

वार्षिक प्रतिवेदन Annual Report 2021

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Azadi Ka
Amrit Mahotsav



भा.कृ.अनु.प. - केन्द्रीय कृषिस्त महिला संस्थान
ICAR- CENTRAL INSTITUTE FOR WOMEN IN AGRICULTURE
(Indian Council of Agricultural Research)
Bhubaneswar - 751 003, Odisha, India



VISION

Emergence as a leading centre for gender research and serve as a catalyst for gender mainstreaming and women empowerment in agriculture to realize enhanced productivity and sustainability of agriculture

MISSION

Generate and disseminate knowledge to promote gender sensitive decision making for enhancing efficiency and effectiveness of women in agriculture

MANDATE

Research on gender issues in agriculture and allied fields. Gender-equitable agricultural policies/ programmes and gender-sensitive agricultural-sector responses. Co-ordinate research on Women in Agriculture

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(Indian Council of Agricultural Research)
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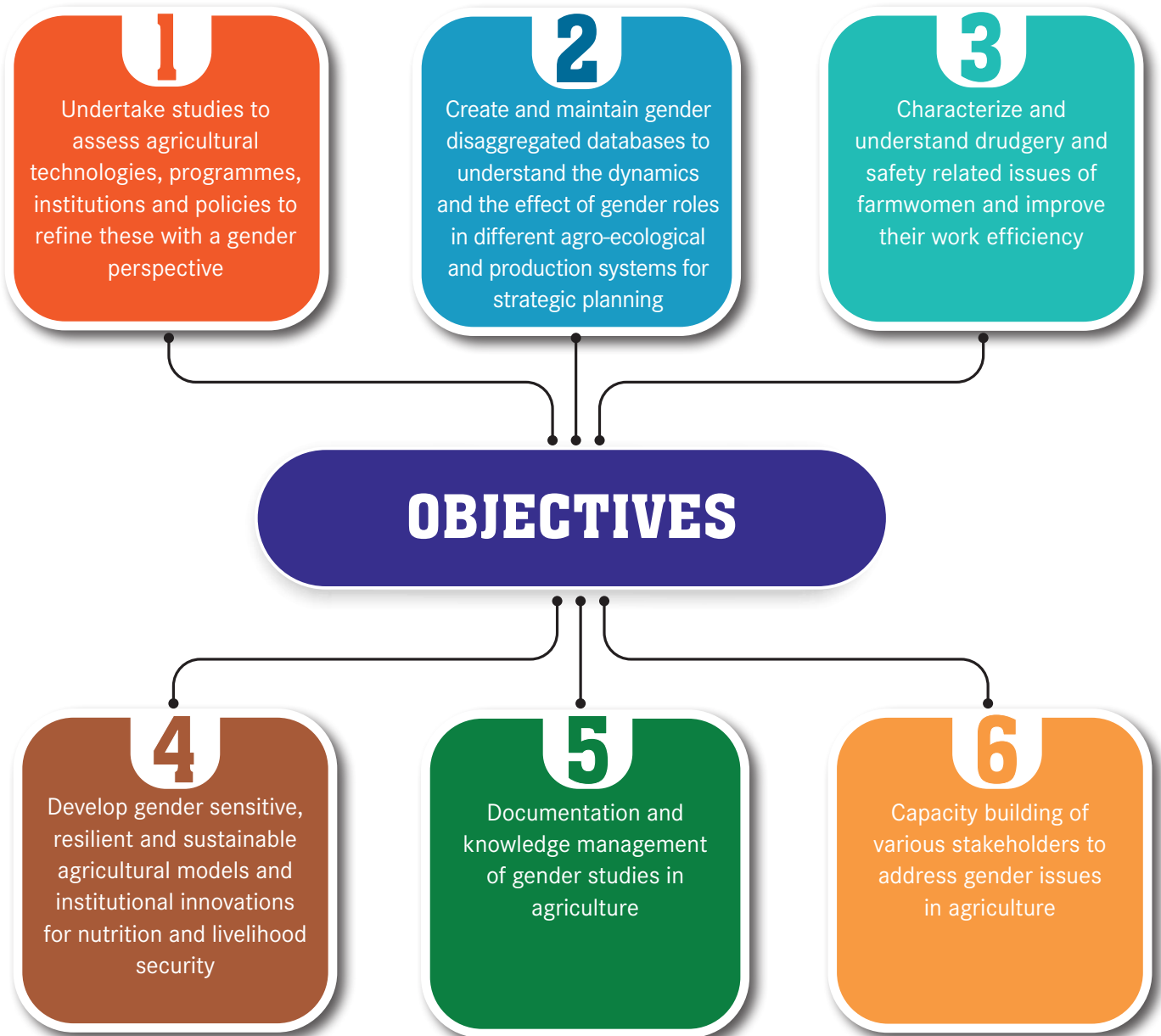
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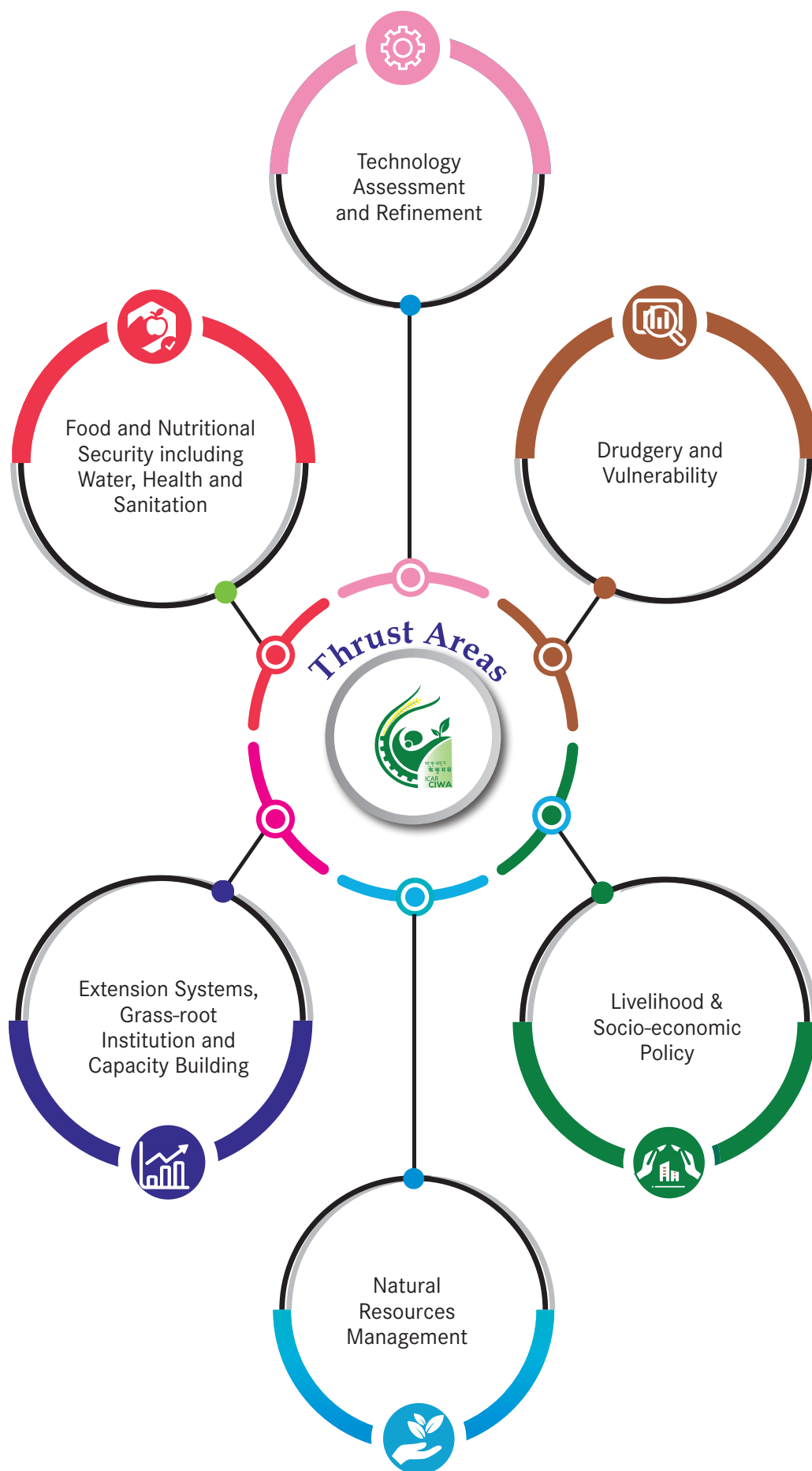
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ORGANOGRAM



PREFACE



Agriculture sector is in way of structural transformation with women coming to the forefront to take Indian agriculture to a path of greater heights. They play a key role in agriculture in India apart from the reproductive role, household activities, care giving etc. They provide critical labour by carrying out large number of activities in agriculture, livestock management, fisheries, storage, processing and marketing. Women participating in agricultural activities face a number of challenges that limit the human potential they have. The challenges are in the form of social barriers, lower asset ownership, technological constraints and institutional bias. ICAR-CIWA since its inception has been working to mainstream and empower women in agriculture through research, capacity building and policy advocacy. During 2021 the Institute has strived hard to take the efforts to a higher level through research, extension and capacity building to meets the challenges that hold back the farm women.

Participation and contribution of men and women engaged in agriculture and allied sectors for States and Union territories of India were analysed using Time Use Survey 2019. The pattern of daily time use in other activities viz. unpaid work, leisure, and self-care were also analysed. For enhanced participation and contribution of women in agriculture there is a need to share the unpaid domestic and care work. Assessment of farm women for energy use pattern was studied in different AER of Indo-Gangetic plains Bengal basin, Kathiawar peninsula, Deccan plateau, Narmada, Tapi, Mahanadi, Godavari, Krishna river deltas. A business model was developed for undertaking small-scale poultry entrepreneurship development in which three poultry germplasms, Vanaraja, RIR and Kadaknath were identified. Farm women were identified to take up poultry entrepreneurship with vital support from institute. All India Coordinated Research Project (AICRP) on Women in Agriculture has been strengthened with addition of 6 new centres (Andaman Islands, Bhubaneswar, Cooch Bihar, Dantiwada and Jhansi) to represent all the agroclimatic zones of the country. AICRP on Ergonomics and Safety in Agriculture (ESA) addressed the safety aspect of tools, equipments and machinery used by farm women in different operations.

A national programme on “Nutrition Smart Villages: An Innovative Model for Strengthening POSHAN Abhiyan” was launched by Hon’ble Minister of Agriculture & Farmers’ Welfare, Shri Narendra Singh Tomar to commemorate 75 Years of India’s Independence to strengthen the POSHAN Abhiyan .

During the year a total of 20 seminars, webinars and talks on diverse topics on different aspect of gender in agriculture were organised by the Institute in collaboration with other reputed institutions. Participation of scientist and technical staff in more than 45 national and international webinars during the year also enriched their knowledge. Twenty seven training programmes were organised under the Scheduled Castes Sub-Plan during the year benefitting 1131 women beneficiaries who received technical backstopping and were introduced to women friendly technologies. Twenty eight research papers, 15 popular articles and 8 technical bulletins were published during the year. The flagship programmes like, Mera Gaon Mera Gaurav (MGMG), Swachh Bharat Mission, Scheduled Caste Sub-Plan (SCSP) etc. were implemented for creating awareness as well as economic empowerment of women farmers.

I thank the Director General, ICAR and Secretary, DARE for giving the valuable insights for addressing the issue of gender inequality in agriculture and providing all facilities, budget for carrying out research, extension and other development programmes of the Institute. Dr. R.C. Agarwal, DDG (Agri. Edn.) and Dr. P.S. Pandey, ADG (EP&HS) have been constant source of inspiration and have been guiding the institute on regular basis. I place on record my sincere gratitude to the Chairman and Members of RAC for their valuable inputs for reorienting the research activities of the Institute. The editorial team deserves appreciation for synthesizing the Annual Report-2021 in a timely manner. I believe this report will be useful to all stakeholders working for the cause of women in agriculture.


