowerment, economic independence and productivity enhancement. Historically, women in agriculture have faced significant challenges due to limited access to resources, information, markets and financial services, driven by social norms and gender inequality. The emerging technology such as mobile phones, digital platforms and precision agriculture tools are helping to overcome these barriers. Mobile technologies enable women in rural areas to access vital information on weather forecasts, crop management, pest control and market prices empowering them to make informed decisions, improved crop yields and increase income. In addition, digital financial services like mobile money and microloans expand women's access to credit allowing them to invest in farming inputs and growing their businesses. Technologies like automated irrigation systems, lightweight machinery and precision farming tools further reduce physical labor making farming more efficient and less time consuming for women. Despite these advancements, challenges such as unequal access to technology, a lack of gender responsive training and persistent cultural barriers remain, when combined with policies and awareness programs, these technological innovations can significantly drive gender equality in agriculture, ensuring that women are not only included but also empowered in the sector.

Keywords: Technological advancements, gender inclusivity, agriculture innovation, gender inequality

Digital tools to empower Decision making ability of Women farmers: - A Comprehensive Review

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ABSTRACT

Women play a crucial role in Indian agriculture, contributing to crop production, livestock management and sustainable farming, despite facing challenges. Fear of social rejection and dependence on male authority are some reasons for women's limited involvement in agricultural decision-making. Digital agricultural tools empower women farmers by providing access to knowledge, financial resources and market opportunities. They enable data-driven decision-making through smart farming technologies, digital payments, and e-commerce platforms. These tools enhance productivity, reduce labour burden, and strengthen community engagement, leading to improved livelihoods. Involving women in agricultural decision-making is important because when women make decisions, they invest more in education, healthcare & community well-being and reducing rural poverty. This review synthesizes current literature to explore the study of factors affecting decision making of Farm-women in agriculture. The result found that majority of farm-women had not participate in decision -making during preparation of land, followed by means of irrigation and proper time & method of sowing, respectively. Major constraints in decision making faced by rural farm-women are low self-confidence, lack of knowledge, belief that women are subordinate to male counterparts, poor access to technology, illiteracy, poor access of to farm information etc.

Keywords: Agriculture, Constraints, Decision making, Digital agricultural tools, Farm-women, Technology.

Theme 2:
Women's Empowerment through Digital Tools and Agricultural Innovations

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Empowering tribal women for self-sufficiency: - A study on socio-economic interventions

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ABSTRACT

Women empowerment is a key driver of socio-economic progress, especially among marginalized communities like tribal populations. Tribal women, despite constituting a significant portion of the rural workforce, face challenges such as low literacy rates, financial dependency, and socio-cultural constraints. This study aims to assess the empowerment of tribal women for self-sufficiency in Middle Gujarat, focusing on the impact of socio-economic interventions. The research was conducted in two purposively selected tribal districts of Middle Gujarat. A total of 120 tribal women respondents were randomly selected from twelve villages across four talukas. The study employed an Ex-Post-Facto research design (Kerlinger, 1976), and data were collected using a pre-tested Gujarati interview schedule. Statistical tools such as percentage, mean, and arbitrary methods were used for analysis. The findings revealed that 58.33% of tribal women had a medium level of empowerment, while 40% had low and 1.67% had very low levels of empowerment. Notably, no respondents fell under the high or very high empowerment categories. The probable reasons behind these results include limited educational access, lack of financial independence, inadequate skill development opportunities, and socio-cultural constraints. Despite government efforts, awareness and adoption of empowerment schemes remain low, hindering progress toward higher levels of self-sufficiency. The study highlights the urgent need for targeted socio-economic interventions, skill development programs, and enhanced outreach of government schemes to improve the empowerment status of tribal women in Middle Gujarat.

Key Words: Tribal women, empowerment, self-sufficiency, socio-economic interventions, Middle Gujarat, skill development, self-help groups, financial independence

A Review of Women's Empowerment through Digital Tools and Agricultural Innovation

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ABSTRACT

Women comprise 60–70% of India's agricultural workforce, mainly in traditional activities like transplanting, weeding, winnowing and sowing, but face significant barriers in digital literacy and access to emerging technologies, limiting their participation in modern farming and agribusiness, utilizing financial and advisory services tailored to agricultural needs. This review explores women's digital literacy (and its adoption) in agriculture and the role of digital tools (ICTs, mobile advisory services, digital finance, and block chain) in bridging gaps. Innovations (climate-resilient farming and Agri-tech start-ups), further improve access to resources and boost women's participation in agribusiness. Supported by case studies, best practices, and policy frameworks, this paper emphasizes the role of digital tools and innovations in empowering women in agriculture. The study used exploratory and descriptive research design. While digitalization offers opportunities for empowerment, challenges such as technological access (and capacity to realize the potential of several digital technologies), training gaps, digital divide, socio-cultural barriers, and financial constraints persist. This review highlights strategies to overcome these barriers, including equitable access, skill-building, tailored mentorship, private sector investment, awareness campaigns and targeted training programs. This paper concludes with actionable recommendations for policymakers, practitioners, and researchers to foster women's decision-making power, economic independence, and overall empowerment in agriculture.

Keywords: Empowerment, women, digital tools, innovations, digital literacy

Harnessing Digital Innovations for Women's Empowerment in Agriculture

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ABSTRACT

Women are vital to agriculture, making a substantial contribution to both rural development and food security. However, they face societal issues such as a lack of resources, technology, and decision-making tools. This review paper investigates the revolutionary ability of digital tools and agricultural advances to empower women in agriculture. It investigates the role of mobile apps, e-commerce platforms, digital financial services, and educational resources in increasing women's productivity, economic independence, and market involvement. The article also emphasizes novel agricultural practices like climate-smart agriculture, value-added processing, and modern farming techniques that enhance women's financial autonomy. The digital divide, sociocultural hurdles, and economic limitations still exist despite these opportunities. The study emphasizes the necessity of digital literacy initiatives, enhanced technology accessibility, and gender-inclusive policies to promote an equitable agricultural environment by examining effective case studies and policy frameworks. The findings suggest that strategic interventions utilizing digital tools and innovations can bridge gender gaps, promote women's empowerment, and drive sustainable rural development.

Keywords: Women's empowerment, Digital tools, Agricultural innovations, Gender equality, Rural development.

Automation-Based Ergonomic Interventions to Reduce Drudgery in Traditional Millet Post-Harvest Operations

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ABSTRACT

Women play a pivotal role in millet post-harvest operations, yet traditional methods contribute significantly to their physical strain and drudgery. This study evaluates the impact of automation-based improved practices on ergonomic parameters among 112 women farmers from Chalki and Gangapur villages in Sangareddy district, Telangana. Using purposive random sampling, the study analyzed five high-drudgery post-harvest operations—threshing, drying, winnowing, flour milling, and flatbread making—by comparing traditional methods with power-operated machines. Results revealed that automation significantly reduced drudgery levels by **35-88%**, time spent by **31-90%**, and postural discomfort from **moderate to minimal pain levels**. The study found a strong correlation between women's physical profiles (age, BMI) and drudgery perception, highlighting the need for **gender-responsive ergonomic interventions**. The adoption of automation not only alleviates drudgery but also enhances productivity, income, and overall well-being of farm women. Future innovations in women-friendly equipment could foster sustainable agricultural practices and improve livelihood outcomes in millet-based farming systems.

Keywords: Drudgery reduction, Automation, Ergonomics, Farm women, Millets, Sustainable agriculture, post-harvest practices

Empowering Women in Agriculture through Digital Tools and innovations: The Role of Technology in Bridging Gender Gaps

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ABSTRACT

Women's empowerment in agriculture is essential for achieving gender equality and sustainable development. Digital tools and agricultural innovations play a pivotal role in transforming women's roles in the agricultural sector, enhancing their access to resources, information, and markets. Technology, including mobile apps, digital financial services, online training, and the current Namo Drone Didi Scheme, is a central sector scheme that provides drones to women-led Self-Help Groups (SHGs). The scheme aims to help SHGs earn an additional income by renting drones to farmers for agricultural purposes. These innovations facilitate knowledge sharing, enhance productivity, and empower women farmers to make informed decisions. Furthermore, access to mobile-based platforms has been shown to improve women's decision-making abilities in agricultural practices, finance, and household management. The intersection of gender and technology presents both opportunities and challenges. While digital tools offer immense potential, issues like digital literacy gaps, access to technology, and cultural barriers can limit their full impact. However, successful case studies, such as women-led cooperative projects in Sub-Saharan Africa and South Asia, demonstrate how digital platforms foster collaboration, enhance women's entrepreneurial skills, and reduce gender disparities in rural economies. This paper explores how the integration of digital tools and agricultural innovations fosters women's empowerment, examining key case studies and policy recommendations for scaling such solutions. It concludes by emphasizing the need for inclusive policies and tailored interventions to bridge the gender digital divide and ensure that women in agriculture fully benefit from technological advancements.

Keywords: Women's Empowerment, Digital Tools, Agricultural Innovations

Women's Empowerment through Digital Tools and Agricultural Innovations

Yash Srivastava[1] and Dr Saikumar C Bharamappanavara[2]

ABSTRACT

Agriculture has the highest estimated female labour force participation in India, at 62.9%, as per the Periodic Labour Force Survey (2021-22), which has further seen an increasing trend over the last three PLFSs. However, when it comes to land rights and inheritance, women are majorly neglected and not considered the owner/tiller of the land, thus remaining as a mere support system. This trend is seen in many of the agriculture-dominated states, like Andhra Pradesh. In the last few years, Andhra Pradesh has witnessed strong institutional support for Natural Farming (NF) practices in the form of the Andhra Pradesh Community Managed Natural Farming (APCNF) Programme. It utilises the existing platform of SHGs and VOs as field-level institutions and puts women as the flagbearers of the implementation of the programme. Women farmers were trained, enhanced capacity, including the use of ICTs, and enrolled under the different cadres and levels of NF practising farmers. Further their role increased further on the pretext of NF input preparations and better integration of livestock and kitchen gardens. However, until the names of woman farmers are institutionalised as owner/tiller, it is very difficult to mainstream them. Addressing this challenge, the programme started institutionalising the farmers' names through a digital medium, the URVI application, where the Cadre and NF farmers are registered in the name of the women farmers. This helps change at an institutional and behavioural level, recognising them as a programme implementation unit and a beneficiary.