(Anil Kumar)

Central Institute for Women in Agriculture

Research Programmes

1

Create, characterize, classify and maintain the repository of database to analyse the dynamics and role of women in different sectors of agriculture in different agro-ecological regions

3

Community-based technological interventions for food, nutrition, livelihood securities and entrepreneurship development for farm women

5

Assessment, refinement and popularization of gender friendly technologies and skill enhancement of farm women

2

Standardization of Techniques for Livelihood Analysis and Women Empowerment in different Agro-Ecological Zones

4

Vulnerability Framework and Drudgery Reduction for Women in Agriculture

कार्यकारी सारांश

भाकृअनुप-केंद्रीय कृषिरत महिला संस्थान, भुवनेश्वर ने विभिन्न अनुसंधान और विस्तार आधारित गतिविधियों का संचालन आंतरिक, अंतर-संस्थागत और सहयोगी संस्थानों के साथ समन्वित तरीकों के माध्यम से किया। 2021 के दौरान, अनुसंधान, विस्तार और प्रौद्योगिकी हस्तांतरण गतिविधियों में प्रमुख उपलब्धियों को संक्षेप में प्रस्तुत किया गया है। सूचना के विभिन्न स्रोतों का उपयोग करके कृषि और संबद्ध क्षेत्रों में महिलाओं की भागीदारी और योगदान का निर्धारण करने के लिए जनगणना, एनएसएस के 68वें दौर के सर्वेक्षण और समय उपयोग अध्ययन (TUS) 2019 पर विचार किया गया। आंकड़ों का विश्लेषण और सारांश तकनीकी बुलेटिन 'भारत में कृषि में कार्य भागीदारी और महिलाएं' में किया गया है। देश में कृषि में पुरुषों और महिलाओं की भागीदारी कि व्यापक समझ के लिए आंकड़ों को लिंग, स्रोतों, विभिन्न कृषि क्षेत्रों और राज्यवार जानकारी के आधार पर वर्गीकृत किया गया है। फसल और पशुधन क्षेत्रों में महिलाओं के योगदान को मापने के लिए राष्ट्रीय सांख्यिकी कार्यालय (एनएसओ 2020) द्वारा हाल ही में प्रकाशित टीयूएस 2019 के आंकड़ों को कृषि और संबद्ध गतिविधियों में भाग लेने वालों के लिए प्रयोग किया गया। विश्लेषण में 2019 तक महिलाओं और पुरुषों की भागीदारी पर सबसे नवीनतम जानकारी प्राप्त हुई। यह देखा गया कि भारत में लगभग 28.9 प्रतिशत पुरुष और 13.3 प्रतिशत महिलाएं फसल उत्पादन क्षेत्र में हैं, जबकि पशुधन क्षेत्रों में पुरुषों और महिलाओं की भागीदारी क्रमशः 10.8 और 10.7 प्रतिशत है। आंकड़ों से पता चला कि देश में फसल उत्पादन क्षेत्र में पुरुषों और महिलाओं का योगदान क्रमशः 73 प्रतिशत और 27 प्रतिशत है जो स्पष्ट रूप से इंगित करता है कि पुरुषों की तुलना में फसल उत्पादन क्षेत्र में महिलाओं का योगदान कम है। साथ ही, यह देखा गया कि पशुधन क्षेत्र में महिलाओं का योगदान काफी अधिक (46%) है। लैंगिक आंकड़ों के परियोजना में यह विश्लेषण किया गया कि 2011 की जनगणना के अनुसार, भारत में कुल 36.26 करोड़ श्रमिकों में से 16.55 करोड़ पुरुष और 9.76 करोड़ महिलाएँ थीं, जो कृषि क्षेत्रों में कृषक और कृषि मजदूर के रूप में काम करती थीं। विशेष रूप से पिछली दो जनगणनाओं के दौरान कुल श्रमिकों के बीच पुरुष कृषकों की प्रतिशत हिस्सेदारी में उल्लेखनीय गिरावट देखी गई है। 1971, 1981 और 2011 के दौरान कुल श्रमिकों में महिला कृषकों का बहुत कम प्रतिशत हिस्सा देखा गया। कुल श्रमिकों में पुरुष कृषि मजदूरों की प्रतिशत हिस्सेदारी पिछली तीन-जनगणना अवधि के दौरान बढ़ी है जबकि महिलाओं के लिए प्रतिशत हिस्सा लगभग स्थिर था। गैर-कृषि गतिविधियों में श्रमिकों की कुल प्रतिशत हिस्सेदारी समय के साथ उल्लेखनीय रूप से बढ़ी है।

क्रियान्वित पशुधन योजनाओं के विश्लेषण रिपोर्ट से पता चला है कि स्वीकृत परिव्यय का 5% (190 करोड़ में से 11 करोड़) छोटे पशुओं के एकीकृत विकास योजना के माध्यम से उपयोग किया गया। केंद्रीय सरकार (पशुपालन और डेयरी विभाग (2020-21)) की लगभग तेरह योजनाएं (3007.89 करोड़ रुपये के बजटीय आवंटन) का मूल्यांकन किया गया, जिसमें ऐसी कोई विशिष्ट योजना नहीं पाई गई जो महिला सशक्तिकरण के लिए विशिष्ट रूप से निर्धारित की गई हो। महिला सशक्तिकरण के प्रमुख कार्यक्रम यानी राष्ट्रीय पशुधन मिशन की उपलब्धियों (2018-21) से पता चला है कि उद्यमिता विकास और रोजगार सृजन के तहत 32,981 लाभार्थियों की सहायता की गई है, ग्रामीण अंचल में पिछवाड़े कुक्कुट विकास में 3.68 लाख लाभार्थियों को वित्त पोषित किया गया था। 35.64 लाख पशु बीमा किए गए, 3.0 लाख बकरी और 9.80 लाख सूअरों को स्वास्थ्य सहायता दी गई, 41 राज्य कुक्कुट/ भेड़/ बकरी/ सुअर पालन फार्म आदि को महिला लाभार्थियों से संबंधित किसी विशिष्ट आंकड़ों की रिपोर्ट के बिना समर्थन दिया गया। एनएलएम-उप योजना, उद्यमिता विकास और रोजगार सृजन का उद्देश्य पशुधन उत्पादन प्रणाली में सुधार और हितधारकों की क्षमता निर्माण करना है। हालांकि, इन योजनाओं में महिला लाभार्थियों के लिए अलग से कोई प्रावधान नहीं किया गया था और इस बात की वकालत की गई थी कि 30% बजट का उपयोग करने के प्रयास किए जा सकते हैं।

कृषि महिलाओं के आजीविका विश्लेषण को अंतिम रूप देने के लिए पुरी के कनास ब्लॉक के जगुलीपदार गांव में लैंगिक जरूरतों और बाधाओं की पहचान की गई। यह गांव, 100 से अधिक वर्षों से मौजूद है। यह दया और मकर नदी के किनारे और चिल्का झील से केवल 5 किमी दूर स्थित है। मछुआरा समुदाय (अनुसूचित जाति) के 759 परिवार और 40 भूमिहीन परिवार हैं। गांव में 137 हेक्टेयर खेती योग्य भूमि है जिसमें 85 निम्न, 42 मध्यम और 10 उच्च भूमि शामिल है, जिसमें से केवल 100 एकड़ में धान उगाया जाता है। मछली की खेती के लिए दो बड़े तालाब हैं; पीने के पानी के लिए चार नलकूप हैं। ग्राम स्तर पर 270 सदस्यों के साथ 'माँ जागेश्वरी प्राथमिका मच्छा जिबी समबाया समिति' के नाम से एक मत्स्य प्राथमिक सहकारी है, जबकि जिला स्तर पर एक फेडरेशन है।

जलागम कार्यक्रम के माध्यम से महिला सशक्तिकरण मूल्यांकन के तहत भारत के विभिन्न एईआर में महिलाओं की भागीदारी और योगदान का आकलन करने के लिए लिंग संवेदनशीलता अनुसूची पद्धति विकसित की गई। नई तैयार की गई अनुसूची कृषि महिलाओं के बहुआयामी पहलू आजीविका, आय, श्रम और तकनीकी

सशक्तिकरण का प्रतिनिधित्व करती है। भारत के विभिन्न ईआईआर (AER) से मूल घरेलू आंकड़ा 9 जलागमों से संग्रह किया गया था। आंकड़ा विश्लेषण इंगित करता है कि जलागम कार्यक्रम भारत के 9 कृषि पारिस्थितिक क्षेत्रों में फैले 35 गांवों में सांस्कृतिक रूप से विविध मानव संसाधन के साथ 4636 हेक्टेयर क्षेत्र में निष्पादित किया गया था। इस परियोजना के माध्यम से विभिन्न जलागम में कार्यरत 88 स्वयं सहायता समूह का आंकलन जलागम स्थिरता और फसल और गैर-फसल आधारित गतिविधियों के लिए महिला आजीविका सुरक्षा में महिलाओं और SHG की भूमिका के लिए किया जा रहा है।

डेयरी परियोजना में यह देखा गया कि, हालांकि ऑपरेशन फ्लड के 5 दशक बीत चुके हैं, फिर भी भारत में उत्पादित कुल दूध का 60% असंगठित क्षेत्र में डाला जाता है। महिलाओं को आर्थिक और सामाजिक रूप से स्वतंत्र बनाने के लिए उनकी घरेलू भागीदारी से ज्यादा महिला किसानों की संस्थागत भागीदारी पर जोर देने की जरूरत है। महिला सहकारी समितियां कई विस्तार गतिविधियों के माध्यम से उनके कौशल और ज्ञान में सुधार करने में मदद करती हैं, उन्हें दूध विपणन के मामले में सुविधा प्रदान करती हैं और उन्हें व्यापार पारिस्थितिकी तंत्र का दायरा दिखाती हैं। ओडिशा डेयरी के आने वाले भविष्य में गुजरात जैसे विभिन्न सूक्ष्म उद्यमों के माध्यम से महिलाओं की सामाजिक और वित्तीय सुरक्षा का समर्थन करने की आवश्यकता है। एक मूल अध्ययन के बाद यह पाया गया कि ओडिशा में 8 दूध संघ हैं और कटक दूध संघ (462) में अधिकतम WDSCS है और गंजम में न्यूनतम (20) है। कटक दूध संघ के भीतर कटक जिले (212) में सबसे अधिक WDSCS है। इस जिले के भीतर महंगा (39) और नियाली (30) में अधिकतम WDSCS है। गंजम दूध संघ में गंजम जिले (10) में न्यूनतम WDSCS और चिकिटी (2) और कुकुदाखडी (2) ब्लॉक में WDSCS सबसे अधिक है। प्रश्रवली विकसित की गई और विभिन्न विशेषज्ञों द्वारा वैधता की जाँच की गई।

मछलियों को सुखाने के स्वच्छ तरीके का प्रदर्शन करने के लिए महिला एसएचजी समूह के सदस्यों के साथ एक प्रदर्शन आयोजित किया गया था। उन्हें मछली के कचरे से साइलेज तैयार करने में प्रशिक्षित किया गया ताकि वे अपनी आय में सुधार के लिए मछली के प्रसंस्करण से उप-उत्पाद का उपयोग कर सकें। कनमाना गांव में दो अनुसूचित जाति महिला एसएचजी समूहों को मूल्य वर्धित मछली उत्पादों पर अपना उद्यम शुरू करने के लिए दो सौर कैबिनेट ड्रायर और दो एल्यूमीनियम पन्नी सीलिंग मशीनों के साथ सुविधा प्रदान की गई है। कनमाना की महिला एसएचजी समूहों ने मछली के अचार को “फिशलाइक्स” ब्रांड नाम से भी बेचना शुरू कर दिया है। लघु कुक्कुट पालन, बकरी पालन एवं मूल्यवर्धित मत्स्य उत्पाद उद्यमों के लिए आर्थिक विश्लेषण/व्यवसाय योजना तैयार की गई है। तीन पोल्ट्री जर्मप्लाज्म, वनराज, आरआईआर, और कड़कनाथ की पहचान की गई है और छोटे पैमाने पर कुक्कुट उद्यम विकास के लिए एक

व्यवसाय मॉडल तैयार किया गया है। उद्यमिता में छोटे पैमाने पर कुक्कुट पालन करने के लिए पांच कृषि महिलाओं की पहचान की गई है और बेहतर कुक्कुट पालन पर उनकी क्षमता निर्माण कार्यक्रम आयोजित किया गया। कुक्कुट पालन में बेहतर प्रबंधन प्रथाओं पर दो कुशल-आधारित क्षमता निर्माण कार्यक्रम आयोजित किए गए हैं।

भारत के विभिन्न कृषि अंचलों में महिलाओं के श्रम मूल्यांकन के तहत यह देखा गया कि कुछ जिले ऐसे हैं जो एफपीए (FPA) के उच्च, मध्यम और निम्न स्तर के समूहों का निर्माण करते हैं। संक्षेप में यह ध्यान दिया जा सकता है कि उच्च एफपीए (>2.03 किलोवाट/हेक्टेयर) वाले क्लस्टर कृषि के अनुकूल कृषि पारिस्थितिक क्षेत्रों के हिस्से से संबंधित हैं जैसे कि 4,5,6,7,8,9,13, 15,19 (सिंधु-गंगा के मैदान बंगाल बेसिन, काठियावाड़ प्रायद्वीप, दक्कन पठार, नर्मदा, तापी, महानदी, गोदावरी, कृष्णा नदी डेल्टा)। इन समूहों में या तो इसके माध्यम से बहने वाली एक बारहमासी नदी है या अच्छी गुणवत्ता वाली जलोढ़, काली, तराई, मिट्टी आदि के साथ नदी डेल्टा, इनकी ऊंचाई भी कम है और विशाल मैदान शामिल हैं। इन सभी कारकों के कारण किसान एक वर्ष के दौरान कई फसलें लेता है, इसलिए, समय पर कृषि संचालन के लिए यांत्रिक साधनों का उपयोग करता है। साथ ही भारी कृषि मशीनरी जैसे स्व-चालित कंबाइन ट्रैक्टर और ट्रैक्टर से चलने वाले उपकरणों के संचालन की सुविधा मैदानी क्षेत्रों द्वारा की जाती है। दूसरी ओर, कम FPA (<1.00 किलोवाट/हेक्टेयर) वाले क्लस्टर कृषि की दृष्टि से प्रतिकूल कृषि पारिस्थितिक क्षेत्रों (ईआईआर) के कुछ हिस्सों से संबंधित हैं जैसे कि 2, 7, 10, 11, 14, 16, 17, 18 (पश्चिमी और पूर्वी हिमालय; मालवा का पठार, पूर्वी पठार, बुंदेलखंड का पठार; पश्चिमी मैदान, असम का मैदान, उत्तर बंगाल का मैदान; उत्तर-पूर्व की पहाड़ियाँ)। इन सभी कारकों के कारण कम शुद्ध बुवाई क्षेत्र और कम फसल तीव्रता होती है। मध्यम FPA (1.00 - 2.03 किलोवाट/हेक्टेयर) वाले क्लस्टर कृषि पारिस्थितिक क्षेत्रों (AER) के कुछ हिस्सों में आते हैं, जिनमें अनुकूल और प्रतिकूल विशेषताओं का मिश्रण होता है, जिसके परिणामस्वरूप मध्यम कृषि आवश्यकताएँ होती हैं। इस प्रकार ये क्षेत्र AER के मध्यम स्तर तक सीमित हैं।