Keywords: Women's Empowerment, Sustainable Agriculture, APCNF, Digital Divide, Digital Literacy

The Role of Digital Platforms in Promoting Gender Equity in Agricultural Value Chains

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ABSTRACT

Digital platforms are revolutionizing agricultural value chains by facilitating market access, financial inclusion and knowledge dissemination. But there are also gender disparities in digital access and utilization which restrict women's involvement in digital agriculture. The study examines the role of digital platforms in fostering gender equity in agricultural value chains by analyzing existing literature on digital financial services, e-commerce, digital extension and agri-tech solutions. The study used a systematic literature review method to analyze the constraints such as limited digital literacy, financial barriers, socio-cultural norms and policy gaps that prevent women's participation in digital agriculture. Findings reveal that digital marketplaces, mobile banking and advisory platforms have increased market accessibility and financial resources for women but structural disparities still exist. Case studies of successful interventions highlight the importance of gender-sensitive digital technologies and inclusive policies in bridging the digital divide. While government initiatives and private sector efforts contribute to digital inclusion, gaps in institutional support and legal framework prevent widespread adoption. Promoting digital literacy programs, improving rural digital infrastructure and integrating gender-responsive fintech solutions are critical for ensuring equal access. Policies that safeguard women's digital rights and encourage collaborative decision-making in agri-tech advances are also essential for long-term development. The review underscores that reducing the gender digital divide in agriculture is crucial not only for social equity but also for improving food security, economic resilience and sustainable agricultural development. Future studies should focus on evaluating scalable approaches and long-term effects for gender-inclusive digital agriculture.

Keywords: Agriculture, Digital divide, Policy, Value chain, Women

Gender-Inclusive Digital Interventions for Agri-food Production

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ABSTRACT

According to UN population estimates, the world population could spike to 9.8 billion by 2050. The most important issue will be ensuring food and nutritional security for all, which is Sustainable Development Goal (SDG) 2 of ending hunger, supposed to be achieved by 2030. This underscores the need to double food production through sustainable food production systems to feed the globe. This requires empowering smallholder farmers, mainly farm women, who contribute one-third of world food production. In general, these women lack ownership of resources and access to credit, and they are subject to information asymmetry, uneven burden of farm work and the digital divide, which are the factors that restrict improving productivity through digital technologies. Digital tools like mobile applications, the Internet of Things (IoT), drones, animations and social networking need to be designed in such a way that it is scalable and affordable for the farmers. Hence, there is a requirement for digital interventions for the empowerment of farmers. Such interventions need to be gender-inclusive by inclusion of women in technology design, training to improve digital literacy and provision of digital financial services. This research focuses on ensuring informed decision-making concerning sustainable agriculture by reducing the digital divide and financial inclusion of women farmers.

Keywords: Food Security, Digital technology, Women farmers, Sustainable food system

Empowering Women in Agriculture: Bridging the Gender Gap through Farmer Communication Centres and Custom Hiring Services in the Tribal State of Chhattisgarh

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ABSTRACT

Women are integral to agriculture, yet they face significant barriers in accessing critical information, modern farming equipment, and decision-making opportunities. Socio-cultural constraints, restricted mobility, and limited financial resources often hinder their active participation in key agricultural activities. To address these challenges, gender-inclusive interventions have been implemented under the Farmer FIRST Programme (FFP) in the tribal villages of Kasdol Block, Chhattisgarh**.** Two key initiatives, Farmer Communication Centres (FCCs) and Village-Level Custom Hiring Centres (CHCs) have been introduced to enhance women's participation in agriculture. FCCs serve as knowledge hubs, providing women farmers with access to real-time market information, best farming practices, pest and disease management strategies, and weather forecasts. These centers have boosted women's confidence, strengthened knowledge-sharing networks, and contributed to sustainable agricultural development. Simultaneously, CHCs have improved access to modern agricultural machinery, significantly reducing the physical drudgery faced by women in farming. By integrating digital tools and mechanization, these centers have enhanced farm efficiency, increased productivity, and empowered women to take on leadership roles in agricultural decision-making. Beyond these interventions, women farmers have been actively engaged in mushroom cultivation, Kadaknath poultry farming, nutritional gardening, protected cultivation, goat farming, Azolla production, agro-processing, and rice-fallow pulse production generating additional income and strengthening rural livelihoods under FFP. These gender-responsive strategies ensure equitable access to agricultural resources, fostering long-term empowerment, economic resilience, and inclusive growth in tribal farming communities.

Keywords: Women Empowerment, Farmer Communication Centres, Custom Hiring Centres, Gender Inclusivity, Digital Tools, Agricultural Innovations and Technologies.

Tech-Driven Empowerment: Lepcha Women's Role in Gender-Inclusive Agri-Tech and Sustainable Farming

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ABSTRACT

Nestled in the serene landscapes of Sitong, Darjeeling, the Lepcha community has long preserved its cultural heritage while embracing sustainable agriculture and rural entrepreneurship. Lepcha women, constituting over 65% of the agricultural workforce in this region, have played a transformative role in integrating traditional farming with modern technological advancements. With 78% of women in Sitong engaged in agri-based self-help groups (SHGs), the adoption of digital tools, mobile-based agricultural advisories, and climate-resilient farming techniques has significantly enhanced productivity and financial independence.

Government initiatives under the West Bengal State Rural Livelihoods Mission (WBSRLM) have facilitated gender-responsive climate-smart agriculture, providing over 2,000 women farmers with training in precision farming, smart irrigation, and biofortified seed technology. Through targeted policy interventions, 65% of female farmers in Sitong now access e-marketing platforms to sell organic produce, such as indigenous millets, medicinal herbs, and high-value crops like kiwi and avocado, reducing dependency on intermediaries.

Lepcha women entrepreneurs have further bridged the gender gap in agri-business by establishing cooperative-led processing units for value-added products like sattu, pickles, and herbal teas, witnessing a 32% rise in rural women's agribusiness earnings over the last five years. Additionally, their integration into eco-tourism has fostered gender-inclusive entrepreneurship, with 40% of homestays now operated by women offering agritourism experiences.

Despite these advancements, challenges remain in access to fintech solutions and agri-tech start-ups. Policy frameworks must enhance rural women's digital literacy, financial access, and market linkages. This study underscores the resilience of Lepcha women in balancing traditional wisdom with technology-driven agricultural innovation, setting a global model for sustainable and gender-inclusive rural development.

Keywords: Gender-Inclusive Agriculture, Agri-Tech Innovations, Climate-Smart Farming, Women’s Rural Entrepreneurship, Digital Tools in Agriculture, Sustainable Agri-Tourism

Information Networking Among Coastal Farm Women in Odisha: Pathways for Agricultural Innovation

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ABSTRACT

Coastal farm women in Odisha play a crucial role in agriculture, fisheries, and allied activities, yet their access to and dissemination of agricultural information remain fragmented. This study examines the structure and effectiveness of information networking among farm women in coastal Odisha. Using a mixed-method approach, including surveys, interviews, and social network analysis provide the research that identifies key information sources in decision-making. The study highlights the role of formal institutions, local knowledge systems, and digital platforms in strengthening information flow. Implementation of a social network method was used to select which nodes in the village received information about agriculture and allied sectors: nodes with the highest degree, nodes with high betweenness and nodes with high closeness. Further, we examine the information using trend across the network. The study mapped the information networks to identify key sources of agricultural information. Findings suggest that Coastal farm women exhibit a strong and diverse approach to acquiring information, utilizing multiple channels such as television, training programs, demonstrations, and input dealers, whereas tribal women primarily rely on SHGs and family members. Traditional knowledge-sharing practices coexist with emerging digital tools, shaping an evolving agricultural information ecosystem. Despite increased access to technology, social and gender norms often limit participation in formal agricultural extension services. The research emphasizes the need for inclusive, women-centric knowledge-sharing frameworks to enhance farm productivity, climate resilience, and livelihood security and recommend fostering more robust and inclusive information networks to support sustainable farming practices in coastal Odisha.

Keywords: farm women, information, networking, sustainable, SHG

Gender Perspective in Agricultural Research and Development

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ABSTRACT

'Gender perspective' refers to a way of seeing or analyzing which looks at the impact of gender on people's opportunities, social roles and interactions. Even though the term gender signifies the study of both men and women, in the agricultural context, the disparity was mostly observed on women as they still lack in access to and control over resources like land ownership, despite being the significant contributors to the agricultural labour pool. So, there is a need to focus on gender issues in agriculture and strengthening research and development is one of the strategies to address this. A perspective of gender can be given into research planning at different levels, from gender-aware to gender-transformative. A bibliometric analysis was conducted on all open access journals related to gender/women and agriculture for a period of 10 years (2013-2013) using VOS viewer software by Dimensions Database. An increasing trend was observed in the gender research in agriculture all over the world, and India was found to have a relatively lower number of research in this field. Rather than adding a word 'gender' in the study, integrating gender perspectives in all phases of research, starting from identification of the problem to selection of research design, data collection, analysis and dissemination of data was analysed here as a comprehensive review. In the selection of research design, consistent movement toward mixed methods has been visible in the past years. Some innovative data collection tools, including power of freedom, vignettes and ladder of power and freedom, have been introduced by GENNOVATE, a research initiative by CGIAR. Certain indices like Women's Empowerment in Agriculture Index (WEAI) and Women Empowerment Index have been used generally in the analysis of gender in agricultural context. Finally, in dissemination of information, considering the practical significance of observed differences and following the SAGER publication guidelines can be practiced. In conclusion, integration of gender perspective is necessary in the agricultural research context, and it includes integration in every phase of the research.

Keywords: Gender perspective, women in agriculture, bibliometric analysis

From Fields to Screens: How digital tools are empowering Women in Agriculture

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ABSTRACT

Women in India play a crucial role in agriculture contributing significantly to crop production, protection, post-harvest activities and in allied sectors including livestock and fisheries. The rural workforce in India is dominated by women with 75% performing various task like sowing, weeding, harvesting, sorting, grading and value addition. Despite their contribution, women often lack access to land ownership, credit, market opportunities, capacity building and modern technology. The gender disparities in case of land ownership, access to resources and capacity building and financial inclusion has obstructed women's productivity and economic independence. This gap can be reduced with help of digital tools, training and policy support which can significantly contribute to women's empowerment in agricultural sector. Digital technologies such as mobile applications, precision farming tools, IoT, GIS, Artificial Intelligence and e-trading platforms are helping women to overcome traditional barriers. In India, *Digital Green*, a video based learning initiative has reached thousands of women farmers with access to digital agricultural training and improving their productivity by 20%. The mobile applications like *Kisan Suvidha*, *Iffco Kisan* and *AgriApp* provide real-time weather updates, market intelligence and expert advice to help women to take informed farming decisions. Despite the advancements in digital and different technologies, challenges persist. Limited access to smartphones, internet connectivity issues in remote areas and socio-cultural barriers remain obstacles in adoption of digital inclusion. To address these issues, requires a sustained investment in rural infrastructure, gender-focused policies and community-driven education programs. With continued investment in digital public infrastructure and inclusive policies, India can further bridge gender gaps in agriculture, fostering a more equitable and sustainable farming sector to achieve Gender equality and Sustainable Development Goals.