लैंगिक संवेदनशील कृषि पोषण परियोजना के तहत तकनीकी हस्तक्षेपों के कारण पोषण संबंधी पहलुओं के बारे में कृषि महिलाओं के ज्ञान स्तर में परिवर्तन को समझने के लिए एक सर्वेक्षण किया गया था। परिणाम दर्शाता है कि बागवानी फसलों के तकनीकी हस्तक्षेप के माध्यम से, 57.50% कृषक महिलाएं अब पूर्व-परियोजना स्थिति (17.50%) की तुलना में पोषण के बारे में बहुत अच्छी तरह से जागरूक (> 60%) हैं। जबकि, केवल 15% कृषि महिलाएं ही पूर्व-परियोजना स्थिति (50.00%) की तुलना में पोषण संबंधी पहलुओं के बारे में कुछ हद तक जागरूक (<30%) हैं। परियोजना के पहले वर्ष में सर्वेक्षण के दौरान यह देखा गया कि कोई भी परिवार कंद फसलों की खेती में शामिल नहीं था। इसलिए, महिलाओं द्वारा उगाई

जाने वाली बागवानी फसलों की प्राथमिकताओं का अध्ययन करने के लिए एक और सर्वेक्षण किया गया। विभिन्न पहलुओं के बारे में गुणवत्तापूर्ण रोपण सामग्री और क्षमता निर्माण के वितरण के माध्यम से दो गांवों में कृषि महिलाओं द्वारा की जाने वाली बागवानी फसलों की प्राथमिकताओं को बदल दिया गया था। महिला किसान अब अरबी की खेती करना पसंद करती हैं, लोबिया, करेला, भिंडी और आइवी लौकी की खेती का भी रुझान बढ़ा है।

IVNFS के प्रोटोटाइप-1 पर लगाए गए सब्जियों की फसलों की वृद्धि पर सूर्य के प्रकाश वितरण के प्रभाव का अध्ययन किया गया। सूर्य के प्रकाश वितरण की घटना का अध्ययन दो दिशाओं अर्थात् पूर्व-पश्चिम और उत्तर-दक्षिण में किया गया था। IVNFS के वेजिटेबल ट्रफ पर पड़ने वाले सूर्य के प्रकाश का वितरण लक्स मीटर (रेंज: 0-50000 लक्स; बिजली की आपूर्ति: 9वीं डीसी बैटरी; करंट: 2mA) की मदद से पंक्तियों और स्तंभों के मैट्रिक्स में दर्ज किया गया था। पूर्व-पश्चिम अभिविन्यास में, जैसे ही सूर्य आकाश को पार करता है, एक तरफ हमेशा दूसरी तरफ से छाया के अधीन होता है। जबकि उत्तर-दक्षिण अभिविन्यास में, पूरे दिन पूरे ढांचे में सूरज की रोशनी वितरित की जाती है। इस प्रकार, एक तरफ पूर्व से सुबह की धूप मिलती है और दूसरी तरफ पश्चिम से दोपहर की धूप मिलती है। चूंकि लगाई गई सब्जियां सूर्य-प्रेमी होती हैं, इसलिए सूर्य के प्रकाश के इस वितरण पैटर्न को लाभकारी माना गया। यह निष्कर्ष निकाला गया कि IVNFS संरचना को उत्तर-दक्षिण अभिविन्यास में रखा जाएगा।

पोषण-स्मार्ट ग्राम मूल्यांकन परियोजना के तहत ग्रामीण क्षेत्र में पोषण संबंधी जागरूकता, शिक्षा और व्यवहार परिवर्तन को बढ़ावा देने के उद्देश्यों के साथ परिकल्पित किया गया है। जिसमें कृषि महिलाओं और स्कूली बच्चों को शामिल किया गया। कुपोषण को दूर करने के लिए स्थानीय नुस्खों के माध्यम से पारंपरिक ज्ञान का दोहन, घरेलू कृषि के माध्यम से पोषण संवेदनशील कृषि को लागू करना और पोषक उद्यान की खेती। प्रथम चरण में कृषक परिवारों की सामाजिक-आर्थिक रूपरेखा, कृषक परिवारों की पोषण स्थिति, खाद्य उपभोग पद्धति, खाद्य क्रय पद्धति, लगातार तीन दिनों तक आहार संबंधी सूचना एकत्र करने के लिए एक अर्ध-संरचित प्रश्नावली विकसित की गई, दूसरे चरण में चार जिले नामतः पुरी, खोरदा, कटक, जगतसिंहपुर का चयन किया गया, सभी जिलों से सात प्रखंडों से गांवों का चयन किया गया। चयनित प्रखंडों से दस गांव कुंजर, महरा, गदासनपुट, नुआगांव, सांकिलो, तेंतालपुर, कंजिया, श्रीबंनतपुर, चित्रा, सगड़ा को अनुप्रयुक्त अनुसंधान करने के लिए चिन्हित किया गया। चिन्हित गांवों की जनसंख्या विशेषताएँ, शिक्षा सुविधाएँ, स्वास्थ्य सुविधाएँ, पशुपालन सुविधाएँ, पेयजल व्यवस्था, जल निकासी व्यवस्था, संचार सुविधाएँ, परिवहन सुविधाएँ एकत्र की गईं।

भारत में मात्स्यिकी क्षेत्र भारतीय अर्थव्यवस्था में एक महत्वपूर्ण भूमिका निभाता है। मत्स्य पालन में कटाई के बाद की गतिविधि में

महिलाओं का वर्चस्व है, जैसा कि सफाई, व्यापार, प्रसंस्करण और मछली पालन की उनकी भूमिकाओं से स्पष्ट है। मछली प्रसंस्करण में मछली की कटाई से लेकर उपभोक्ता तक पहुंचने तक की सभी गतिविधियाँ में महिलाएं शामिल हैं। मछली की बिक्री और प्रसंस्करण बहुत थकाऊ है और इसके लिए लगातार बैठने या झुकने की मुद्रा की आवश्यकता होती है। मछुआरे महिलाओं को उत्पादन, तकनीकी, आर्थिक, सामाजिक, बुनियादी ढांचे, विपणन आदि जैसे विभिन्न पहलुओं में मत्स्य पालन क्षेत्र में बाधाओं का सामना करना पड़ता है। प्रमुख बाधाओं का सामना जैसे जल स्रोत की कमी, प्रौद्योगिकी की उच्च लागत, ऋण प्राप्त करने की लंबी और बोझिल प्रक्रिया, अवैध शिकार, लाभार्थियों को जानकारी, विशेष बाजार की कमी आदि। कृषि मशीनीकरण घटक के तहत, चयनित फसल पैटर्न (चावल + दाल + सब्जियां) में महिला किसानों के श्रम की पहचान की गई थी। बॉर्ग स्केल (रेटिंग 1-10) का उपयोग करके चयनित फसल स्वरूप में कृषि महिलाओं द्वारा परिश्रम की कथित दर से पता चला है कि 95% से अधिक की परिश्रम सीमा 6-9 थी, जो गतिविधियों में कड़ी मेहनत का संकेत देती है। यह पता लगाया जा सकता है कि चावल की खेती के दौरान निराई के लिए कोनोवीडर और सूखी भूमि वीडर का उपयोग करने से समय में 69 प्रतिशत की बचत होती है। इसी तरह, बीज उपचार ड्रम और मंडवा वीडर का उपयोग करके बीज उपचार और निराई के लिए समय में 68% की बचत और उर्वरक आवेदन के लिए उर्वरक प्रसारक का उपयोग करके समय में 54% की बचत देखी गई।

ICAR-CIWA AICRP केंद्र, PAU लुधियाना ने गैर-बुना और बुने हुए धान पुआल गीली घास मैट विकसित किए जो फलों के बागों और गमलों में फैले हुए थे। खरपतवार की वृद्धि मासिक रूप से देखी गई और व्यवहार में अन्य उपचारों के साथ तुलना की गई। भौतिक गुणों से पता चला कि इसमें 53.93% जल धारण क्षमता थी जबकि गैर-बुने हुए गीली घास की कटाई में 89.03% थी। एक वर्ष की अवधि के बाद मिट्टी की संरचना की जाँच की गई। यह देखा गया कि विभिन्न उपचारों के उपयोग से पीएच को 8.5 से घटाकर 8.0 हो गया। मिट्टी के सूक्ष्म पोषक तत्वों के संबंध में, इन उपचारों के उपयोग से जस्ता, तांबा और मैंगनीज की मात्रा में वृद्धि हुई है। ICAR-CIWA AICRP केंद्र, VNMKV, परभणी द्वारा विकसित दो तकनीकों यानी फिंगर गार्ड्स (नखलिया) और खुदाई उपकरण (उकेरी) का परीक्षण और सत्यापन किया गया। सब्जियों की कटाई के लिए बेहतर रिंग कटर का उन्नयन किया गया और पंतनगर, हैदराबाद, पालमपुर, उदयपुर और हिसार में AICRP केंद्रों को प्रदान किया गया। VNMKV, परभणी द्वारा चयनित खाद्य प्रसंस्करण इकाइयों के श्रमिकों को एक लहसुन छीलने की मशीन और एक आवला डी-सीडिंग मशीन भी तैयार की गई थी।

मानव संसाधन विकास के तहत संस्थान द्वारा भारत के अन्य प्रतिष्ठित संस्थानों के सहयोग से कुल 20 विचार-गोष्ठी और लिंग

परिप्रेक्ष्य में विविध विषयों पर वार्ता आयोजित की गई। वर्ष के दौरान 45 से अधिक राष्ट्रीय और अंतर्राष्ट्रीय विचार-गोष्ठी में वैज्ञानिक और तकनीकी कर्मचारियों की भागीदारी ने भी उनके ज्ञान को समृद्ध किया। संस्थान द्वारा 27 प्रशिक्षण कार्यक्रम आयोजित किए गए। विकसित प्रौद्योगिकियों को प्रदर्शित करने और लोकप्रिय बनाने के लिए संस्थान ने देश भर में विभिन्न प्रदर्शनियों में भाग लिया। MGMT कार्यक्रम के तहत वैज्ञानिक और तकनीकी कर्मचारियों की चार टीमों का गठन किया गया था, जिसमें प्रत्येक टीम ने 3-4 गांवों को गोद लिया और बागवानी, पशुपालन, मत्स्य पालन, कृषि मशीनरी और गृह विज्ञान जैसे विविध क्षेत्र में तकनीकें प्रदान की गईं। विभिन्न कार्यक्रमों में कुल 1262 महिला किसानों ने भाग लिया। वर्ष के दौरान अनुसूचित जाति उप-योजना के तहत 1131 महिला लाभार्थियों को तकनीकी सहयोग और महिला हितैषी प्रौद्योगिकियों से परिचित कराया गया। योजना के तहत महिलाओं के अनुकूल

प्रौद्योगिकी प्रसार, लाभार्थियों की क्षमता निर्माण, इनपुट समर्थन और विभिन्न गांवों में विभिन्न कौशल उन्नयन कार्यक्रमों के माध्यम से कृषि महिलाओं को प्रौद्योगिकी दिखाने पर ध्यान केंद्रित किया गया था। स्वच्छ भारत अभियान को सार्वजनिक स्थानों की सफाई, प्लास्टिक अपशिष्ट प्रबंधन, कार्यालय अभिलेखों को ई-ऑफिस कार्यान्वयन, कचरे से धन का सृजन, रसोई और घरेलू अपशिष्ट सामग्री की ख़ाद, स्वच्छ और बढ़ावा देने के साथ प्रौद्योगिकी हस्तांतरण कार्यक्रमों के साथ एकीकृत किया गया था। आवासीय कॉलोनियों के किचन गार्डन में हरित प्रौद्योगिकी, जैविक खेती के तरीकों को अंजाम दिया गया। संस्थान ने अंतर्राष्ट्रीय योग दिवस, महिला किसान दिवस, विश्व खाद्य दिवस, संविधान दिवस और नागरिक कर्तव्य अभियान, कृषि शिक्षा दिवस, कृषि में महिला दिवस, हिंदी पखवाड़ा भी मनाया। संस्थान ने वर्ष 2021 के दौरान 28 शोध पत्र, 15 लोकप्रिय लेख और 8 तकनीकी बुलेटिन प्रकाशित किए हैं।





EXECUTIVE SUMMARY

ICAR-Central Institute for Women in Agriculture, Bhubaneswar conducted various research and extension based activities through in-house, inter-institutional, network or collaborative and coordinated modes. During 2021, the salient achievements in research, extension and technology transfer activities are summarised.

To determine participation and contribution of women in agriculture and allied sectors using various sources of information viz. Census, NSS 68th round survey and Time Use Study (TUS) 2019 were considered. The data has been analysed and summarized in the technical bulletin entitled 'Work participation and women in agriculture in India'. The data has been classified with respect to gender, data sources, different agricultural sectors and state wise information for comprehensive understanding about participation of men and women in agriculture in the country. To quantify contribution of women in crop and livestock sectors recently published data from the TUS 2019 conducted by National Statistical Office (NSO 2020) were extracted for those who participate in agriculture and allied activities. On analysis the most recent information on participation of women and men as of 2019 were obtained. It was observed that about 28.9 percent of men and 13.3 percent of women in India are in crop production sector where as the participation of men and women in livestock sectors are 10.8 and 10.7 percent, respectively. The data revealed that the contribution of men and women in crop production sector is about 73 percent and 27 percent respectively in the country which clearly speaks that women contributes lesser time in crop production sector as compared to men. At the same time, it was seen that women contribute on a much higher side (46%) in livestock sector. In gender database project it was analysed that according to Census 2011, there were 165.5 million male and 97.6 million female who worked as cultivators (CL) and agricultural labourer (AL) in farm sectors out of 362.6 million total workers in India. There is significant decline observed in the percentage share of male cultivators among the total workers especially during last two censuses. Very less percentage share of female cultivators among the total workers were observed during 1971, 1981 and in 2011.

Percentage share of male agricultural labourer among the total workers has increased during the last three-census period whereas for females the percentage share was almost constant. Overall percentage share of workers in non-farm activities has increased significantly over time.

On-going livestock schemes and their analysis report revealed that 5% of the approved outlay (11 crores out of 190 crores) was utilized through a scheme Integrated development of small ruminants. About thirteen central govt. schemes in Dept. Animal Husbandry and Dairying (2020-21) with budgetary allocation of Rs. 3007.89 crore were evaluated which revealed no specific scheme and earmarked funds for women empowerment. The achievements (2018-21) of the major programme *i.e.* National livestock mission (NLM) meant for women empowerment showed that 32,981 beneficiaries have been assisted under entrepreneurship development and employment generation (EDEG), 3.68 lakh beneficiaries were funded in rural backyard poultry development., 35.64 lakh animal insurance undertaken, 3.0 lakh goat and 9.80 lakh pigs were given health support, 41 state poultry /sheep/ goat/ piggery breeding farms were supported etc. without report of any specific data related to women beneficiaries. NLM-Sub scheme, EDEG aimed at improvement in livestock production system and capacity building of stakeholders. However, no separate fund for women beneficiaries was allocated in these schemes and it was advocated that efforts could be made to cover 30% budget .

Under livelihood analysis of farm women, gender needs and constraints were identified in Jaguleipadar village of Kanas block of Puri to finalize technological interventions. The village, exists more than 100 years and is situated near the riverbank of Daya and Makara and only 5 km away from Chilika Lake. There are 759 Scheduled Caste households of fisher community and 40 families as landless. The village has 137 hectares of cultivated land covering 85 low, 42 medium and 10 high land out of which paddy is grown in only 100 acres. There are two big ponds for fish cultivation; four tube wells and two rivers for drinking water. They have a Fishery Primary Cooperative in the name of 'Maa Jageswari Prathamika Maschha

Jibi Samabaya Samiti' with 270 members at village level whereas have a Federation at district level. Under women empowerment assessment through watershed programme a methodology was developed by designing the schedule for assessing the gender sensitivity of the resource conservation work executed by watershed team with participation and contribution of women in different AER of India. The newly devised schedule represents the multidimensional aspect of the farm women viz. livelihood, income, drudgery and technological empowerment. The household data form 9 watersheds from different AER of India was collected. The data analysis indicates that the watershed programme was executed in an area of 4636 ha in 35 villages spread over in 9 agro ecological regions of India with culturally diverse human resource. Through this project, an assessment of 88 Self Help Group (SHG) working in different watersheds is being done for role of women and SHG in watershed sustainability and women livelihood security for crop and non-crop based activities. In dairy project it was observed that although 5 decades have passed since Operation flood still 60% of total milk produced in India is poured in unorganised sector. Institutional participation of women farmers needs to be emphasised more than their household participation to make women financially and socially independent. Women cooperatives facilitate women to improve their skills and knowledge through several extension activities, facilitate them in terms of milk marketing and show them the realm of business ecosystem. Dairy farming of Odisha needs to support social and financial security of women through various microenterprises like Gujarat in coming future. After a pilot study it was found that there are 8 milk unions in Odisha and Cuttack milk union (462) has maximum WDCS and Ganjam has minimum (20) WDCS. Within Cuttack milk union Cuttack district (212) has highest WDCS. Within this district Mahanga (39) and Niali (30) has maximum WDCS. In Ganjam milk union Ganjam district (10) has minimal WDCS and Chikiti (2) and Kukudakhadi (2) blocks have highest WDCS. Questionnaire was developed and validity was checked by different experts and then reliability was checked in farmer's field.

A front line demonstration was conducted with women SHG group members to demonstrate the hygienic way of drying fishes. They were also trained

in the preparation of silage from fish waste so that they can utilize the by-product from processing of fish to improve their income. The two SC women SHG groups in Kanamana village have been facilitated with two Solar cabinet dryers and two aluminium foil sealing machines for starting their enterprise on value added fish products. The women SHG groups from Kanamana have started selling the fish pickle also under the brand name "Fishlikes". Economic analysis /business plan has been made for small-scale poultry, Goatery and value added fish products enterprises. Three Poultry germplasms, Vanaraja, RIR, and Kadaknath have been identified and a business model for undertaking small scale poultry enterprise development has been worked out. Five farm women have been identified for undertaking small scale poultry in entrepreneurship mode and their capacity building programme on improved poultry farming was conducted. Two skilled-based capacity building programme on Improved Management Practices in Poultry Farming has been conducted.

Under drudgery assessment of women in different AER of India, It was observed that there are certain districts irrespective of states that amalgamate to form clusters of high, medium and low level of FPA. In a nutshell it can be noted that clusters with high FPA (>2.03 kW/ha;) belong to portions of agriculturally favourable Agro Ecological Zones (AERs) such as 4,5,6,7,8,9,13,15,19 (*Indo-Gangetic plains Bengal basin, Kathiawar peninsula, Deccan plateau, Narmada, Tapi, Mahanadi, Godavari, Krishna river deltas*). These cluster either have a perennial flowing river through it or are situated on a river delta with good quality alluvial, black, tarai, clayey soil etc. They also have a low elevation rise, thus comprising of vast plains. All these factors lead to farmer taking multiple crops during a year, hence, utilising mechanical means for timely farm operation. Also operation of heavy farm machinery like self-propelled combines, tractors and tractor-operated implements is facilitated by plain regions. On the other hand, the clusters with low FPA (<1.00 kW/ha;) belong to portions of agriculturally unfavourable Agro Ecological Zones (AERs) such as 2, 7, 10, 11, 14, 16, 17, 18 (*Western & Eastern Himalays; Malwa plateau, Eastern plateau, Bundelkhand plateau; Western plains, Assam plains, North Bengal plains; north-east hills*). These all factors cause low net sown area and lower cropping intensity. Hence, the FPA in



these clusters is low. The clusters with medium FPA (1.00 – 2.03 kW/ha) fall in portions of Agro Ecological Zones (AERs) that have a mixture of the favourable and unfavourable features, resulting in moderate agricultural needs. Thus these regions are limited to medium level of FPA.

Under Gender sensitive Agri Nutrition project a survey was carried out to understand the change in knowledge level of farm women about nutritional aspects due to technological interventions. The result depicts that through technological interventions of horticultural crops, 57.50% farm women are now very well aware (> 60%) about nutrition as compare to pre-project data (17.50%). Whereas, only 15% farm women are somewhat aware (<30%) about the nutritional aspects as compare to pre-project data (50.00%). In the first year of the project, during benchmark survey it was observed that none of the families were involved in cultivation of tuber crops. Through distribution of quality planting material and capacity building about various aspects the preferences of the horticulture crops perceived by farm women was changed in the two villages. The women farmers now preferred to cultivate Colocasia followed by cowpea followed by bitter gourd, okra and ivy gourd.

The effect of sunlight distribution pattern on growth of vegetable crops planted on Prototype-I of IVNFS was studied. The incident of sunlight distribution pattern was studied in two orientations *viz.*, East-West and North-South. The distribution of sunlight falling on the vegetable troughs of IVNFS was recorded in a matrix of rows and columns with the help of lux meter (Range: 0-50000 lux; Power supply: 9V DC battery; Current: 2mA). In East-West orientation, as the sun traverses the sky, one side is always subjected to shadow from the other side. While in North-South orientation, the sunlight is distributed all over the structure throughout the day. Thus, one side gets the morning sunlight from east and the other side gets afternoon sunlight from west. As the vegetables planted are sun-loving, this distribution pattern of sunlight was observed to be beneficial. Hence, it was concluded that the IVNFS structure will be kept in North-South orientation.

Under Nutri-smart village assessment the project was designed with the objectives for promoting nutritional awareness, education and behavioural change in rural area involving farm women and school children,

harnessing traditional knowledge through local recipe to overcome malnutrition, implementing nutrition sensitive agriculture through homestead agriculture and nutri-garden. In the first phase a semi structured questionnaire was developed for collecting socio-economic profile of the farm families, nutritional status, food consumption pattern, food purchasing pattern, dietary information for three consecutive days. In the second phase four districts namely Puri, Khorda, Cuttack, Jagatsingpur were selected, from all the districts, Seven Blocks were randomly selected. From the selected Blocks ten villages *i.e.* Kunjar, Mahura, Gadasanput, Nuagaon, Sankilo, Tentapur, Kanjia, Sribantapur, Chitra, Sagada were identified to carry out the applied research. The population characteristics, education facilities, health facilities, animal husbandry facilities, drinking water provision, drainage system, communication facilities, transportation facilities of the identified villages were collected.

Drudgery reduction assessment in fisheries indicates that the fisheries sector in India plays a vital role in Indian economy. A post harvest activity in fisheries is dominated by women as evidenced by their roles of cleaning, trading, processing and fish farming. Fish processing includes all activities from fish harvest to till it reaches the consumer. Fish vending and processing is very tedious and requires constant squatting or bending posture. Women fisher face constraints in fisheries sector in various aspects like production, technical, economic, social, infrastructure, marketing etc. The major constraints face were lack of water source, high cost of technology, lengthy and cumbersome procedure of getting credit, poaching, inadequate information to the beneficiaries, lack of special market etc. Under the farm mechanization component, the drudgery of women farmers in the selected cropping pattern (Rice+ pulses+ vegetables) was identified. The perceived rate of exertion by farm women in the selected cropping pattern by using Borg scale (Rating 1-10) revealed that more than 95% had exertion range of 6-9 indicated really hard work in case of activities uprooting, thinning, weeding, ridge making, transplanting, harvesting, threshing and winnowing. It can be revealed that during rice cultivation 69% saving in time observed by using conoweeder and dry land weeder for weeding. Similarly, 68% saving in time was observed by using seed treatment drum and mandwa weeder and 54% saving in time observed by using fertilizer broadcaster for fertilizer application.

ICAR-CIWA, AICRP Centre, PAU, Ludhiana developed non-woven and woven paddy straw mulch mats which were spread in the fruit orchards and pots. Experiments were conducted in collaboration with College of Horticulture and Forestry, PAU, Ludhiana. The weed growth was observed monthly and was compared with the other treatments in practice. The physical properties revealed that it had 53.93% water holding capacity while non-woven mulch mat had 89.03%. The soil composition was checked after a period of one year. It was observed that the pH reduced to 8.0 from 8.5 with the use of different treatments. As regards the micronutrients of the soil, the amount of zinc (Zn), copper (Cu) and manganese (Mn) increased with the use of these treatments. Two technologies i.e., finger guards (*Nakhalya*) and digging tool (*Ukeri*) developed by ICAR-CIWA, AICRP Centre, VNMKV, Parbhani were tested and validated. Improved Ring cutters for vegetable harvesting were upscaled and provided to AICRP centers at Pantnagar, Hyderabad, Palampur, Udaipur and Hisar. A garlic peeling machine and an *amla* de-seeding machine were fabricated and provided to the workers of selected food processing units by ICAR-CIWA, AICRP Centre, VNMKV, Parbhani.

Under the Human Resource Development, a total of 20 seminars, webinars and talks on diverse topics in gender perspective were organised by the institute in collaboration with other reputed institutes of India. Participation of scientist and technical staff in more than 45 national and international webinars during the year also enriched their knowledge. Twenty-

seven training programmes were organized by the institute. Institute participated in various exhibitions across the country to demonstrate and popularize the technologies developed. Under MGMG programme four teams comprising of scientific and technical staff were formed with each team adopting 3-4 villages and a total of 12 villages were adopted and provided technologies in areas like Horticulture, Animal Husbandry, Fisheries, Farm Machinery and Power and Home Science. A total of 1262 women farmers participated in different programmes. Under the Scheduled Castes Sub-Plan during the year and 1131 women beneficiaries received inputs and introduced to women friendly technologies. Under the Plan the focus was on women friendly technology dissemination, capacity building of beneficiaries, input support and technology showcasing to farm women through various interfaces and skill upgradation programmes in different villages.

The Swachha Bharat Abhiyan was integrated with technology transfer programmes with cleaning of public places, plastic waste management, stock taking on digitization of office records/ e-office implementation, generation of wealth from waste, composting of kitchen and home waste materials, promoting clean and green technologies, organic farming practices in kitchen gardens of residential colonies were carried out. Institute also celebrated International Day of Yoga, Mahila Kisan Diwas, World Food Day, Constitution Day and Citizens' Duties Campaign, Agricultural Education Day, Women in Agriculture Day, Hindi Pakhwada. The Institute has published 28 research papers, 15 popular articles and 8 technical bulletins during the year 2021.



1 INTRODUCTION

1.1 Historical Perspective

ICAR-Central Institute for Women in Agriculture has been playing a pivotal role towards engendering agricultural research and development. Since its inception as National Research Centre for Women in Agriculture (NRCWA) in April 1996 at Bhubaneswar (Odisha) under Indian Council of Agricultural Research, New Delhi as per recommendation of 8th Five Year Plan (1992-97), the institute has been undertaking research on various issues of women's role and participation and the emerging opportunities in agriculture. Keeping in view the role of women in integration of farm and household activities, All India Coordinated Research Project on Home Science (AICRP on HS) started in the 6th Five Year Plan (1980-85) was merged with NRCWA in the year 2007. The institute was upgraded to Directorate of Research for Women in Agriculture (DRWA) in 2009 and to ICAR-Central Institute for Women in Agriculture (ICAR-CIWA) in the year 2014 under 12th Five Year Plan (2012-17). The AICRP (HS) has now been renamed as AICRP (Women in Agriculture). Apart from engaging other ICAR institutions to strengthen gender perspective in agricultural research programmes, the institute acts as a resource agency for many government departments for gender mainstreaming through training, consultancy and advocacy.

1.2 Research area

ICAR-CIWA emphasizes upon participatory action research in different technology based thematic areas involving farm women to test suitability of farm technologies and further refinement to make them women friendly. The Institute also facilitate research and development institutions to work on gender perspectives in their research and development programmes. The research projects implemented by the research institution yielded important gender related information, knowledge, models and practices that can be used for identifying interventions and developing programmes for different stakeholders including farm women. It serves as a unique Institute to address issues related to women in agriculture in

the areas of integrated farming system, integrated pest management, drudgery, livestock, fisheries, extension methodologies and entrepreneurship development. Given the critical linkage between women and agricultural growth, the ICAR vision of achieving adequate production of nutritious and safe food for feeding its ever growing population would be possible only if gender issues in agriculture is addressed along with strengthening the attitude, interest, knowledge base and capability of women to manage the changes in agriculture.