Key words: Women empowering, Digital tools, Digital technologies, Role in agriculture, mobile applications, e-trading

Research topic "Role of Digital Literacy in Empowering Rural Women Farmers"

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ABSTRACT

This paper explores the transformative impact of digital literacy on empowering rural women farmers and enhancing their participation in agricultural decision-making. Rural women farmers, who play a crucial role in agriculture, often face barriers to accessing information and resources due to low digital literacy levels. These barriers hinder their ability to fully engage in and benefit from agricultural activities, ultimately affecting their socio-economic well-being and the overall productivity of the agricultural sector.

This study investigates various digital literacy programs designed to bridge this gap and evaluates their effectiveness in improving the socio-economic status of rural women.

Through an analysis of case studies and secondary data from sources such as the Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD), the research highlights how digital literacy initiatives have equipped rural women with essential skills to utilize digital tools, access agricultural information, and engage with online platforms. The paper also examines the role of digital literacy in fostering gender equality by enabling women to participate more actively in agricultural value chains and decision-making processes.

Furthermore, the paper discusses the broader implications of digital literacy in the context of sustainable agricultural development and rural livelihoods. It emphasizes the importance of tailoring digital literacy programs to the unique needs and circumstances of rural women, ensuring that they are accessible, relevant, and impactful.

Key words: Rural Women farmers, Empowerment, Digital literacy

Financial Freedom for Farm Women: A Digital Approach

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ABSTRACT

Digital and financial services are crucial for achieving individual financial well-being. Despite progress in financial inclusion, women in India face significant barriers in accessing and utilizing digital financial tools. This study highlights the need for targeted initiatives to enhance digital financial literacy among farm women. Key findings reveal that India has made significant strides in financial inclusion, with 77% of women holding accounts with financial institutions and women's skills in using digital devices are hindered by limited access, awareness, and digital literacy. To strengthen digital financial services for farm women, the government should initiate programs in collaboration with women para extension workers/ Mahila Madalis, drawing inspiration from successful models in Uganda (Fenix), Tanzania (myAgro), and Kenya (DigiFarm). By providing hands-on training and skills, these initiatives can empower farm women to confidently access and utilize digital financial services.

Keywords: Digital-financial services, para extension workers, model

Gender-Based Differences in Digital Technology Adoption among Dairy Farmers in Kerala

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ABSTRACT

The adoption of digital technologies in dairy farming presents significant opportunities to enhance productivity and increase farmer incomes. However, adoption remains uneven, influenced by socio-economic, behavioural, and infrastructural barriers, which may vary between male and female farmers. This study explores the gendered factors impacting technology adoption in Kerala, a state known for its high dairy potential and literacy rates. The research identifies key demographic, financial, technological, and behavioural factors influencing adoption decisions and highlights gender-based differences. A structured survey was conducted with 300 dairy farmers, analysed through logistic regression models to examine the effect of variables such as age, education, farm size, herd size, and access to digital resources. Findings reveal that older farmers, particularly males, were less likely to adopt technologies, while perceived complexity and lack of technical skills were significant barriers for both genders, with these issues being more pronounced for female farmers. Financial constraints were less impactful than behavioural factors, and male farmers in commercialized dairy operations showed higher adoption rates. This study emphasizes the need for gender-sensitive policies and interventions, including targeted training and user-friendly technology designs, to improve digital technology uptake among both male and female dairy farmers, contributing to a more inclusive and sustainable dairy sector.

Keywords: Digital Technology Adoption, Gender Differences, Dairy Farming, Binary Logistic Regression, Technology Barrier

Theme 3: Gender-responsive Climate-smart Agriculture

Performance evaluation of Cono-weeder at farmers' field of Jharkhand state

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ABSTRACT

Paddy cultivation involves different operations like sowing of paddy for seedlings growing, puddling, seedling uprooting & transplanting, weeding, spraying of insecticides/pesticides, harvesting and threshing. Among these operations paddy weeding is performed predominantly by women workers. Considering the role of women in weeding, it was necessary to have the women friendly equipment like manual weeder for reducing the work stress and increasing the work speed. As mentioned above, it was the need of an hour to have the mechanization of weeding action in order to improve the fit between the physical demand of the tools and the worker to make it suitable for women workers which were possible by extensively testing for its feasibility at farmer's fields. The ultimate aim was to have a popularization of light weight, user friendly and low cost suitable manual device i.e. Cono-weeder (CIAE-Bhopal make) for small scale farmers of the Jharkhand region. To address these problems, weeder was evaluated in field condition at operator's travelling speed 1.11 km/hr. Mean values of weeding efficiency, effective working depth of tilling and effective working width of tilling for weeder obtained were 89.32 %, 85 mm and 165 mm, respectively. The man power requirement per hectare was 70 man-days for traditional method of weeding, whereas it was only 8 man-days per hectare in case of weeding by weeder, thus reducing the man power requirement by 86.6 %. Similarly, weeding cost per hectare was Rs 2800 h^{-1} by weeder which is much less as compared with traditional method of paddy weeding where cost of weeding was Rs 24,500 h^{-1}, thus saving of about Rs 21,700 h^{-1}.

Keywords: Paddy weeding, weeding efficiency, labour and time reduction

Gender sensitization: Empowering women in the face of climate change in Parbhani

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ABSTRACT

Women, particularly in vulnerable communities are disproportionately affected by climate related challenges, including extreme poverty, food insecurity and health risks. Women produce 60-80% of the world's food but often lack access to resources, leaving them more vulnerable to food shortages during climate events. Women's involvement in decision making and resource management is essential .Their unique perspective can lead to innovative solutions for climate resilience. Women face more health challenges linked to climate change, including increased risks during natural disasters. Collaboration across governments, NGOs and communities is necessary to ensure gender responsive climate policies to implement effectively. Empowering women leads to enhanced community resilience, better resource management and improved health outcomes, creating a stronger foundation for climate action. The collective action to recognize and amplify women's roles in combating climate change, advocating for systematic change to ensure gender equality in climate initiatives. By integrating women's voices and ideas, we can build a more sustainable and equitable future for all.

Keywords: Food insecurity, climate resilience, Gender responsive climate policies, climate action

Gender-Responsive Climate-Smart Livestock Production in India: A Pathway to Resilience

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ABSTRACT

Livestock farming is key for rural livelihoods in India, and women play an important role in taking care of the animals by feeding, milking, and tending to health care. In spite of their enormous contribution, they are subject to many challenges, including low access to land, veterinary services, financial resources, and markets. Climate change adds to their burdens by inducing heat stress in animals, causing reduced milk production, increasing disease outbreaks Livestock, and lowering the availability of fodder. Women livestock farmers continue to face increasing challenges without targeted support. This article highlights climate-smart livestock solutions that can help women adapt, including the use of heat-tolerant breeds, sustainable fodder methods like silage-making, the generation of biogas for clean energy, and suitable training for women as para-veterinarians. Successful initiatives like the women-led dairy cooperatives in Rajasthan, ICAR-NICRA's climate-smart livestock program, and the empowerment strategy of the National Dairy Plan identify how targeted support can lean on to create a difference. However, several hurdles still remain, such as land tenure issues, access to credit, and insufficient opportunities to attend various crucial training workshops. To make livestock farming genuinely climate-smart and genuinely inclusive, policies should focus on bettering women's access to resources, financial aid, training, and decision-making positions. Investing in women livestock farmers is not just about this fairness; it is an important step toward actively creating a more resilient, food-secure, and climate-resilient agricultural system in India.

Keywords: Climate-smart livestock, women in agriculture, dairy cooperatives, gender-responsive farming, climate resilience

Gender Responsive Climate Smart Financing

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ABSTRACT

Gender equality and women's empowerment would produce stronger dividends on economic growth and, more broadly, sustainable development. Smart climate finance would include integrating gender awareness and gender criteria into climate financing structures and policies. Climate change, inequality and poverty are inextricably interrelated. In addition to societal barriers, gender differences in resource ownership and access (including land, credit, and technology) cause poverty, reduce women's ability to adapt, and raise their vulnerability to climate risk. In addition to supporting the accomplishment of the SDGs established to direct development action over the next 15 years, including SDG 1 (poverty reduction) and SDG 5 (gender equality), equitable factors can strengthen the climate response report. In order to maximize the co-benefits of adaptation and mitigation programs for the impoverished, especially women, climatic financing can leverage gender equality. The term gender responsive climate finance refers to funding initiatives that benefit entire communities, particularly women and also the women who face numerous intersecting forms of inequality, in order to make communities more gender equitable and climate resilient overall. This paper aims to study the barriers to women's access to climate finance (e.g., credit, grants, insurance) and the mechanisms to overcome them. It also focusses on the models available to promote equitable access to climate smart agricultural practices and also aims to take a review on how financial institutions can support women in adopting climate-resilient farming techniques. As we step to navigate the challenges faced, we analyze the data to inform ongoing evaluations of current and future objectives in order to assess progress and make sure that they can adapt to changing needs. The analysis could aid in the development of a more thorough picture of gender-responsive climate finance and assist climate finance providers in refining their own procedures for monitoring gender responsive finance.

Key words: Gender, Climate change, Finance, Credit, Insurance, Adaptation, Mitigation.

Understanding Climate Change Adaptation Gaps: A Gender-Based Comparative Study in Dahod District, Gujarat

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ABSTRACT

Climate change poses significant challenges to agricultural producers; however, the impacts and adaptation responses are gender-differentiated. The current study examines gender-differentiated differences in climate sensitivity and adaptive responses among cereal farmers in the Dahod district of Gujarat using Feminist Political Ecology, the Capability Approach and Resilience Theory as conceptual frameworks. Based on evidence gathered from 80 farmers (40 men and 40 women) through survey method (ex-post-facto research) in the Dahod and Limkheda talukas, the findings show that male farmers have higher exposure, perception, and scientific knowledge as compare to female farmers who have limited access to agricultural mass media, extension contact. Regression analysis identifies education, risk orientation, and cosmopoliteness as major predictors of adaptation, and the findings suggest significant gender-differentiated differences. Findings from t-tests suggest significant differences in climate sensitivity and adaptation responses, especially in the areas of soil and water conservation and pest management practices. Systemic barriers like limited access to credit and climate-resilient technologies constrain the resilience of women farmers. The study suggests the need for gender-sensitive policy interventions in the areas of training, financial inclusion, and institutional support to enhance equitable climate adaptation in the Dahod district.

Keywords: Agricultural Resilience, Climate Change Adaptation, Farmers, Feminist Political Ecology, Gender Sensitivity.