1.3 Ongoing activities

Empowerment of farm women in agriculture is one of the key themes in the mandate of the Institute right from its inception. Since women in agriculture is an emerging area of research, capacity building of all the stakeholders were organized through various workshops, trainings and sensitization programmes for development functionaries, research scientists/managers, teachers and KVKs scientists/ SMSs who are directly or indirectly associated with farm women. The Institute is privileged to have very eminent professionals in the Research Advisory Committee. They provide guidance and encourage the scientists to carry out need based research programmes according to the mandate. The Institute Management Committee (IMC) is constituted and mandated by the ICAR, which supervises the functioning of the Institute. Besides these, there are a number of internal committees and cells for running an efficient and decentralized management of the Institute.

1.4 Infrastructure facilities

The Institute has a well-developed Agricultural Knowledge Management Unit with facilities of internet and latest data analysis software like SAS and SPSS. The Institute is having round the clock broad band/ optical fibre cable based internet connectivity over Local Area Network. Institute video conferencing system has been installed at Director's Committee Room having capacity of about 30 Persons. The

Institute has a conference hall with seating capacity of 150 and two committee rooms with seating capacity of 40 each in addition to a well-equipped training hall with the provision of LCD and other audio-visual aids. The Institute has a research farm of 32 acres including 15 acres area under different horticultural and field crops as well as livestock and fisheries. The Institute has well developed demonstration units for various agro-enterprises including horticulture based cropping models, vermicomposting unit, integrated fish-poultry-duck-unit and ornamental fish unit. The Institute Technology Management Committee (ITMC) chaired by the Director of the Institution, is the decision making body for IP related matters/ progress/ concerns. Institute Technology Management Unit (ITMU) works as secretariat for ITMC at ICAR-CIWA. Well-equipped laboratories in the field of Agronomy, Entomology, Ergonomics, post-harvest technology, Horticulture, seed technology, Animal science, Fisheries and

gender data centre are available in the Institute. The Institute has over 2000 books/ research journals/ CAB CD ROM database, Agricola database in the field of gender and women studies to facilitate researchers and students. There are 13 residential quarters in the Institute campus with Type-VI (1), Type-V (2), Type-IV (2), Type-III (6) & Type-II (2) quarters. The trainees' hostel can accommodate 25 participants for various training programmes. The women farmers' hostel can accommodate 28 women participants for various training programmes. The technology block has an exhibition cum meeting room with a seating capacity of approximately 300 persons, while the training cum conference hall can accommodate approximately 100 persons.

The information pertaining to Staff, budget and expenditure and resource generation of ICAR-CIWA for the year 2021 is presented in graphs. As on December 2021 the details of the staff position is as follows:

Table 1.1 Details of cadre strength as on 31.12.2021 (ICAR-CIWA)

Post	Sanctioned Post	In Position
Research management position	3	-
Scientific	18	17
Technical Posts	13	12
Administrative	11	7
Skilled Support Staff	1	1
Total	46	37

1.7 Right to Information (RTI)

Transparency was facilitated through *suo moto* disclosures of information made through Institutes website. A total of seven queries under Right to Information Act were replied during the period.

Table 1.2 RTI Report

Category	Total Number of applications received	Number of applications received		Number of cases transferred to other PAs	Decisions where requests/ appeals accepted	Amount of Regn. Fee collected (Rs.)
		Directly from the applicants	Transferred from other PAs			
Request	7	7	0	0	7	110



2

RESEARCH ACHIEVEMENTS

ICAR-CIWA Research Projects

Research Programme 1: Create, characterize, classify and maintain the repository of database to analyse the dynamics and role of women in different sectors of agriculture in different agro-ecological regions

2.1.1 Studies on sectoral contribution of women in agriculture and allied sectors (2020-2023)

Investigators: Anil Kumar, Ananta Sarkar, Tanuja, S. and Neetish Kumar

To determine participation and contribution of women in agriculture and allied sectors using various sources of information viz. Census, NSS 68th round survey and Time Use Study (TUS) 2019 were considered. The main aim of using these data sources are to know how many of women are in different sector of agriculture and what do they do. The data has been analyzed and summarized in the technical bulletin entitled 'Work participation and women in agriculture in India'. The bulletin contains summary of workers, agricultural workers, non-ag workers according to both NSS 68th round survey estimates and Census 2011.

The data has been classified with respect to gender, data sources, different agricultural sectors and state wise information for comprehensive understanding about participation of men and women in agriculture in the country. To quantify contribution of women in crop

and livestock sectors recently published data from the TUS 2019 conducted by National Statistical Office (NSO 2020) were extracted for those who participate in agriculture and allied activities. On analysis the most recent information on participation of women and men as of 2019 were obtained. It was observed that about 28.9 percent of men and 13.3 percent of women in India are in crop production sector where as the participation of men and women in livestock sectors are 10.8 and 10.7 percent, respectively.

The data on daily time use by a person in any activity were considered and time contribution of both men and women in different agricultural activities were also estimated. The data revealed that the contribution of men and women in crop production sector is about 73 percent and 27 percent respectively in the country which clearly speaks that women contributes lesser time in crop production sector as compared to men. At the same time, it was seen that women contribute on a much higher side (46%) in livestock sector. Further, to quantify the contribution of women in different crop, livestock and fisheries enterprises a schedule for household information, module for capturing contribution in crop sector and module for capturing contribution in livestock sector were developed. State wise values for both participation and contribution are summarized and highest/ lowest five states both for participation and contribution are depicted in tables.

Table 2.1 Participation (% of population, age 6+) Crop production

Sl no	State	Male %	Female %
	Highest 10		
1	Nagaland	30.15	32.55
2	Telangana	36.76	28.7
3	Arunanchal Pradesh	35.1	28.34
4	Chhattisgarh	34.29	27.47
5	Maharashtra	39.14	27.22
Ag household in rural area = 55.3 %			

Sl no	State	Male %	Female %
	Lowest 10		
5	Kerala	13.17	5.72
4	Bihar	25.48	4.89
3	West Bengal	27.33	4.27
2	Haryana	21.96	3.07
1	Punjab	20.09	1.78
	India	28.88	13.33
		52.22	24.05

Table 2.2 Participation (% of population, age 6+) Livestock production

Sl no	State	Male %	Female %	Sl no	State	Male %	Female %
	Highest 10				Lowest 10		
1	Himachal Pradesh	20.49	39.28	5	Meghalaya	8.66	2.99
2	Rajasthan	12.86	29.38	4	Assam	5.53	2.74
3	Uttarakhand	13.68	26.27	3	Manipur	1.99	2.55
4	Haryana	15.87	24.49	2	Telangana	7.33	2.24
5	Ladakh	19.27	23.05	1	Goa	0.39	0.11
					India	10.8	10.69
						19.52	19.33
Ag household in rural area = 55.3 %							

Table 2.3 Contribution (% of population, age 6+) Crop production

Sl no	State	Male %	Female %	Sl no	State	Male %	Female %
	Highest 10				Lowest 10		
1	Goa	38.5	61.5	5	Tripura	82.7	17.3
2	Uttarakhand	49.3	50.7	4	Haryana	88.7	11.3
3	Nagaland	55	45	3	West Bengal	88.7	11.3
4	Telangana	57.6	42.4	2	Bihar	88.9	11.1
5	Chhattisgarh	57.7	42.3	1	Punjab	94.8	5.2
					India	72.8	27.2

Table 2.4 Contribution (% of population, age 6+) Livestock production

Sl no	State	Male %	Female %	Sl no	State	Male %	Female %
	Highest 10				Lowest 10		
1	Himachal Pradesh	29.1	70.9	5	Maharashtra	76.4	23.6
2	Rajasthan	33.5	66.5	4	Meghalaya	77.6	22.4
3	Gujarat	39	61	3	Chhattisgarh	78.8	21.2
4	Uttarakhand	39.2	60.8	2	Goa	82.4	17.6
5	Haryana	40.6	59.4	1	Telangana	82.5	17.5
					India	54.2	45.8

2.1.2 Development of Integrated National Information System for Women in Agriculture (DINISWA) (2020-2023)

Investigators: Ananta Sarkar and Neetish Kumar

Agriculture Workers (India): According to Census 2011, there were 165.5 million male and 97.6 million female who worked as cultivators (CL) and agricultural labourer (AL) in farm sectors out of 362.6 million total workers in India. There is significant decline observed in the percentage share of male cultivators among the total workers

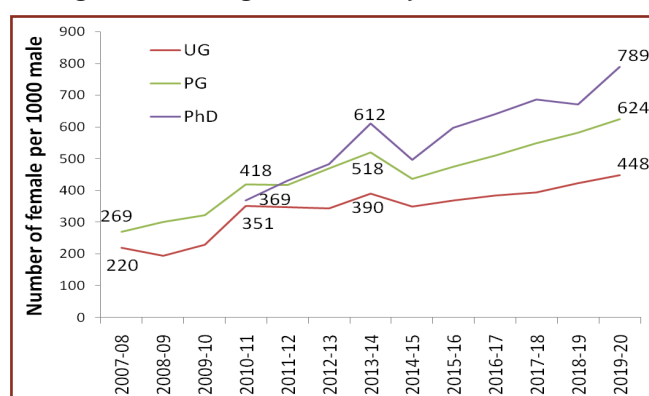
especially during last two census. Very less percentage share of female cultivators among the total workers were observed during 1971, 1981 and in 2011. Percentage share of male agricultural labourer among the total workers has increased during the last three-census period whereas for females the percentage share was almost constant. Overall percentage share of workers in non-farm activities has increased significantly over time. The table gives a clear understanding of actual share of participation of men and women in agriculture during the century in the country.

Table 2.5 Scenario of workers (%) by occupation during 1901-2011 (India)

Year	CL_Male	CL_Female	AL_Male	AL_Female	Ag_Other	Non_Farm	Ag_Total
1901	35.4	15.3	8.2	8.7	4.2	28.3	71.7
1911	34.9	14.9	10.0	10.6	4.5	25.1	74.9
1921	37.2	17.2	8.9	8.5	4.2	24.0	76.0
1931	34.9	10.1	12.4	12.4	4.9	25.2	74.8
1951	36.9	13.2	10.6	9.1	2.4	27.9	72.1
1961	35.2	17.6	9.2	7.5	2.8	27.7	72.3
1971	38.2	5.1	17.6	8.8	2.2	28.1	71.9
1981	31.7	6.1	14.2	8.5	2.1	37.4	62.6
1991	28.5	11.2	15.0	12.4	2.4	30.6	69.4
2001	21.3	10.4	14.3	12.3	3.5	38.3	61.7
2011	17.2	7.5	17.2	12.8	2.4	43.0	57.0

Data source: 1901 to 2011 Census, Govt. of India

Students' enrolment in Agriculture (Female): AISHE data revealed that percentage of female students enrolment have increased from 18 and 21 percent (2007-08) to 31 and 38.4 percent (2019-20) respectively at UG and PG level. At PhD level, the share of female students enrolment in agriculture increased from 27 percent in 2010-11 to 44 percent in 2019-20. During 2007-08 & 2019-20, at all three levels under graduate, post graduate and doctorate, there was increasing trend in the enrolment of female students per 1000 male students in agriculture (except 2014), which indicates a positive trend in gender parity among students in agriculture over years.



Data source: AISHE Reports; <https://aishe.gov.in/aishe/home>

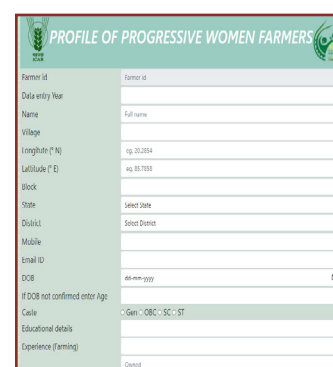
Fig 2.1 Number of female per 1000 male students

Gender Knowledge System in Agriculture (Dashboard): A dashboard has been designed for showcasing state/ district wise participation data under the GKS portal. Data can be searched by selecting year (radio button), state, area and population type (selection boxes) and

gender disaggregated data on cultivators or agricultural labourers or both are shown in table and bar graph format. The output data can also be downloaded as excel file and image file for further use by the user.

**Fig 2.2 District wise participation (number) in agriculture of Bihar using GKS Dashboard**

Database of Progressive Women Farmers: A database of progressive women farmers has been developed under the project to showcase the successful farmwomen using digital platform. The database is made password protected and only authorized agencies are allowed to enter information in the database. On a pilot basis information on 25 farm women already entered in


Fig. 2.3 Online data entry format for progressive women farmers database

the database. The frontend is designed using PHP, JavaScript, Bootstrap, HTML and CSS and the backend is managed by MySQL.

Database of crop diversification and farm women:

The decadal (2010-19) data on number of women farmers and agricultural labourer along with area under different crop, vegetables, fruit crops, livestock and poultry has been compiled from Census (2011), Agriculture Statistics of Odisha, Five decades data book, 2020, Livestock census (2019) and Final Report on mechanization (2019), Economic survey, 2019-20 for all the 30 districts of Odisha and a database has been developed under the project to showcase the involvement of farmwomen in crop diversification. Analysis was extended to disaggregate level using the district level data using SAS 9.3 software. Highest numbers of female cultivators (27-30%) are recorded in tribal, remote districts viz. Koraput (30.7%), Malkangiri (29.6%), Gajapati (29.2%), Kandhamal (28.05%) and Rayagada (26.8%). The coastal and progressive districts are with very few female cultivators (5-10%) with Bhadrak and Jajpur showing the minimum female cultivators (5.7%). It is worth to note that the district with very poor crop diversification is also having least female cultivators (Bhadrak, Balasore, Jagatsinghpur and Puri) and vice-versa (Koraput, Malkangiri, Gajapati, Kandhamal and Rayagada). This decadal data analysis incites to the statement that women plays a key role in crop diversification. The output of the data is published as '*Crop Diversification in Odisha: An analysis of area dynamics with gender perspective*' (Jakhar *et al.* 2021).