Adaptation of Farm Women to Climate Change

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ABSTRACT

Farm women are crucial to agricultural production, yet their role in climate change adaptation often goes unnoticed. They contribute significantly to food security and farm management, but face numerous barriers, including limited access to land, financial resources, technology, and decision-making platforms. The impacts of climate change, such as erratic rainfall, droughts, and floods, disproportionately affect women due to their traditional roles in food production, water collection, and household management. In response to these challenges, farm women employ various adaptation strategies to safeguard their livelihoods. These strategies include the use of drought-tolerant and flood-resistant crop varieties, soil conservation techniques etc. Despite their efforts, farm women remain vulnerable due to gender-based inequalities that hinder their ability to fully adapt to climate change. Limited access to agricultural extension services, credit, and technology prevents them from optimizing their production systems. Moreover, social norms often restrict their land ownership rights, further exacerbating their vulnerability. As a result, their potential to adopt climate-resilient practices is constrained. To enhance the adaptive capacity of farm women, it is essential to implement gender-sensitive policies that focus on improving access to land, credit, education, and technology. Empowering women through these measures can foster greater resilience in agricultural systems and improve food security. Additionally, involving women in climate change decision-making processes at local, national, and global levels is critical for creating more inclusive and effective adaptation strategies. Supporting farm women through targeted training programs, financial support, and community-based initiatives is vital for developing sustainable, climate-resilient agricultural practices. Ultimately, empowering women farmers will contribute to more equitable and resilient agricultural systems in the face of climate change.

Keywords: Farm women, Climate change adaptation, Gender inequality, Agricultural resilience, Adaptation strategies.

Cassia auriculata: A Lucrative Medicinal Legume for Climate Smart High Density Cultivation and Value Addition Potential to Instigate Women Entrepreneurs

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ABSTRACT

Cassia auriculata, L., is one of the traditional anti-diabetic flower power in all South-Asian countries and used as a neutral leaf henna for golden hair dyeing and hair nourishing powder which is much demanded in many parts of European countries. As a multi-purpose legume perennials playing a major role in agricultural diversification, women livelihood security, climate risk management and mitigation, improved resource conservation (preferred nitrogen rich green leaf manuring crop) and other ecosystem benefits. *C.Auriculata* (fresh / dried flowers) are major economic product /component which is widely consumed by people and it is main ingredient in other Ayurvedic medicines like constipation, fever, skin infections, female infertility and digestive issues which proven by thousands of pharmacological studies. Many successful women farmers already engaged in cultivation, harvesting and value addition product development which involves simple processing techniques using *Cassia Auriculata* mainly in Southern states. Under this circumstance, an experimental study conducted with *Cassia Auriculata*-elite genotype (CA-4) for high density planting was established under six different treatments viz.,T_1- Single row Cassia without SCT, T_2- Single row Cassia with SCT, T_3-Double row Cassia without SCT, T_4- Double row Cassia with SCT, T_5- Triple row cassia without SCT and T_6- Triple row Cassia with SCT at ICAR-IISWC, Research centre, Kota-Rajasthan during 2019-2023. In that, T_4- double row Cassia with SCT treatment has significant superiority on plant flower yield (2.670 kg plant^{-1}annum^{-1}, annual dry pod yield of (3.27 kg plant^{-1}annum^{-1}) compare to other treatments. High primary branching behaviour 14 and 25 secondary branches /plant and 23 number of flower head/plant was recorded under T_4 due to optimum spacing management and resource conservation compare other treatments. The superior performance of T_4 treatment in coppice growth and higher amount on green leaf biomass through coppice cutting (4.68 kg plant^{-1} cutting^{-1}), dry leaf biomass (3.29 kg plant^{-1} cutting^{-1}) and fruit-pod litter addition (2.72 kg plant^{-1}annum^{-1}) were recorded than other treatments in Chambal ravine lands. The potentiality of *Cassia auriculata* (CA-4) genotype has valued high soil conservation potential litter addition benefits due to their profuse high quality branching behaviour, shoot-root growth pattern and high tolerance potential in the non-arable ravine lands. It could be best climate resilient crop and also fit into high density plantation, live fence model, vegetative barrier, small scale agro-forestry and soil reclamation programmes as a legume crop as a legume based woody plant. Thus, it can be utilized for commercial cultivation in marginal or dry lands. It would useful to instigate value added products like green tea and cosmetic flower powder / products would beneficial income generation to the rural women and helpful to farm diversification, resource conservation and enhance mitigation of CO_2 in the part of ecosystem benefits.

Keywords: Cassia auriculata, climate smart farming, Green leaf manure high density plantation, income generation, Live fence, Legume, Women entrepreneur

Promoting Climate-Resilient Livestock Systems: A Gender-Responsive Approach for Women Farmers

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ABSTRACT

Climate change poses significant risks to global agriculture, particularly livestock farming, which is highly vulnerable to shifts in weather patterns, disease outbreaks, and extreme events. Women farmers, especially in developing countries, play a crucial role in livestock production but often face barriers such as limited access to resources, technology adoption, and decision-making power. Promoting climate-resilient livestock systems through a gender-responsive approach is essential for empowering women, enhancing agricultural productivity, and ensuring sustainability. Gender-responsive strategies in livestock farming can address specific needs and challenges faced by women farmers while building climate resilience. In climate-resilient livestock key practices such as the adoption of climate-resilient breeds, sustainable feed management, and diversified livestock systems are well-suited to changing environmental conditions. The gender-responsive policies and capacity-building initiatives can bridge the gender gap in livestock farming, ensuring equitable access to resources and technologies. There is a need for women-led initiatives in climate-resilient livestock farming. The outcomes of gender-responsive livestock systems are significant, including improved food security, enhanced income generation, and increased resilience to climate shocks. However, challenges remain, such as gendered access to land, finance, and training, as well as cultural and social barriers that limit women's participation in decision-making processes. To address these challenges, it is essential to promote women's leadership in livestock farming, provide gender-sensitive extension services, and ensure better access to climate-smart livestock technologies. By adopting a gender-responsive approach, climate-resilient livestock systems can contribute to sustainable agriculture, poverty reduction, and gender equality in rural areas.

Keywords: Climate Change, Climate-Resilient Livestock, Gender-Responsive Approach

Empowering Women: Gender-Inclusive Climate-Smart Agriculture and Climate Change Adaptation in Relation to the SDGs

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ABSTRACT

As the climate continues to rise and the effects of global warming become more frequent and severe, farmers and farm communities worldwide are facing new challenges. While the agriculture sector contributes to climate change through greenhouse gas emissions, it is also heavily influenced by the consequences of changing climate. In a scenario characterized by rapid climate change and expanding disparities, gender plays a fundamental role in influencing an individual's capacity to deal with climatic shocks and adapt to changes. Gender gaps in climate change adaptation are explained in terms of unequal ability of men and women to cope with and respond to climate-related challenges. Women in agrarian communities continue to face challenges such as low agricultural output and limited access to productive resources, services, and assets as a result of persistent gender disparities which influence access to resources, decision-making power, and adaptive capacity. Addressing gender gaps in climate change adaptation is essential for building more resilient communities. Women comprise some 43% of the agricultural labor force in developing countries and play a crucial role in climate resilience. Therefore, empowering them with resources, education, and decision-making power leads to more effective and sustainable adaptation efforts. Climate-smart agriculture offers strategies and technology that can boost agricultural output and incomes while lowering or eliminating greenhouse gas emissions. Women, on the other hand, have yet to gain significantly from climate smart agriculture (CSA). To become gender-responsive, CSA practices must engage with women at all levels. Boosting women's collectivization at the local level, increasing participation in macro-level leadership roles, and supporting women's decision-making at all levels are all critical to boosting gender responsiveness. To ensure gender inclusion and optimal CSA outcomes, institutional support, budgeting for and engaging with gender experts, raising awareness among stakeholders, engaging with men and women to understand their different needs from agriculture under climate change, and reorienting policy frameworks to enable CSA practices and technology adoption are all necessary. By all these efforts, the SDGs including gender equality and climate action can be effectively achieved using institutional interventions.

Keywords: Gender, Agriculture, Climate change adaptation, Climate smart agriculture, SDGs.

Theme 4:

Best practices for integrating women in Agri-tech start-ups

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From farm to fabric: Weaving prosperity by integrating women through Handicrafts promoting start-ups

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ABSTRACT

Jammu and Kashmir is known for its cultural essence and deep-rooted tradition of handicrafts and agriculture. Pashmina weaving, sozni and aari embroidery, papier mache and hand knotted carpet making forms the heart of traditional craft in this region. Nevertheless, women are still underrepresented in this sector. The socio-economic constraints, limited market accessibility, poor technical skills, lack of digital literacy and infrastructural constraints can form a major roadblock in realization of goals. By integrating women into handicraft-based start-ups can provide an impetus to them in terms of prosperity and inclusivity as well as seeks to generate employment. This paper explores an innovative approach to involve women in all operations from farm to fabric which will foster a much-needed socio-economic upliftment and empowerment by harnessing the region's abundant agricultural resources. Through training programs, government collaborations and additionally the technology driven interventions like digital platforms for marketing can serve as a blueprint promoting inclusivity. This paper includes women entrepreneurial case-studies preserving and promoting Kashmiri handicrafts such as EcoKash utilizing the talents of underprivileged women homeworkers in the region. By blending tradition with innovation will help in revolutionizing handicrafts sector here which can act as a catalyst for gender inclusivity.

Keywords: Handicrafts, Jammu & Kashmir, Start-ups, farm to fabric, women

Unlocking the Potential of Women in Agri-Tech: Entrepreneurial Competencies for Success

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ABSTRACT

The emergence of agri-tech start-ups has introduced numerous innovations in the agricultural sector, yet women entrepreneurs remain significantly underrepresented in this domain. Their limited participation stems from systemic barriers, including restricted access to financial capital, inadequate technological infrastructure, gender biases, and limited business networks. Despite these obstacles, women-led agri-tech ventures have the potential to drive inclusive and sustainable agricultural transformations, provided they develop and leverage key entrepreneurial competencies.

This study explores the essential entrepreneurial competencies that enable women to successfully navigate the agri-tech landscape, including opportunity recognition, leadership, digital literacy, resilience, and strategic decision-making. Through a systematic review of global research, the study identifies the structural and socio-cultural challenges that hinder women's entrepreneurial progress, such as gender disparities in digital skills, constrained access to markets, and insufficient policy support.

The findings highlight the critical role of gender-responsive policies, targeted capacity-building programs, and enhanced digital access in fostering women's participation in agri-tech entrepreneurship. Key strategies for bridging the gender gap include: 1. Equitable access to financial resources and digital technologies to ensure a level playing field, 2. Mentorship and networking opportunities to strengthen leadership and decision-making capacities and 3. Institutional support through inclusive policies and training initiatives tailored to the specific needs of women entrepreneurs.

Addressing these challenges is a strategic necessity for accelerating innovation, enhancing agricultural productivity, and improving rural livelihoods. By identifying and dismantling these barriers, this study provides actionable insights for policymakers, development practitioners, and researchers seeking to create an enabling environment for women-led agri-tech start-ups. Future research should focus on region-specific interventions and scalable models that further empower women entrepreneurs in agriculture.

Achieving a truly inclusive and sustainable agricultural ecosystem requires a concerted effort to enhance women's entrepreneurial capabilities, strengthen institutional support systems, and foster a more equitable agri-tech landscape.

Keywords: Women entrepreneurship, Agri-tech start-ups, Entrepreneurial competencies, Gender-inclusive innovation, Digital literacy, Policy frameworks, Rural economic development.

Empowering Tribal Women through the Processing of Locally Grown Foods as Microenterprises for Livelihood and Nutritional Diversification

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ABSTRACT

Empowering women through technology-driven microenterprises in household food crop processing has proven pivotal in addressing livelihood insecurity and malnutrition in tribal regions. Adilabad district, Telangana, faces high prevalence of anemia and undernutrition among infants, children, and lactating mothers, compounded by rain-fed, cotton-centric monocropping, fragmented landholdings, and seasonal agrarian employment (100–120 days annually). These factors perpetuate poverty, indebtedness, and migration from Gudams (tribal hamlets). Post-harvest losses due to inadequate cold storage further exacerbate vulnerabilities, forcing farmers to sell perishable vegetables at low prices during market gluts. Krishi Vigyan Kendra, Adilabad implemented a gender-inclusive innovation framework, establishing 22 multipurpose processing mills and solar dryer to benefit 21 tribal villages and 7,870 households. These facilities enabled value addition to nutri-cereals (millets, sorghum), pulses (red gram, bengal gram), soybean, and non-timber forest products (Mahua flowers). The mills processed 9.5–10.5 tonnes/month of crops into nutrient-dense flours, condiments (ginger-garlic paste, tomato puree), and shelf-stable products (masala powders, sprouted flours). Solar dryers extended the shelf life of fruits, vegetables, and leafy greens. Tribal women received hands on training in food processing, entrepreneurship, FSSAI-compliant packaging, and dietary diversification, fostering microenterprise ownership. Operators earned Rs.2,800–3,500/month, supplementing farm incomes. Mahua flower processing into value-added products (e.g., dry fruit ladoos) generated Rs.4.95 lakh annual profit through cooperatives, with 75% profits distributed among 35 members (₹500/day income). For tomato growers, zero-energy cooling chambers reduced post-harvest losses, enabling 15–18 days of storage and mitigating price volatility (Rs. 60–1,200/crate), while pickle production diversified revenue streams. Soybean utilization was optimized through nutrient-dense soy-millet composite porridges, soymilk, tofu and turmeric-based products (golden milk, turmeric powder), enhancing consumption and market linkages. This initiative highlights the transformative potential of gender-inclusive innovations in strengthening economic resilience, reducing post-harvest waste, and bridging nutritional gaps, offering a scalable model for sustainable livelihoods in resource-constrained regions.

Keywords: Local foods; Livelihood; Marketing; Microenterprises; Value addition

Successful Women Aqua Entrepreneurs: Case Studies of Odisha State

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ABSTRACT

Odisha possesses significant potential for advancing the fisheries industry, with 480 km of coastline, 685,000 hectares of freshwater resources, and 418,000 hectares of brackish water resources. As a whole, most people like fish more than other types of non-vegetarian food. Fish is very nutritious and cost-effective, and also one way to reduce malnutrition. In the fish farming industry, women play a variety of roles that combine tradition with new chances. To increase local fish production and consumption, the women have started doing aqua farming and various aqua entrepreneurship for consumption, marketing goods to boost the livelihoods of women. The crucial role that women play in the fishing industry emphasizes their diverse contributions to different phases of the business. It explores the socioeconomic effects of women's participation, highlighting their contribution to community development, sustainable practices, and the difficulties they encounter.

The present study highlighted the 10 case studies of successful women engaged in the development of aqua entrepreneurship in Odisha, India who worked in the fields of shrimp farming, crab culture, cage culture and concrete tanks, shrimp hatchery management, live feed farming, and shrimp processing unit, fish meal formulation, production, input supply, and marketing.

Key Words: Aqua entrepreneurs, Fish, Shrimp, Cage, Marketing

Bridging gender gaps in the conservation of indigenous seed diversity

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ABSTRACT

Conservation and protection of indigenous seed diversity are vital to global food security, promotion of agricultural biodiversity, and conservation of traditional farming practices. Over time, gender stereotypes and cultural norms have influenced men's and women's positions in agriculture, often limiting the involvement of women in seed conservation activities. Women have played a critical role in the conservation, selection, and sharing of indigenous seeds, particularly among rural and disadvantaged communities. This study explores how closing gender gaps in indigenous seed variety conservation and maintenance could improve agricultural resilience and promote sustainable agriculture. In recognizing and supporting the roles of both men and women in seed management, and ensuring equal access to resources, information, and decision-making, gender-based approaches can contribute to preserving important crop varieties for generations to come. The study examines the role of gender-sensitive policies, community-led programs, and the efforts of women's groups in supporting seed conservation activities. Finally, achieving gender equality in conserving indigenous seed diversity is critical to ensuring food sovereignty, enhancing climate resilience, and fostering a more equitable agricultural future.

Keywords: Gender inclusivity, indigenous seeds, conservation

Theme 5:
Policy frameworks for gender-inclusive agriculture

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Financial Freedom for Farm Women: A Digital Approach

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ABSTRACT

Digital and financial services are crucial for achieving individual financial well-being. Despite progress in financial inclusion, women in India face significant barriers in accessing and utilizing digital financial tools. This study highlights the need for targeted initiatives to enhance digital financial literacy among farm women. Key findings reveal that India has made significant strides in financial inclusion, with 77% of women holding accounts with financial institutions and women's skills in using digital devices are hindered by limited access, awareness, and digital literacy. To strengthen digital financial services for farm women, the government should initiate programs in collaboration with women para extension workers/ Mahila Mandalis, drawing inspiration from successful models in Uganda (Fintech), Tanzania (myAgro), and Kenya (M-pesa). By providing hands-on training and skills, these initiatives can empower farm women to confidently access and utilize digital financial services.

Keywords: Digital-financial services, para extension workers, model

Farmer Producer Organizations and ESG Finance: A Roadmap for Gender-Responsive Agribusiness Investment

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ABSTRACT

Gender-focused ESG (Environmental, Social, and Governance) investing is emerging as a key driver of financial inclusion, economic empowerment, and sustainability in agribusiness. Despite women comprising a significant share of the agricultural workforce, structural barriers—such as limited access to credit, financial services, and markets—impede their full participation. This study examines how ESG-aligned investment frameworks, impact funds, and sustainable financing instruments enhance access to capital for women-led agribusinesses and Farmer Producer Organizations (FPOs). It explores the role of green bonds, blended finance, sustainability-linked loans, and gender-lens impact investing in bridging the financial gap.By analyzing ESG investment trends, financial performance metrics, and case studies of women-led FPOs, the research highlights how gender-responsive financing models contribute to higher productivity, risk mitigation, and market competitiveness while advancing SDG 5 (Gender Equality) and SDG 8 (Decent Work and Economic Growth). Empirical evidence suggests that gender-inclusive ESG investments demonstrate strong risk-adjusted returns and long-term sustainability. However, challenges such as policy inefficiencies, investment bottlenecks, and a lack of gender-disaggregated financial data hinder scalability.

The study proposes regulatory enhancements, innovative financial instruments, and investor-driven incentives to strengthen ESG-based gender financing in agribusiness. By integrating gender equity metrics into ESG reporting frameworks, financial institutions, development banks, and policymakers can accelerate gender-equitable capital deployment, fostering a more inclusive and resilient agricultural sector.

Keywords: ESG investing, Gender-inclusive finance, Farmer Producer Organizations (FPOs), Sustainable agribusiness, Impact investing, Financial inclusion

Community Animal Health Workers (CAHWs) to Empower Rural Women: The *Pashusakhi* Model

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ABSTRACT

The *Pashusakhis* are the women selected among their community members to serve as a Community Animal health worker (CAHWs) within their local areas primarily trained in providing preventive health care services to animals, ensuring to fill the existing gap within conventional veterinary services and remote areas. In the year 2013, the *Pashusakhi* model was implemented in Jharkhand, improving the livestock management in India. Since then the *Pashusakhi* model is being supported to expand across the country under the National Rural Livelihood Mission (NRLM). The goal was to teach women chosen from the community to deliver primary health care services for animals. The model has successfully expanded across many states of the country resulting in improved livestock productivity and lesser mortality rates, thus helping to ensure livelihood of small livestock farmers. However, while the model improved income and livestock production, issues regarding, long term sustainability of the model, and the acceptance in certain aspects of veterinary services like breeding practices by women, remains a concern. By documentation of the services, perceived value, identifying constraints faced by *Pashusakhis* working as a CAHWs, successful integration of *Pashusakhis* into national policies can be done with support and training. A conducive policy framework with inclusion of women in policy making will help the model to transform *Pashusakhi* into a socio economic symbol of rural development in livestock sector while improving veterinary services and promoting women empowerment.

Keywords: *Pashusakhi*, Veterinary Services, CAHWs, NRLM, Women empowerment

Gender-Responsive Agricultural Policies: Pathway to Food Security and Rural Development -A Review

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ABSTRACT

Agriculture is important for food security and rural development, especially for developing countries. However, chronic gender inequalities limit its potential for sustainable development. Women, who make up the majority of farm workers, are faced with systemic limitations constraining their productivity. This review highlights the imperative for gender-responsive agricultural policies to address these inequalities and improve food security and sustainable rural development. These policies aim to recognize and address the differentiated roles and needs of women and men in agriculture, ensuring equal access to resources and decision-making, leading to sustainable livelihoods. Land tenure is one of the areas of focus, where secure land tenure is essential for women's empowerment and access to finance through gender-responsive lending and financial literacy, leading to a more sustainable financial system. The review also highlights the imperative for gender-friendly agricultural technologies and gender-specific extension services to ensure sustainable farm practices. The review calls for strengthened political will, capacity development, gender-disaggregated data collection, and multi-stakeholder partnerships to foster sustainable and inclusive change. In conclusion, prioritizing gender equality in agriculture is essential to ensuring sustainable and equitable food security and rural development outcomes, leading to long-term environmental and social well-being.