2.1.3 Gender Mainstreaming through Govt. Schemes in Animal Husbandry sector for Empowering Farm Women (2021-24)

Investigators: *B. Sahoo and Anil Kumar*

Livestock production activities are largely in the hands of women. Increasing demand for livestock products creates opportunities for their empowerment. Appropriate policy would facilitate availing credit, insurance and other inputs and marketing services enhancing the productivity. Livestock extension services, methodology and set-up established are not able to cater to the needs of the livestock sector. Only 5.1% of the farm households were able to access any information on animal husbandry against 40.4% for crop farming.

Ongoing schemes and their analysis report revealed that 5% of the approved outlay (11 out of 190 crore) was utilized through a scheme Integrated development of small ruminants. Absence of effective centrally schemes have hampered the growth of this sector and also failed in providing much need assistance and livelihood opportunities to the vulnerable section of the community. Some schemes were also sanctioned but largely non-starters. Livestock extension and delivery services outlay of Rs. 15 crore and no expenditure has been incurred showing the negligence of the livestock extension. The economic policies helped to enhance and sustain agricultural growth but have not been able to address adequately economic and social inequalities including gender inequalities in the Indian rural society.

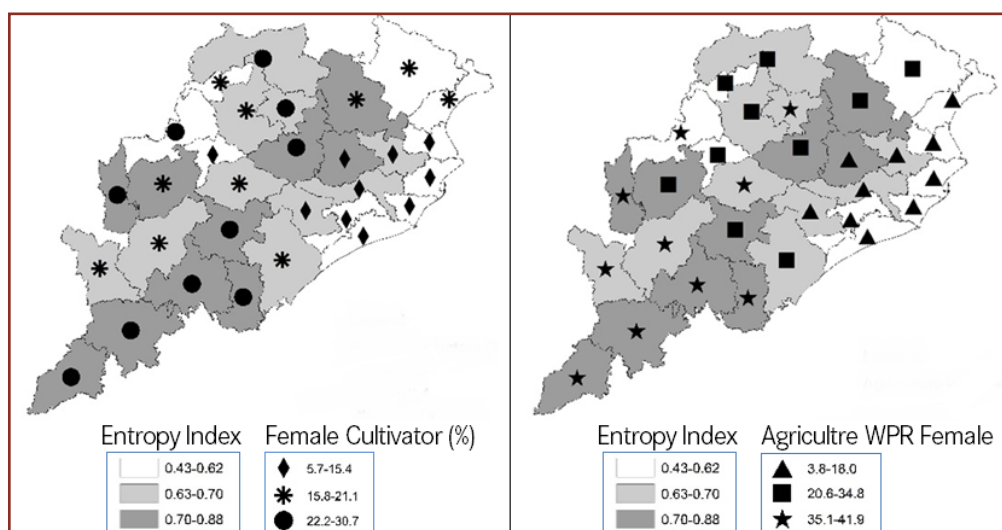
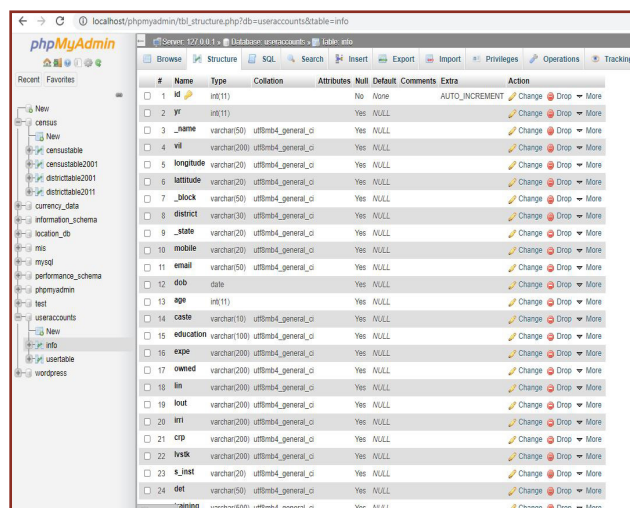


Fig.2.4 : Odisha district map showing crop diversification (EI) with a) female cultivators (%) and b) AWPR-Female

Keeping in view the above facts, the study was undertaken to enhance women's access to livestock assets in order to enable them to avail benefits of various livestock development programmes and policies. The objectives of the study was to evaluate government programmes and schemes in Animal husbandry sector in gender perspectives along with constraint analysis, gender mainstreaming of women oriented schemes and establishment of linkages through need based livestock interventions for livelihood opportunity. About thirteen central govt. schemes in Dept. Animal Husbandry and Dairying (2020-21) with budgetary allocation of Rs. 3007.89 crore were evaluated which revealed no specific scheme and earmarked specific funds being designated for women empowerment. It was only advisory to utilize 30% of allocated fund towards women beneficiaries. The achievements (2018-21) of the major programme *i.e.* National livestock mission (NLM) meant for women empowerment showed that 32,981 beneficiaries have been assisted under entrepreneurship development and employment generation (EDEG), 3.68 lakh beneficiaries were funded in rural backyard poultry development., 35.64 lakh animal insurance undertaken, 3.0 lakh goat and 9.80 lakh pigs were given health support, 41 state poultry / sheep/ goat/ piggery breeding farms were supported etc. without report of any specific data related to women beneficiaries. NLM-Sub scheme, Entrepreneurship Development & Employment Generation (EDEG) aimed at improvement in livestock production system and capacity building of stakeholders. However, no separate funds for women beneficiaries was allocated in these schemes and it was advocated that efforts could be made to cover 30% budget if possible. Establishment of linkage between stakeholders and institutions for wider outreach to farmers especially farm women need to be emphasized on Providing Kisan Credit Card facility. However, Dairy entrepreneurship development scheme is being prioritized to be implemented in cluster mode covering dairy farmers especially women in SHGs/ Cooperatives/Producer companies

Relaxation in availing policy benefits for women livestock keepers, provision of additional incentives in terms of subsidies on interest rates and insurance premium, special programmes for developing women entrepreneurship in livestock value chain are not



#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	yr	int(11)			Yes	NULL			Change Drop More
3	name	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
4	vit	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
5	longitude	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
6	latitude	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
7	block	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
8	district	varchar(30)	utf8mb4_general_ci		Yes	NULL			Change Drop More
9	state	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
10	mobile	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
11	email	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
12	dob	date			Yes	NULL			Change Drop More
13	age	int(11)			Yes	NULL			Change Drop More
14	caste	varchar(10)	utf8mb4_general_ci		Yes	NULL			Change Drop More
15	education	varchar(100)	utf8mb4_general_ci		Yes	NULL			Change Drop More
16	expa	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
17	owned	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
18	in	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
19	lost	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
20	ill	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
21	crp	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
22	hvsk	varchar(200)	utf8mb4_general_ci		Yes	NULL			Change Drop More
23	s_hist	varchar(20)	utf8mb4_general_ci		Yes	NULL			Change Drop More
24	det	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
	training	varchar(500)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Fig. 2.5 Backend database structure

prioritized which may enhance women's skill in various aspects of animal husbandry. To boost animal productivity and income of the women there is a need for appropriation of technologies that reduce drudgery to women and improve animal health and nutrition. The study of a total of 12 schemes (2021-22) on Animal husbandry sector under Govt. of Odisha revealed that emphasis is given on support to women and WSHGs in Broiler Farming (500 Bird Capacity), Broiler Farming (1000 Bird Capacity) in deep litter system, azolla cultivation, fodder cultivation, goat farming and establishing mini poultry feed mill etc. Evaluation of schemes showed that there is a need to correct gender bias in veterinary education, research and service delivery systems to enhance the effectiveness of women-oriented livestock development programmes.

Research Programme 2: Standardization of Techniques for Livelihood Analysis and Women Empowerment in different Agro-Ecological Zones

2.1.4 Integrating Gender Dimensions for Improvement of Livelihood through Empowerment (2020-23)

Investigators: Sabita Mishra and Anil Kumar

Analysed the livelihood of farm women, identified gender needs and constraints in Jaguleipadar village under Kanas block of Puri to finalize technological interventions. The village, Jaguleipadar exists before more than 100 years and is situated near the river bank of Daya and Makara and only 5km away from Chillika

Lake. There are 759 Scheduled Caste households of fisher community and 40 families as landless. The village has 137 hectares of cultivated land covering 85 low, 42 medium and 10 high land, out of which paddy is grown in only 100 acres. There are two big ponds for fish cultivation, four tube wells and two rivers for drinking water. They have a Fishery Primary Cooperative in the name of 'Maa Jageswari Prathamika Maschha Jibi Samabaya Samiti' with 270 members at village level whereas have a Federation at district level.

Livelihood Management: All the farm families follow the boro rice + fish cropping system. Since the area is water logged throughout the year, the rice is grown only in Rabi season. The rice production is high there because of the fertile soil brought from river during flood. In rice cultivation, the women are mostly involved in transplanting, harvesting, seed storage, drying and parboiling activities. In fish cultivation, the women sale small quantity of fresh fish in nearby villages and sometimes prepare dry fish which sale to the local vendors. The women of the village take care of the domestic animals. During Focused Group Discussion (FGD), the following perceived issues were identified by the farmers / farm women.

Seasonal Employment: The villagers cannot get employment throughout the year. They have no scope for entry into Chilka during breeding time (April to June). In this particular period they face financial crisis and compelled to take loan from the Society / Lenders with more interest rate.

Water Logging: Due to heavy water logging as well as flood condition, the villagers are unable to cultivate rice during Kharif season. Only they produce Rabi rice.

Poverty: Almost 90% of the households are resource poor who belongs to BPL list. Fishing being one of

the major source of income for the villagers, they are not able to afford costly equipments like boat, pump, fishing net, etc.

Reduction of Fish Production: Gradually the connecting point of the sea and Chilika Lake became narrow and also the area of Chilika is narrowed down due to the soil erosion which minimized the availability of fish. Within last 35-40 years, Chilika lake has dried upto 12km. Sometimes also, the outsiders make illegal net boundary for prawn culture which minimizes fishing area for the villagers.

Natural Disaster: Every alternate year they face the natural disasters like: flood and cyclone which damages their backbone to again stand.

Identified Strategies for Livelihood Improvement of Farm Women:

- Paddy cultivation with suitable improved paddy varieties for water logging condition, seed treatment, line transplanting and Integrated Pest Management (IPM) in paddy and introduction of drudgery reducing improved small tools and implements.
- Improved duckery rearing as village has a lot of water bodies and backyard poultry rearing in entrepreneurship mode.
- Development of nutrition garden with improved vegetable cultivation.

Interventions:

Sprayer: Fifty numbers of 12 volt battery operated sprayer with the capacity of 18 liters were provided to 50 WSHGs covering 500 farm women. Before intervention, only 2/3 manual sprayers were available in the village, which was not sufficient to solve the problem of spraying. The women were using bucket



Farm women with different technological interventions

and broom for pesticide application resulting uneven spray of pesticide, less effective on crop and more drudgery in handling. Now, the farm women use the spray machine for pest control in rice, vegetables and pre-emergency herbicides application in rice crop which helps in uniform application of pesticides and more effective. The WSHGs have developed a custom-hiring centre of sprayer for easy access and the villagers get it timely on hire basis with a minimal charge of Rs.10 per day. It is found to be drudgery reducing and cost effective. In addition, demonstrated and introduced the tools (secateurs, sickle, khurpa, garden hoe, cultivator, hand hoe, trowel, trench hoe) among 100 farm women to enhance their work efficiency by reducing drudgery.

Improved Duck Breed: Having a lot of water bodies in the village, 100 numbers of Khaki Campbell duck breed was introduced through skill training and demonstration among 10 scheduled caste fisher women. One-day chicks along with feeder pots, stand, drinkers, etc. were provided as critical inputs. Proper vaccination arrangement has been made involving local Livestock Inspector.

Vegetable Cultivation and Nutrition Garden: To enhance the nutritional security, development of nutrition garden with improved vegetable seeds was introduced. As critical input, the improved seed kits (cucumber, bottle gourd, ridge gourd, ladies finger, bean, palak, brinjal, chilli and radish) purchased from ICAR-IVRI was demonstrated among 50 farm women from which they got a sizable profit after family consumption.

2.1.5 Women empowerment through watershed development programmes in different agro-ecological regions of India (2021-24) (ICAR-CIWA-IISWC, Dehradun collaborative Project)

Investigators: *Praveen Jakhar and Sabita Mishra*

Participation of women in groups plays a vital role in natural resource management and sustainable livelihood development. To empower women through agricultural incomes and to enhance their socio-economic prominence for better livelihoods through watershed management women based activities are undertaken individually as well as Self-Help Groups

(SHGs) based. Involving women in identification of field problems as well as women is of utmost importance during watershed project planning, preparation of action plan and its implementation. To analyse all these aspects in different agro ecological region of India the mentioned project is undertaken in collaboration with ICAR-IISWC, Dehradun to assess the women empowerment through watershed development project in different AER of India.

Methodology developed: A methodology was developed through designing different schedules and checklists for assessing the gender sensitivity of the resource conservation works executed by watershed projects having participation and contribution of women in different agro-ecological regions of India. The methodology encompasses diverse dimensions of women empowerment in watershed programmes. The newly devised approach represents study of assessment of farm women livelihood development, income enhancement, drudgery reduction and technological skill enhancement. The collection of basic household data from 9 watersheds from different AER of India was compiled and analysed using the new methodology.