Keywords: Gender-responsive policies, agriculture, food security, rural development, sustainability

Gender Disparities in Access to Technical Advice and Its Impact on Agricultural Income in India

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ABSTRACT

Access to technical advice plays a crucial role in enhancing agricultural productivity and income levels among farmers. This study examines the impact of accessing and adopting technical advice related to agricultural activities on agricultural incomes among Male and Female-Headed households across two different state categories in India, utilizing the 77th NSS round's unit-level data on the Situation Assessment Survey of agricultural households and land and holdings in rural India, 2019. For the purpose of the study, 20 states were classified into two categories based on the percentage of female-headed households, category I having a female-headed percentage less than the all-India average and category II having greater or equal to the all-India average. Households were categorized according to their access to technical advice, including those who accessed advice during both NSSO visits, those who accessed advice during either visit one or visit two, and those who did not access any advice, using the scoring method. The descriptive analysis suggests that 59.3 percent of agricultural households have access to technical advice related to agricultural activities. The major finding reveals that category II states have high access to technical advice. In contrast, category I states have less access to technical advice but a high adoption rate, significantly improving their agricultural income. This trend is observed within the states belonging to the same category. The study used a t-test to identify the differences in crop income across two categories, highlighting their significant disparities. Additionally, the study found that the top-ranked source of technical advice is Progressive Farmer, followed by Input dealers, TV/Radio/ other electronic media, the Veterinary department, and Print media. Among the types of information accessed are cultivation (improved seed/variety), followed by Fertilizer application, Plant Protection Pesticides, Health Care, and Harvesting or Marketing. Access to technical advice is important, but adoption of that advice is crucial for enhancing income.

Keywords: Agricultural Household, Technical advice, Agricultural income, Male-Headed households, Female-Headed households

Towards gender inclusive agriculture: strengthening nutrition literacy in farming community through policy innovations

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ABSTRACT

India is the fifth largest economy in the world. India ranks first in milk production and second in production of food grains in the world. It is also the largest producer of millets – the nutri-cereals, in the world. It is the most populous country in the world and therefore nutritional security is inevitable for the healthy and disease-free population. According to the National Family Health Survey (NFHS) – 5 (2019 to 2021), released by Ministry of Health and Family Welfare, India suffers from double burden of malnutrition. Child malnutrition is reported as 36.00 per cent of the children under 5 are stunted, 19.00 per cent are wasted, 32.00 per cent are underweight, 03.00 per cent are overweight and 67.00 per cent suffers from anemia. Among adults, 16.00 per cent males and 19.00 per cent females suffer from under-nutrition, 23.00 per cent males and 24.00 per cent females suffer from over-nutrition and 25.00 per cent males and 67.00 per cent females suffer from anemia. This is the miserable condition despite plethora of initiatives like National Nutrition Mission, Integrated Child Development Services, Mid-Day Meal Scheme and various state government programmes. This paper suggest policy innovations aimed at enhancing nutrition literacy through gender-inclusive agricultural extension and rural development programs**.** It explores strategies such as integrating nutrition education into agricultural advisory services, promoting gender inclusive approaches and leveraging digital tools for targeted outreach**.** By addressing gender differences in knowledge, access, and decision-making**,** these policies can enhance nutrition literacy, improve household food security and foster a more inclusive agricultural system**.**

Keywords: Nutritional security, Malnutrition, Gender inclusive, Policy innovations

Theme 6:

Bridging the Gender Gap in Agri-business and Rural Entrepreneurship

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Enhancing women's participation: A Gender-sensitive value chain approach

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ABSTRACT

As agricultural feminization increases, women's participation in agriculture has grown significantly. In India, 67.2% of the agricultural workforce comprises women, yet their contributions remain underrepresented and undervalued, particularly in agricultural value chains. Women's roles are largely concentrated in labour-intensive and drudgery-prone activities within production and processing, while men dominate the business, trade and decision-making. A comprehensive analysis along the value chain will help to have a detailed look on the roles of different actors, many of whom are often overlooked. This approach helps identify gender-based constraints, conflicting issues, and structural barriers that limit women's participation at various stages in the value chain. Moreover, such an analysis is critical in designing targeted interventions that promote women's inclusion and advancement. This approach aims to ensure equitable access for both male and female rural producers to agricultural inputs and improve their market opportunities for crops and products. Additionally, the promotion of women-friendly technologies and mechanization can reduce labour intensity, improve productivity, and equip women with the skills needed to ascend to leadership positions within agribusiness. Strengthening women's roles in higher-value segments of the value chain not only fosters gender equity but also enhances the overall efficiency and sustainability of the agricultural sector.

Key words: Gender sensitive, Value chain approach, Labour intensive, Drudgery prone, Agri business, Women friendly, Technologies

Bridging the Gender Gap in Rural and Agri-Business in India: Empowering Female Entrepreneurship

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ABSTRACT

This paper addresses the critical issue of the underrepresentation of women in rural and agri-business entrepreneurship in India, despite their significant contributions to agricultural production and rural economies. Through a comprehensive analysis of existing literature, policies, and programs, this research identifies the key challenges and barriers that hinder women's participation in entrepreneurship, including limited access to credit, technology, and training.

This study examines the effectiveness of various policies and schemes launched by the Indian government, such as the National Rural Livelihood Mission (NRLM), Stand-Up India, and the Mahila Kisan Sashaktikaran Pariyojana (MKSP), aimed at promoting women's entrepreneurship and economic empowerment. The research also explores the role of technology, innovation, and social entrepreneurship in bridging the gender gap in rural and agri-business.

The paper provides recommendations for policymakers, practitioners, and stakeholders to address the challenges and barriers faced by women entrepreneurs in rural and agri-business, and to create an enabling environment that fosters their growth and empowerment. By addressing the gender gap in entrepreneurship, this research aims to contribute to the promotion of inclusive and sustainable economic growth in rural Indi

Key words: Gender gap, Agribusiness, Female entrepreneurship, Policies and schemes

Cooperative as a Tool for Rural Women's Entrepreneurship and Empowerment: Case Studies from Gujarat, India

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ABSTRACT

Empowering women in tribal context through entrepreneurship development makes them economically and socially viable. In this context, for improving the socio-economic status of the tribal women and enhancing participation in cooperative movement, Shroffs Foundation Trust (SFT), a non-governmental organisation in Gujarat, had constituted a cooperative society, where women members are mobilized into Self Help Groups and registered as "Shardadevi Gramudyog Utpadak Cooperative Society Ltd." in the year 2009. SGS is an independent entity registered under the "Gujarat Cooperatives Act" with well defined by laws. SGS is a successful model of small scale enterprise for economic and social empowerment of women in the tribal areas of Chhotaudepur in Gujarat state of India. The society operates in 36 tribal villages of Chhotaudepur with 162 SHGs and 1600 tribal women as primary members. The women cooperative society is facilitated by SFT as a special vehicle to conduct interventions for livelihood and empowerment of tribal women through entrepreneurship development, microfinance and handicraft promotion. The cooperative started its journey with handicrafts for skill development and now have ventured into food processing and microfinance. The cooperative offers loan with 1% interest to the tribal women to start their own enterprises – milch animals, bioinput preparation, and provision stores among others based on the corpus fund as saving. Each tribal woman contribute/save Rs 100 per month to the corpus to avail loans. This collective model has uplifted the tribal women, freeing them from drudgery. Women who were earlier working as farm labourers started their own business. This transformation has enabled them to support their children's education and contribute to their families' financial well-being. A qualitative study was conducted to assess the empowerment, changes in income and social status after enrolling in SGS. Kabeer's empowerment theory was used to assess empowerment through Focus Group Discussions and in-depth interviews. The selected participants of FGD were part of different activities going on under SGS such as handicraft, food processing, and microfinance and entrepreneur development. The results revealed that the interventions on rural entrepreneurship taken by the cooperative have positively impacted the empowerment of tribal women. Especially, the tribal women who were employed in low earning jobs and worked as labourers were economically empowered and in turn increased their social status, decision making capabilities and control over assets. Besides increase in income, the SGS women could build their network, create solidarity among the community and improve their overall well-being. The findings will be supported by case studies and success stories documented among the tribal women.

Key words: NGO, Cooperative societies, Women entrepreneurship, Women empowerment, Small scale enterprises, Livelihoods

Exploring Gender Gaps in the Utilization of Extension and Advisory Services (EAS) with special reference to Livestock Farming

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ABSTRACT

Access to Extension and Advisory Services (EAS) connects farmers with organizations to enhance sustainability and rural livelihoods, making equitable access and utilization imperative, especially for small-scale farmers in India. However, the efficiency of EAS is impeded by constraints such as insufficient funding, poor institutional frameworks, and low farmer engagement. Since most extension efforts typically target household heads or predominantly male farmers, women farmers have limited access to these services, despite their substantial contributions to livestock production. Structural and socio-economic barriers further restrict their participation in decision-making processes within animal husbandry, while the gender-biased orientation of extension services exacerbates these inequalities. As a result, there is an urgent need for inclusive, gender-responsive strategies to ensure equitable access for women farmers. According to the World Economic Forum (2023), India has bridged 64.30% of the overall gender gap; however, with only 36.70% parity in economic participation and opportunities, targeted interventions remain essential to address these disparities. The present study aims to examine livestock farmers' perceived preferences in utilizing different EAS and to assess gender roles in different animal husbandry practices. The study was carried out in the Ri-Bhoi district of Meghalaya, involving a sample of 120 livestock farmers (60 males and 60 females), ensuring the inclusion of primary male and female decision-makers from each household. Data were gathered using a semi-structured interview schedule, and the responses were systematically quantified and analysed employing appropriate statistical methods. Results showed that information received from different EAS sources was generally preferred by male decision-makers as compared to female decision-makers. EAS provision of health management among the other components was preferred by both male and female decision-makers. Furthermore, the study also highlighted that female livestock farmers were more engaged in various animal husbandry practices. Considering this study on preferences and gender roles, analysing the provision of EAS in addressing the gender gap will serve as a foundation for developing policy guidelines that facilitate demand-driven EAS delivery, prioritizing client needs and satisfaction.

Key words: Animal husbandry, extension personals, livestock extension, north-eastern region, women farmers.

Rural Livelihood Generation through a Gender Inclusive Technology and its Contribution to Women Empowerment: Assessment of Mushroom Intervention by Shamayita Math in Gangajalghati Block of West Bengal

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ABSTRACT

Most of the farmers in Gangajalghati Block of Bankura District, West Bengal are small and marginal farmers. According to the Socio Economic and Caste Census, the block has 0.38 lakh households of which 48.9 per cent are landless, 86.2 per cent are low income and only 1.20 per cent own irrigated land. Under the given circumstances, off-farm based livelihood like mushroom cultivation has vast scope for poverty alleviation in the location. Considering this scenario, Shamayita Math, a non-government organization working on agriculture and allied sector started Mushroom activity in Gangajalghati block since financial year 2014-15. During the last ten years the organization has collectivised women around Self-Help Groups and has also facilitated establishment of a Women's Farmer Producer Company in 2021. At present through the programme, technology has been demystified and women have been enabled to adopt this as a means of supplementary livelihood. Most of these households are into the activity for around a decade and continue to produce and market Oyster Mushroom with less with very little programme support. While most women have taken up retail to get more share in the consumers rupee, the Farmer Producer Company helps in sourcing of inputs and wholesale of fresh mushroom. Total mushroom produced from the activity is seven metric tonnes providing an incremental income to women farmers of seven lakh rupees. This has given an identity to women farmers, have helped them explore the outside world and contribute towards the well-being of the family. The women farmers who are now confident have taken up cultivation of white button mushroom, which is considered an even more difficult technology than growing oyster mushroom. The present paper hence discusses empowerment of women farmers of this Sanchari Farmer Producer Company. The dimensions discussed are impact of the activity on family well-being, digital readiness of the women farmers, their communication environment, social environment and financial capabilities. This paper will be useful for academicians, policy makers and practitioners who want to understand the impact of long-term engagement with women farmers in technology transfer programmes in building off-farm livelihoods and role of women's community-based institutions.

Key Words: Community Based Institutions, Women farmers, Empowerment, Farmer Producer Company, Mushroom

Empowering Her Power: Women FPOs Bloom for Impact and Growth

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ABSTRACT

Women-led Farmer Producer Organizations (FPOs) are reshaping India's agricultural landscape by fostering economic resilience, gender equity, and market inclusivity. Women's participation in FPOs is still disproportionately low, only 20 per cent in some regions, despite the growing feminization of agriculture, which hampers their ability to start their own businesses.

The Bhumigadi Mahila Krushak Farmer Producer Organization (BMKFPO) in Bastar, Chhattisgarh, as well as other successful models like Jeevika Bihar, are the focus of this study's analysis of the effects of women-centric FPOs. Findings reveal a substantial increase in members' income (up to 493.70% in turmeric production), enhanced market access, and strengthened collective bargaining power. Although issues including a lack of legislative support, budgetary limitations, and sociocultural hurdles still exist, women-led FPOs also aid in financial inclusion, leadership development, and technology adoption. The full potential of female FPOs can be realized through fostering digital literacy, expanding access to financing, and fortifying institutional frameworks. This research emphasizes how women collectives can promote inclusive agricultural development and close gender gaps in rural economies.

Key words: Women-led FPOs, Economic Resilience, Market Access, Gender Equity, Financial Inclusion

Building a Gender-Inclusive Agri-Ecosystem: An Enabling Environment for Women Agripreneurs.

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ABSTRACT

Considering the extent and diversity of participation in Agriculture and allied activities, women's involvement can be attributed to agripreneurship development. Women farmers hold immense potential to transform the agricultural landscape, but their contributions are often marginalized due to deeply rooted gender disparities and systemic barriers. Even though the Government of India, with its gender-inclusive policies, has been creating a supportive environment for agricultural development, women farmers and agripreneurs face obstacles like restricted access to land and credit, market competition, inadequate infrastructure, Socio-cultural barriers, and delays in government funding. Many women lack land ownership, affecting their ability to secure loans and benefits, while insufficient storage and processing facilities limit the growth of agri-enterprises. Gender biases also restrict women's participation in decision-making and networking opportunities. To address these challenges, it is imperative to analyze the women-based agripreneurship ecosystem in the country. Hence, this research study aims to study the women-based agri-enterprises across India to study key challenges, including restricted land and financial resources, limited decision-making authority, insufficient market exposure, and socio-cultural constraints. This study also proposes to create a comprehensive framework that helps in exploring the parameters of creating an enabling environment for women agripreneurs. This framework emphasizes identifying policy reforms that prioritize equitable access to credit, land ownership, and subsidies. It also includes capacity-building programs focused on technical skills, financial literacy, and market intelligence. Additionally, it advocates for enhanced infrastructure, such as cold storage, processing units, and digital platforms, to ensure that women agripreneurs can access and compete in broader markets. Strengthening grassroots networks, such as Self-Help Groups (SHGs), and promoting leadership through women-led FPOs are highlighted as critical tools for collective empowerment. The proposed ecosystem-based approach has significant implications for driving rural development, fostering inclusive economic growth, and achieving sustainable agricultural practices. By empowering women agripreneurs, this framework not only bridges gender gaps in agriculture but also aligns with global sustainable development goals (SDGs), including gender equality and poverty alleviation. This study reinforces the critical need for a gender-inclusive agri-startup ecosystem to catalyze innovation, resilience, and equitable growth in the agricultural sector.

Keywords: Women Agripreneurs, Gender-Inclusive Ecosystem, Agri-Startups, Sustainable Agriculture, Policy Reforms, Rural Development

Bridging the Gender Gap in Agri-Business and Rural Entrepreneurship

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ABSTRACT

Agriculture is one of the most widespread activities in the world which has a significant role in food production, rural employment and sustainable development. From the gender point of view in agriculture there are significant gaps between men and women. This manuscript aims to bridge the gender gap in agri-business and rural entrepreneurship. In recent years, progression has been made to improve women's participation in these sectors. Many policies and programs have been introduced by Governments, international organizations and financial institutions to empower them and to remove the inherent gender bias in these sectors. Microfinance initiatives, training programs and digital technologies have provided women with better access to financial resources, education. Digital tools also help women to access to information, create new entrepreneurship opportunities. Studies reveal that when women are given equal opportunities as men, the agricultural productivity can increase by 20-30%, leading to improved food security and economic development. Despite these advancements, gender disparities still exist. Since more than 87% of women do not own land, financial resources and limited access to training and technology. However traditional gender norms and legal restrictions often marginalized women and restricting their ability to participate completely in agri-business and entrepreneurship. Many rural business women continue to work in low profit due to limited technical knowledge and infrastructure. Despite these challenges women are leading to be successful in agri-business ventures and engaging in value-added agricultural enterprises. Closing the gender gap and strengthening women's role in agri-business is essential for economic growth, sustainable rural development and will lead to more resilient and prosperous rural economies.

Keywords: Gender gap, Agri-business, Technology, Sustainable development.

Entrepreneurial attitude of the girl students of agriculture faculty

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ABSTRACT

India is the fifth largest economy in the world with national GDP worth USD 3.5 Trillion. India has the third largest entrepreneurial ecosystem in the world. According to the Economic Survey of India (2023-24), 57% of the total workforce of India is self-employed. It is observed from the Economic Survey that 64% of the total women in India are involved in agriculture and allied activities, indicating the increase in the feminization of agriculture. Agriculture and allied sector forms the source of raw materials for secondary sector and various processing and manufacturing industries, giving huge employment opportunity to youth and particularly women. Agricultural entrepreneurship has wide scope in India. India has around 63 million enterprises, of which 11.4% are agricultural enterprises. Out of total enterprises, only 20% are women-owned. Entrepreneurial activities related to food processing, value addition, custom hiring services can generate employment for youth and reduce unemployment. Agricultural entrepreneurship provides huge scope to women to tap their entrepreneurial potential. It is crucial to enhance their attitude towards entrepreneurship to mainstream them in this sector. With this consideration, the present study was undertaken to investigate the attitude of girl students towards the agricultural entrepreneurship. It was conducted in Anand Agricultural University. 50 final year undergraduate girl students were randomly selected for the study. The responses were collected using specially designed interview schedule through Google Forms. It is found that majority of the girl students had highly favorable attitude towards agricultural entrepreneurship. Academic performance, Annual family income, Family type, agricultural entrepreneurship workshop were found positively significant. Locality was found positively related and academic performance was found negatively significant with the attitude of girl students towards entrepreneurship.

Keywords: Agricultural entrepreneurship, Attitude, Employment, Innovation, Startups

A comprehensive review on rural women entrepreneurship in India: Issues and Challenges

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ABSTRACT

Rural women entrepreneurship in India has emerged as a critical driver of sustainable economic growth and poverty alleviation, yet it remains marked by significant challenges. This comprehensive review examines the current status, issues, and challenges faced by rural women entrepreneurs in India, drawing on secondary data from journals, articles, case studies and reports. The study used exploratory as well as descriptive research design. The study highlights the pivotal role of women entrepreneurs in rural development. However, rural women entrepreneurs face multifaceted barriers, including limited access to finance, lack of entrepreneurial skills, societal and familial constraints, and inadequate government support. These challenges are further compounded by psychological barriers, weak bargaining power, and market-related issues. The review also explores innovative strategies and government initiatives aimed at empowering rural women entrepreneurs, emphasizing the need for gender-sensitive policies and institutional support. Despite these efforts, a significant gender gap persists, necessitating a more inclusive approach to address the unique challenges faced by rural women. This paper concludes with actionable recommendations for policymakers, practitioners, and researchers to foster an enabling environment for rural women entrepreneurship, thereby contributing to the broader goals of rural development and gender equality in India.

Keywords: Rural Women Entrepreneurship, Women Entrepreneurs in India, Rural Development, Gender Equality, Economic Empowerment

Promoting entrepreneurship to empower women livestock farmers: Thinking Beyond Production

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ABSTRACT

Women farmers who are the primary food producers can be duly recognised and empowered by making them self-sufficient and economically stable and socio-culturally more active through agripreneurship. Entrepreneurship development along agricultural value-chains could be an instrument for securing food security and empowering women. Women's dairy co-operatives could play an appreciable role in the livelihoods of women farmers in India, but now more efforts are required towards entrepreneurial development in the livestock sector. Apart from production, women farmers can be encouraged towards preparation of livestock products, especially traditional dairy and meat products through value addition. Traditionally prepared desi livestock products, especially products from organic farming are gaining prominence due to its flavour, nutritional value and taste. Processing of the food produced is one of the major areas of thrust and capacity building in food processing can draw favorable outcomes. The studies carried out on dairy women over the years show the existence of a large gap in terms of knowledge and the opportunities livestock related innovative interventions could offer.

The efficient extension services coupled with other efforts can narrow the gap in access to resources and technologies contributing to women farmers' productive engagements in high value dairying ventures through entrepreneurial skill development. The experiences from the studies conducted in Andhra Pradesh revealed the appreciable role of mobile telephonic Extension Advisory Services in the capacity building of women farmers from marginalized groups engaged in dairying and backyard poultry. A recent training where value addition of both farm produce and by-product were oriented to rural farm women received appreciable attention and interest towards additional income generating activities. Extension & Advisory Services (EAS) coupled with methods of facilitatory and non-formal extension may offer necessary help in progressively diversifying the potential women farmers. This may lead to bridging gaps and in linking rural economy with globalised markets.

Key words: Women livestock farmers, Extension advisory services, Women entrepreneurship, Empowerment, Agripreneurship

Challenges faced by Women Agripreneurs in Developing countries: Areview

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ABSTRACT

This paper explores the significant challenges faced by women entrepreneurs in agriculture in developing countries. Many women are involved in farming out of necessity rather than choice, relying on agriculture to support their families. However, they face limited access to critical resources such as land, water, markets, financing and technology, which hinders their ability to grow their businesses. Gender inequality further exacerbates these challenges, as women often face discrimination and have less control over resources, limiting their opportunities for success.