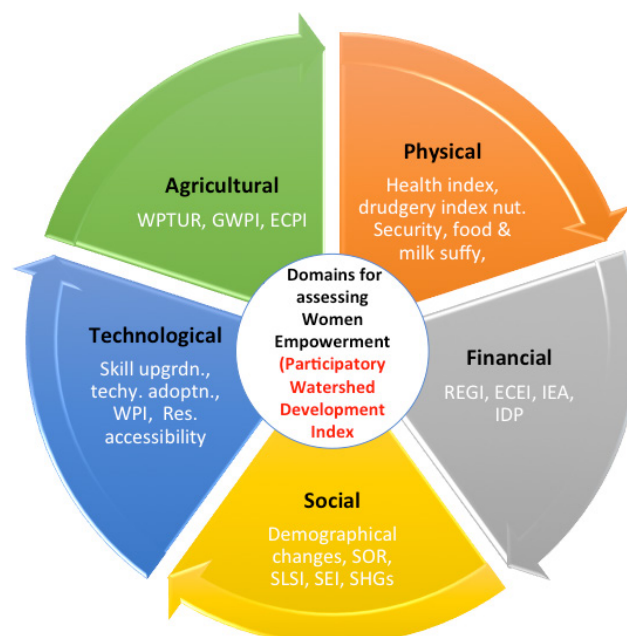


Fig. 2.6 Framework of Women empowerment

Inferences: The data analysis indicates that the watershed programme was executed in an area of 4636 ha in 35 villages spread over in 9 agro ecological regions of India with culturally diverse human resource with sex ratio of 1.05. Through this project, an assessment

of 88 Self Help Group (SHG) working in different watersheds is being assessed for role of women and SHG in watershed sustainability and women livelihood

security for crop and non-crop based activities. To get the holistic idea of women in watershed, the basic unit of data collection is taken as women of the household.

Table 2.6 Watersheds with representative AER and their baseline information

AER	Watershed with representative AER	No. of villages	Treated area (ha)	Total HH (no.)	ALH (ha)	Female (no.)	Male (no.)	Women SHG (no.)
4	Kajiana- Chandigarh Northern Plain (Upper Gangetic) semiarid to sub humid eco-region	4	482.2	116	0.95	269	277	6
5	Dhoti- Kota Northern Plain (Rajasthan Upland and Gujarat plains) hot semiarid eco-region	4	660.0	200	2.81	855	913	2
6	Jalalpur- Agra Northern Plain (Middle Gangetic Plain) hot semiarid to sub humid eco-region	3	639.5	292	1.35	667	619	3
7	Vejal-Rampur- Vasad Deccan Plateau (Malwa Plateau, Gujarat plains and Kathiawar peninsula) hot, semiarid eco-region	5	531.0	791	0.79	1684	1800	4
8	Ramsagara- Ballary Deccan Plateau, hot semiarid eco-region	4	330.0	184	1.93	537	576	23
9	Aalur- Ooty Deccan Plateau, hot semiarid eco-region	5	758.0	637	1.11	1765	1887	24
11	Jigna- Datia Eastern Plateau (Bundelkhand Upland) hot subhumid eco-region	3	535.0	550	0.66	1362	1669	4
12	Lachhaputtraghathi- Koraput Eastern Plateau, hot sub humid eco-region	3	451.0	315	0.52	552	440	20
14	Langha- Dehradun Western Himalayas, warm to hot sub humid to humid eco-region	4	250.0	321	0.54	847	955	2

2.1.6 Assessment of role of organised dairy sector on livelihood of women (2021-24)

Investigators: *Arpita Mohapatra, B. Sahoo and Chaitrali Shashank Mhatre*

Livestock provides 14.00% income of all rural households in India as well as generate employment for 8.80% of the country population (Vikaspedia, 2022). The 70th round of National Sample Survey Office (NSSO) highlighted that more than one-fifth (23.00%) of agricultural households with very small parcels of land (less than 0.01 hectare), reported livestock as their principal source of income. This sector also contributes 4.11% of national GDP and 25.60% of agriculture GDP. Dairy is the largest livestock sector, alone shares 5.60% of total agricultural GDP. Dairy has enough potentiality to mitigate poverty and improve food security. Indian women are primary care taker of their cattle. They participate in various farm activities like shed cleaning, animal cleaning, fodder collection, care of sick, pregnant and newborn animals, milking as

well as milk processing. About 70% of labour force in dairy sector is women.

In most part of rural India, owing to poor mobility of rural women and existing social and psychological barriers male interferes in financial aspect of the dairy enterprise. Western and central states have higher dairy cooperatives in India as compared to eastern, north-eastern and southern states. Even it was observed that private sector dairies are also doing good and provide substantial effort in milk procurement like cooperatives in India. Although 5 decades have passed since Operation flood still 60% of total milk produced in India is poured in unorganised sector. Gender inclusive approach of dairy cooperative by means of WDCCS in Gujarat improved women's participation, equal access to benefits, equal social status and decisive. Gujarat is home to 5125 Women dairy cooperative societies (WDCCS), whereas in Odisha it is about 800. Institutional participation of women farmers needs to be emphasised more than their household participation to make women financially and socially independent.



Data collection from women dairy farmers

Women cooperatives facilitate women to improve their skills and knowledge through several extension activities, facilitate them in terms of milk marketing and show them the realm of business ecosystem. Dairy farming of Odisha needs to support social and financial security of women through various microenterprises like Gujarat in coming future. After a pilot study it was found that there are 8 milk unions in Odisha and Cuttack milk union (462) has maximum WDCS and Ganjam has minimum (20) WDCS. Within Cuttack milk union Cuttack district (212) has highest WDCS. Within this district Mahanga (39) and Niali (30) has maximum WDCS. In Ganjam milk union Ganjam district (10) has minimal WDCS and Chikiti (2) and Kukudakhadi (2) blocks have highest WDCS. Questionnaire was developed and validity was checked by different experts in this field and then reliability was checked in farmer's field.

Research Programme 3: Community-based technological interventions for food, nutrition, livelihood securities and entrepreneurship development for farm women

2.1.7 Development of women entrepreneurship in Livestock and fisheries sector for promoting gender equity and strengthening livelihood. (2020-23).

Investigators: Tanuja S, A.K.Panda, Lipi Das, and B.Sahoo

When facilitated with equal access to inputs and services, women-owned enterprises have the capability

to produce equally strong economic outcomes as enterprises led by men. Up scalable entrepreneurship models for rural women pertaining to small-scale poultry, livestock and value addition of fish is a need of the hour. But scientific understanding and approach towards entrepreneurship development is needed towards sustainable enterprise development. Hence the project was initiated with the following objectives, 1) To develop small scale entrepreneurship models in backyard poultry farming, small ruminant farming and value added fish products 2) To facilitate setting up of enterprises by rural women integrating forward and backward linkages 3) To study the impact of established entrepreneurship on productivity, income flow and household nutrition. The information on role of women in poultry farming system, constraints and challenges faced by them for entrepreneurship development in small scale poultry farming was collected through semi structured interview schedule in four districts of Odisha (Puri, Cuttack, Dhenkanal, and Jajpur). The information on entrepreneurial needs and constraints faced by fisherwomen has been collected from Puri and Khordha districts. Based on the discussions with the rural women, the following interventions have been identified for implementation in the project Product standardization of prawn sev, fish pickle and solar dried prawn has been done. The fish pickle, papad and dry prawn were analysed for their mineral content.

Table 2.7 Details of different enterprises

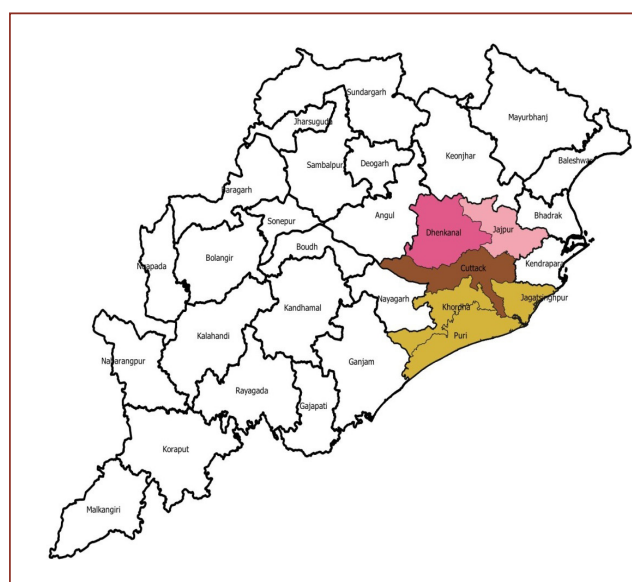
Poultry	Goatery	Value added fish products
Improved chicken varieties like Vanaraja, RIR and Kadaknath	Improved goat breed Black Bengal	Product standardisation, nutritional profiling , shelf life analysis and skill training prawn pickle, Fish pickle, Prawn sev, prawn papad. Consumer Survey of the products
Low cost feed using locally available feed ingredients	Broiler goat rearing	Facilitation for availing Govt Schemes (One District One product, National SCST hub, ASIIM, MKUY (Odisha), UDYAM registration Business model and Business plan development
Semi intensive/intensive rearing practices	Formation of women goat keepers association	Formation of producer groups/commodity interest groups
Linking with livestock mission /OPALFED for sustainability of the enterprises		Drying using Solar Cabinet dryers, modern packaging methods
		Branding through trade licensing, Market linkage through private retail chains, Mission Shakti, NGO's

Table 2.8 Mineral content in fish products

Products	P(%)	K (%)	Fe (ppm)	Cu (ppm)	Zinc (ppm)	Mn (ppm)	Ca (%)	Mg (%)
Prawn Papad	0.362	0.154	433.1	145.5	28.9	102		
Dry Prawn	1.866	0.138	373.2	206.3	61.8	27	3.525	0.729
Fish pickle	0.785	0.397	214.4	285.4	41.9	30	0.259	0.113

Two skill trainings were imparted on fish pickle and prawn sev preparation to master trainers. A front line demonstration was conducted on 1st December 2021 wherein the selected women SHG group members were demonstrated the hygienic way of drying fishes. They were also trained on the preparation of silage from fish waste so that they can utilize the by-product from processing of fish to improve their income. The two SC women SHG groups in Kanamana village have been facilitated with two Solar cabinet dryers and two aluminium foil sealing machines for starting their enterprise on value added fish products. The women SHG groups from Kanamana have started selling the fish pickle also under the brand name “Fishlikes”. Economic analysis /business plan has been made for small-scale poultry, Goatery and value added fish products enterprises. Three Poultry germplasms, Vanaraja, RIR, and Kadaknath have been identified and a Business model for undertaking small scale poultry enterprise development has been worked out. Five farm women have been identified for undertaking

small scale poultry in entrepreneurship mode and their capacity building programme on improved poultry farming was conducted. Two skilled-based capacity building programme on Improved Management Practices in Poultry Farming has been conducted.


Fig. 2.7 Project location in different districts of Odisha



Meeting and consultations with women entrepreneurs



2.1.8 Entrepreneurship Development through value addition and product diversification of food crops. (2020-23).

Investigators: Sachidananda Swain, Jyoti Nayak, Lipi Das and Tania Seth

Development of value added products from Bael, Mango and cashew apple

Bael and mango is highly rich in enormous nutrients but being seasonal fruits, utilisation of nutrients may not be available throughout the year and so number of bael based products was standardized in post harvest technology laboratory. Some of major products are described below:

RTS (Ready-to-serve) Bael and Mango

Bael (*Aegle marmelos*) and mango (*Mangifera indica* L.) fruits were broken and pulp was removed followed by grinding in a mixer grinder. The TSS, TA and pH

was found to be 18.0⁰ Brix, 0.73 %, 5.76 and 10.9, 0.62% and 6.57 respectively. Sugar, citric acid and water required for RTS preparation were added. Then, the blended solution is pasteurized (75-80°C for 4-5 minutes) to inactivate spore forming organisms and enzymatic browning followed by filling into glass containers (crown corking) and stored at room temperature (27±3°C) and refrigerated temperature (4±1°C). For preparation of “Ready-To-Serve”(RTS) beverage, 12% TSS and 0.29 % TA and preservative (mainly citric acid) was found satisfactory.

Table 2.9 Biochemical parameters of pulp in preparation of RTS juice

	Total Soluble solid (TSS)	Titration acidity (TA) (%)	pH
Bael pulp	18.0	0.73	5.76
Mango pulp	10.9	0.62	5.21



RTS Bael



RTS Mango

Bael slab

After removal of pulp from ripe fruits, 200-300 ml of water was added for each 1 kg of pulp followed by well mixing and heating at 80°C in laboratory tray dryer. Then the heated pulp were passed into strainer (stainless steel sieve) to remove seeds and fibers. Sugar, citric acid and potassium metabisulphite (KMS) to this pulp is added so that treated pulp contains 35% total soluble solids, 0.5% total acidity and 0.07% KMS. Then, treated pulp was boiled and spread on aluminium trays smeared with butter followed by drying at 55-60°C for 15-16 hours to moisture content of 14.5%. Cut slabs of dried pulp in aluminium trays, wrap in butter paper and pack in polyethylene bags. Addition of up to 10 % sugar to the extracted pulp is found to be ideal before drying the pulp to moisture content of 14.5 %.



Bael squash

Bael Fruit Squash

An ideal composition of bael fruit squash is 50 % extracted pulp, 50° Brix and 1% acidity. The squash is chemically preserved by addition of 300 ppm SO₂. Fruit beverages commercially contain at least 25 % fruit pulp or juice and 40-50 % TSS, besides 1% acid. The squash from bael fruit pulp was prepared by adjusting the TSS and by adding the preservatives like sodium metabisulphite @ 350 ppm SO₂, sodium benzoate @ 1g/litre. The squash was then filled in sterilized bottles, crowned and pasteurized at 80°C for 30 minutes followed by cooling and wax sealing to insure air tightness.

RTS (Ready-to-Serve) cashew apple

Cashew (*Anacardium occidentale* L.) has commercial value for its nut and peduncle (false fruit), known as

cashew apple. Odisha produced around 125,000 tonnes of cashew nuts (2020-21). After harvest, only nuts are being used commercially but the peduncle is of no use and left in the field itself due to lack of standardized technologies for its adequate use. To solve the problems faced by cashew growers in the state, value added products has been standardized for its optimum utilization as a mean for enhancing livelihood status.