Additionally, women encounter legal, cultural, and bureaucratic barriers. Issues such as the inability to jointly own land, restrictive property laws and complicated processes for obtaining credit or land titles make it difficult for women to access the support they need to develop their agricultural businesses. These structural, legal and bureaucratic obstacles prevent women from fully participating in agricultural development, despite their essential role in food security and economic growth. The paper calls for policy changes and support systems to help women overcome these barriers and enable them to contribute more effectively to the agricultural sector.

Keywords: Agriculture, Challenges, Entrepreneurs, Farm-women.

Bridging the Gender Gap in Agri-business and Rural Entrepreneurship

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ABSTRACT

Women play a crucial role in agri-business and rural entrepreneurship, yet they face systemic barriers that hinder their full participation and success. This manuscript explores the gender disparities in agricultural entrepreneurship, the challenges women face, and the policy interventions required to create an inclusive environment. Drawing insights from various studies, the paper highlights financial constraints, socio-cultural norms, limited access to land, and inadequate training as key obstacles. It also presents case studies of successful women entrepreneurs and recommends strategies for bridging the gender gap in agri-business. The research also emphasizes the role of digital tools and cooperative models in fostering gender-inclusive growth in rural economies.

Keywords: Gender Equality, Rural Entrepreneurship, Agri-business, Women Empowerment, Financial Inclusion, Policy Interventions, Agricultural Cooperatives, Digital Innovation

Cooperative as a Tool for Rural Women's Entrepreneurship and Empowerment: Case Studies from Gujarat, India

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ABSTRACT

Empowering women in tribal context through entrepreneurship development makes them economically and socially viable. In this context, for improving the socio-economic status of the tribal women and enhancing participation in cooperative movement, Shroffs Foundation Trust (SFT), a non-governmental organisation in Gujarat, had constituted a cooperative society, where women members are mobilized into Self Help Groups and registered as "Shardadevi Gramudyog Utpadak Cooperative Society Ltd." in the year 2009. SGS is an independent entity registered under the "Gujarat Cooperatives Act" with well defined by laws.

SGS is a successful model of small scale enterprise for economic and social empowerment of women in the tribal areas of Chhotaudepur in Gujarat state of India. The society operates in 36 tribal villages of Chhotaudepur with 162 SHGs and 1600 tribal women as primary members. The women cooperative society is facilitated by SFT as a special vehicle to conduct interventions for livelihood and empowerment of tribal women through entrepreneurship development, microfinance and handicraft promotion. The cooperative started its journey with handicrafts for skill development and now have ventured into food processing and microfinance. The cooperative offers loan with 1% interest to the tribal women to start their own enterprises – milch animals, bioinput preparation, and provision stores among others based on the corpus fund as saving. Each tribal woman contribute/save Rs 100 per month to the corpus to avail loans. This collective model has uplifted the tribal women, freeing them from drudgery. Women who were earlier working as farm labourers started their own business. This transformation has enabled them to support their children's education and contribute to their families' financial well-being. A qualitative study was conducted to assess the empowerment, changes in income and social status after enrolling in SGS. Kabeer's empowerment theory was used to assess empowerment through Focus Group Discussions and in-depth interviews. The selected participants of FGD were part of different activities going on under SGS such as handicraft, food processing, and microfinance and entrepreneur development. The results revealed that the interventions on rural entrepreneurship taken by the cooperative have positively impacted the empowerment of tribal women. Especially, the tribal women who were employed in low earning jobs and worked as labourers were economically empowered and in turn increased their social status, decision making capabilities and control over assets. Besides increase in income, the SGS women could build their network, create solidarity among the community and improve their overall well-being. The findings will be supported by case studies and success stories documented among the tribal women.

Key words: Cooperatives, Women entrepreneurship, Empowerment, Tribal Women

International Seminar on
"Technology and Innovations for Gender Inclusivity in Agriculture"

Seminar Agenda

Date: 19-20 March 2025 **Venue: Norman Borlaug Hall, MANAGE, Hyderabad**

Day 1 - 19 March 2025		
Time	**Program**	**Place/Guests**
9.00 am to 10.00 am	Registration	Registration Desk at Entrance of Norman Borlaug Hall
10:00 am to 10:05 am	Welcoming the Guests	Ms. S L Kameswari, Consultant, MANAGE
10:05am to 10:15 am	Welcome Address & Seminar Overview	Dr Veenita Kumari Deputy Director (Gender Studies), MANAGE
10:15 am to 10:25 am	Lighting of Lamp	Dignitaries on the stage
10:25 am to 10:35 am	Keynote Address by IRRI	Dr. Sugandha Munshi, Lead Specialist & Senior Associate Scientist, Sustainable Impact Department, IRRI
10:35 am to 10:45 am	Keynote Address by UN Women	Ms. Shaguna Gahilote, Programme Analyst, UN Women, India Country Office, New Delhi
10:45 am to 10:55 am	Keynote Address by CABI	Ms. Madhu Manjari Agri-Digital Tools Coordinator- South Asia, CABI, New Delhi
10.55-11.10 am	Keynote Address by MANAGE	Dr Sagar Hanuman Singh, IPoS Director General, MANAGE
11:10 am to 11:15 am	Release of Compendium	Dignitaries on the stage
11:15 am to 11:20 am	Felicitation of Guests	Dr Sagar Hanuman Singh, IPoS Director General, MANAGE
11:20 am to 11:25 am	Vote of Thanks	Ms Pragati Shukla, Consultant, MANAGE
11.25 am -11.45 am	**Group Photo**	All Dignitaries and Delegates
12.00-1.00 pm	**Panel Discussion 1 "Policy Intervention for Strengthening Gender Inclusive Agriculture System**	**Moderator:** Dr Veenita Kumari Deputy Director (Gender Studies), MANAGE **Panel Speakers:** 1. Dr. Sugandha Munshi, Lead Specialist & Senior Associate Scientist, Sustainable Impact Department, IRRI 2. Shri Neeraj Kumar Singh,

		State Project Manager, Social Development & Gender, BRLPS, (JEEVIKA), Bihar. 3. Ms. Kalamani, Senior Consultant 4. Smt. Mylaram Sulochana, Women Farmer, Hyderabad
1:00 pm to 2:00 pm	**Lunch Break -** Executive Dining Hall	
2:15 pm to 3.30 pm	**Theme 1 : Technological advancements driving gender inclusivity in agriculture** **Keynote Address and Research Paper Presentation** **Chairperson-** Ms. Madhu Manjari Agri-Digital Tools Coordinator- South Asia, CABI, New Delhi **Co-chair-** Ms. S L Kameswari **Rapporteur-** Ms. Nedhi Rani Sharma, Consultant, MANAGE	**Keynote Speaker**: Ms. Madhu Manjari, Agri-Digital Tools **Coordinator-** South Asia, CABI, New Delhi
3.30-4.00 pm	**Coffee Break**	
4:00 pm to 6:00 pm	**Theme-2 Women's empowerment through digital tools and agricultural innovations** **Keynote Speaker and Research Paper Presentation** **Chairperson-** Dr. Mahesh Chander, Principal Scientist, IVRI, Izatnagar, Bareily, U.P. **Co-chair-** Dr. K. Naresh, Academic Associate, MANAGE **Rapporteur-** Dr. Aravinda , Consultant, MANAGE	**Keynote Speaker:** Dr. Mahesh Chander, Principal Scientist, IVRI, Izatnagar, Bareily, U.P.
Day 2 20 March 2025		
9:30 am to 10:30 am	Panel Discussion 2 on **"Innovations on Gender**	**Moderator:** Ms. Madhu Manjari

	Responsive Climate Smart Agriculture"	Agri-Digital Tools Coordinator- South Asia, CABI, New Delhi **Panel Speakers:** 1. Dr. Sugandha Munshi, Lead Specialist & Senior Associate Scientist, Sustainable Impact Department, IRRI 2. Dr Veenita Kumari, Deputy Director (Gender Studies), MANAGE 3. Ms. Shaguna Gahilote, Program Analyst, UN Women, India Country Office, New Delhi 4. Smt. Engareddy Arudhathi, Women Farmer
10:30 am to 11.00 am	**Coffee Break**	
11.00 am -1.15 pm	**Theme wise Keynote address & Research Paper Presentation** **Theme -3 Gender-responsive climate-smart agriculture** **Chairperson-** Ms. Shaguna Gahilote, Program Analyst, UN Women, India Country Office, New Delhi **Co-chair-** Dr. C Sreelakshmi, Academic Associate, MANAGE **Rapporteur-** Ms. Pragati Shukla, Consultant, MANAGE **Theme-5 Policy frameworks for gender-inclusive agriculture** **Chairperson-** Dr. Babita Bohra, Gender and Social Inclusion Coordinator, CIFOR-	**Keynote Speaker**. Dr. Dhanlakshmi, Scientist, KVK, Nandyal **Keynote Speaker** : Dr. Babita Bohra, Gender and Social Inclusion Coordinator, CIFOR-ICRAF Asia Continental Program

	ICRAF Asia Continental Program **Co-chair-** Ms. D. Kiranmayi, Academic Associate, MANAGE **Rapporteur**- Dr. Sangmesh, MANAGE Fellow	
1.15-2.15 pm	**Lunch Break**	
2.30- 4.30 pm	**Theme wise Keynote address & Research Paper Presentation** **Theme -4 Best practices for integrating women in agri-tech start-ups** **Theme-6 Bridging the gender gap in agri-business and rural entrepreneurship** **Chairperson-** Dr. Shreekant, Faculty, Ni-msme, Hyderabad **Co-chair-** Dr. Anil Kumar Reddy, Academic Associate, MANAGE **Rapporteur-** Dr. Sushreerekha Das, MANAGE Fellow	 **Keynote Speaker:** Ms. Indira Reddy, Founder, Sacred Honey, Hyderabad **Keynote Speaker:** Dr. Shreekant, Faculty, Ni-msme, Hyderabad
4.30-5.00	**Coffee Break**	
5.00 pm to 5.50 pm	**Valedictory**	
	Moderation	Ms Pragati Shukla, Consultant, MANAGE
5:00 pm to 5:05 pm	Welcome Address	Ms S L Kameswari, Consultant, MANAGE
5:05 pm to 5:15 pm	Seminar Report Presentation	Dr Veenita Kumari Deputy Director (Gender Studies), MANAGE
5.15-5.25	Remarks of Chief Guest	Dr. Shaikh Meera, Director, ATARI, Hyderabad
5:25 pm to 5:35 pm	Certificate and memento distribution	Dr Sagar Hanuman Singh, IPoS Director General, MANAGE
5:35 pm to 5:45 pm	Concluding Remarks	Dr Sagar Hanuman Singh, IPoS Director General, MANAGE

5:45 pm to 5:50 pm	Vote of Thanks	Dr K. Naresh, Academic Associate, MANAGE

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