After collection, fruits were washed through clean water and then cut into small pieces. Then the pieces were subjected to grinding in a mixture grinder and the pulp were strained in a strainer to make clear juice. The TSS, TA and pH was found to be 10.8° Brix, 0.26 %, 3.9 Sugar, citric acid and water required for RTS preparation were added. Then, the blended solution is pasteurized (75-80 °C for 4-5 minutes) to inactivate spore forming organisms and enzymatic browning followed by filling into glass containers (crown corking)

Research Programme 4: Vulnerability Framework and Drudgery Reduction for Women in Agriculture

2.1.9 Study of Farm equipments and tools for drudgery reduction of women in agriculture (2020-23)

Investigators: *Chaitrali Shashank Mhatre, and Jyoti Nayak*

For adoption of higher level of technology to perform complex operations within time constraints and with comfort and dignity to the operators, mechanical power becomes essential. Thus, the extent of use of mechanical power serves as an indicator of acceptance of higher level of technology on Indian farms. The Sub Mission on Agricultural Mechanization (SMAM), a centrally sponsored scheme for promotion of farm mechanization was launched by the Ministry of Agriculture and Farmers Welfare in the year 2014-15 for its implementation through State Department of Agriculture, FMT&TIs, selected agricultural universities and ICAR institutes for a period of five years. Farm Power Availability (FPA) of the country was studied for proper planning and implementation of the scheme. FPA is a factor which gives us a nationwide farm mechanization scenario along with information on various power sources utilised in agriculture. It was found that the average FPA before the implementation of SMAM i.e.,

at the end of 2013-14 was 1.84 kW/ha, whereas after three years of its implementation, it has risen to 2.025 kW/ha. Thus, an increase of 17.3 % has been recorded. The future requirement has been worked out at 2.50 kW/ha during the year 2022 and 4.0 kW/ha during year 2030. FPA is calculated as follows:

$$\text{Farm Power Availability (kW/ha)} =$$

$$\{(\text{Number of agricultural Worker} \times 0.05) + (\text{Number of draught animal} \times 0.38) + (\text{Number of Tractors} \times 26.1) + (\text{Number of Power tillers} \times 5.6) + (\text{Number of electric motor} \times 3.7) + (\text{Number of diesel engine} \times 5.6)\} / \text{Available cultivated land in ha.}$$

The Monitoring, Concurrent Evaluation and Impact Assessment of Sub-Mission on Agricultural Mechanization, 2018 was studied and the data was analysed. The pattern of farm mechanization varied from state to state within the country and from district to district within the states. Hence a comprehensive map of the district-wise data was plotted using GIS software. It is depicted in the figure below.

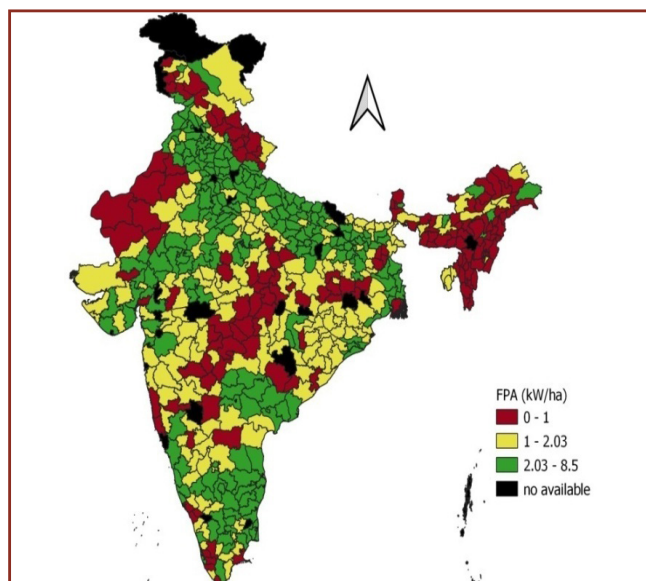


Fig. 2.8 Representation of FPA (kW/ha) in India district-wise

It may be observed that on the district level, even though the distribution of high, medium and low level of FPA is varied within the country, still there emerges a pattern among variations. There are certain districts irrespective of states that amalgamate to form clusters of high, medium and low level of FPA. In a nutshell it can be noted that clusters with high FPA (>2.03 kW/

ha; green colour) belong to portions of agriculturally favourable Agro Ecological Zones (AERs) such as 4,5,6,7,8,9,13,15,19 (*Indo-Gangetic plains Bengal basin, Kathiawar peninsula, Deccan plateau, Narmada, Tapi, Mahanadi, Godavari, Krishna river deltas*). Thus are blessed with coastal, humid to semi arid ecosystem having length of growing period ranging from 210+ to 90 days. These cluster either have a perennial flowing river through it or are situated on a river delta with good quality alluvial, black, tarai, clayey soil etc. They also have a low elevation rise, thus comprising of vast plains. All these factors lead to farmer taking multiple crops during a year, hence, utilising mechanical means for timely farm operation. Also operation of heavy farm machinery like self propelled combines, tractors and tractor operated implements is facilitated by plain regions.

On the other hand, the clusters with low FPA (<1.00 kW/ha; red colour) belong to portions of agriculturally unfavourable Agro Ecological Zones (AERs) such as 2, 7, 10, 11, 14, 16, 17, 18 (*Western & Eastern Himalays; Malwa plateau, Eastern plateau, Bundelkhand plateau; Western plains, Assam plains, North Bengal plains; north-east hills*). The geographical profile of these regions are dominated by world's highest mountain range, i.e Greater Himalayas, Pirpanjal ranges, Shiwalik hills, Purvanchal range, thus these steep hills and elevations do not provide a conducive land for agriculture in a conventionally large manner. Additionally there are some low level of clusters in Thar desert, Satpura ranges, Arawali, Rajmahal hills etc where the atmosphere and water availability is a constraint. These region are also dominated by presence extensive forest cover, thus limiting the expansion of agriculture, consequently its mechanization. The soil is either shallow, skeletal hill soil or desert saline soil, red & yellow soil with mostly LGP of 120 to 150 days. These all factors cause low net sown area and lower cropping intensity. Hence, the FPA in these clusters is low. The clusters with medium FPA (1.00 – 2.03 kW/ha; yellow colour) fall in portions of Agro Ecological Zones (AERs) which have a mixture of the favourable and unfavourable features, resulting in moderate agricultural needs. Thus these regions are limited to medium level of FPA.

Research Programme 5: Assessment, refinement and popularization of gender friendly technologies and skill enhancement of farm women

2.1.10 Designing and Development of Gender Sensitive Agri-Nutri (GSAN) Farming System Model (2019-22)

Investigators: Lipi Das, S. K. Srivastava, B. Sahoo, Praveen Jakhar and Tania Seth

During the third year (2021-22) of the Institute research project as per the plan under crop module different gender sensitization activities to disseminate Nutri-smart technological interventions were carried out in the operational villages: Sankilo and Tentalpur in Nischintakoili block in Cuttack district of Odisha. As per objective 3; Agri-nutri education to farm women was imparted through farm family interaction, presentations and discussion involving different stakeholders. Under objective 4 of the project; Identification of suitable technologies and integration of income enhancement of small farms with the production of nutritious crops different nutrition enhancing technologies for farm women were demonstrated and evaluated in participatory trial mode in both the villages.

Demonstration under Crop-based Module (Rice)

Under crop module of nutri-farming system, high yielding and nutritive varieties of rice were evaluated in 40 nos. of women farmers' field in total area of 10.5 ha. The mean demonstration yield of newly introduced protein rich micronutrient laded fortified rice varieties was higher (55.8 q/ha) in comparison to existing variety of farmers' practice (35.9 q/ha). The increase in yield under demonstrations was to the tune of 57.6% and 53.2% over local variety, in Sankilo and Tentalpur, respectively. On an average, overall under the Gender-Sensitive Agri-Nutri (GSAN) Farming System Model the introduced varieties gave 55.4% yield advantage under demonstrations. This improvement can be attributed improved seed and scientific package of practice adopted by women farmers in both the villages. An extension gap in yield ranging from 15.5 to 25 q/ha was observed between demonstrated technology *i.e.* improved nutri-rich varieties and farmers' practice. Extension gap directs to improved seed material, healthy nursery and adoption of

improved production technology in the demonstrations over farmers' practice. The mean extension gap of was found to be 21.0 q/ha in Sankilo and 18.8 q/ha in Tentalpur for 20 demonstrations in each village which is only 25% of variety's mean potential yield.

Technology index indicates the feasibility of the technology; as comparative performance to potential yield in the farmers' fields. Mean technology index revolved around 9.6% in Sankilo and 12.7% in Tentalpur during 2021. Technology index was higher in biofortified varieties Mukul and CR Dhan 315 in both the villages, attributing to nutritious traits of both the variety. The economic analysis of trial indicates higher mean gross and net returns of the demonstration to the tune of Rs.1,08,239/- and Rs.55,317/- under demonstrations, respectively. Owing to improved seed and other inputs; the average cost of cultivation (Rs. 54,922/- per ha.) in demonstration was higher in comparison to farmers' practice (Rs. 37,500/-). On mean values basis, an additional investment of Rs. 15,510/- per ha. in Sankilo and Rs. 15,333/- per ha in Tentalpur during 2021 was made under demonstrations. This gave additional gross returns of Rs. 40,779/- and Rs. 36,536/- per ha, respectively. In Sankilo, maximum net returns of Rs. 73,100/- per ha were obtained in CR Dhan 312 where as in Tentalpur village HYV Swarna sub-1 gave maximum net returns of Rs. 60,960/- per ha. Under G-SAN nutri-model in crop module, high yielding and biofortified varieties cultivation and adoption by 40 women farmers recorded average incremental benefit: cost ratio of 2.5 with effective gain of Rs 23,236/- per ha which is ascribed to high yield, additional return and low additional cost. Through introduction of these high protein content rice varieties CR Dhan 311 (Mukul) and CR Dhan 315 an additional protein yield of 3.26 and 3.30 q/ha is added to the diet of farm families of the Sankilo and Tentalpur villages. These biofortified varieties also help in meeting the Zn requirement of women and child with higher zinc content (20-22 ppm). Introduction of a combination of HYV (CR Dhan 312, Maudamani and Pradhan) with biofortified varieties (CR Dhan 311 (Mukul) and CR Dhan 315) is a very important step under the G-SAN crop module for higher income along with women and farm families nutrition.

Table 2.10. Demonstration area under HYV and bio-fortified* rice varieties in different villages (N=40)

Sl no.	Variety	Sankilo (ha.)	Tentalpur (ha.)
1.	CR DHAN 312	1.70	-
2.	Swarna Sub - 1	0.61	-
3.	CR DHAN 409 (Pradhan)	0.17	1.43
4.	CR DHAN 311 (Mukul)*	1.29	1.94
5.	CR DHAN 315*	2.65	0.71
	Total (10.51 ha)	6.43	4.08

Table 2.11 Rice yield and gap analysis under agri-nutrition technology demonstration in different villages (N=40)

Varieties	Demo. yield (q/ ha)	Increase over local variety (%)	Ext. gap (q/ ha)	Technology gap (q/ ha)	Technology index (%)	Additional Protein yield (q/ha)	Zn (ppm)
Sankilo village							
CR DHAN 312	65.0	62.50	25.00	1.00	1.52	1.05	18
Swarna Sub - 1	60.8	68.89	24.80	4.20	6.46	1.12	21
CR DHAN 409 (Pradhan)	58.0	65.71	23.00	5.00	7.94	1.03	20
CR DHAN 311 (Mukul)	52.8	46.67	16.80	9.20	14.84	3.35	20
CR DHAN 315	50.5	44.29	15.50	10.50	17.21	3.18	25
Mean	57.4	57.6	21.0	6.0	9.6	3.80	20
Tentalpur village							
Swarna Sub - 1	59.0	63.89	23.00	4.00	6.35	3.98	21
CR DHAN 311(Mukul)	52.5	50.00	17.50	9.50	15.32	3.38	20
CR DHAN 315	51.0	45.71	16.00	10.00	16.39	3.23	25
Mean	54.2	53.2	18.8	7.8	12.7	3.53	22

Demonstration under Horticulture-based Module

Survey was carried out through interview schedule to understand the change in knowledge level of farm women about nutritional aspects due to technological interventions. The same 40 numbers of participating farm women and same set of questionnaire were used to assess the awareness level on a 3 rating scale. The result depicts that through technological interventions of horticultural crops, 57.50 percent farm women are now very well aware (> 60%) about nutrition as compare to pre-project data (17.50%). Whereas, only 15 percent farm women are somewhat aware (<30%) about the nutritional aspects as compare to pre-project data (50.00%). In the first year of the project, during benchmark survey it was observed that none

of the families were involved in cultivation of tuber crops. So, another survey was conducted to study the preferences of the horticulture crops perceived by farm women. Through distribution of quality planting material and capacity building about various aspects the preferences of the horticulture crops perceived by farmwomen was changed in the two villages. The women farmers now preferred to cultivate Colocasia followed by cowpea followed by bitter gourd, okra and ivy gourd. However, the farmwomen preferred cultivation of these vegetables due to high market demand followed by high nutrient content and high yield. A considerable higher shift in the preference ranking pertaining to nutrition was also observed which initially was ranked lower than the current finding, indicating the increase in awareness level regarding nutrition.

Table 2.12 Preferences of Horticulture Crops Perceived by Farmwomen (N=40)

Parameters	*% of the Total Weighted Score (out of 360)					Overall Mean	Rank
	Cowpea	Bitter Gourd	Okra	Ivy Gourd	Colocasia		
High yield	65.98	70.12	64.65	68.25	63.53	66.51	III
High nutrient content	69.52	79.23	72.23	65.63	67.47	70.82	II
Less irrigation required	35.12	29.23	25.49	41.16	46.09	35.42	IX
Easy to grow/cultivate	39.43	42.48	50.36	35.34	59.89	45.50	VII
Easy seed availability	56.08	51.14	47.12	41.03	43.14	47.70	VI
Less infestation of disease pest	44.57	23.42	28.48	35.1	56.49	37.61	VIII
Good taste	51.67	55.35	48.89	42.33	45.68	48.78	V
Good cooking quality	60.29	68.33	58.5	58.62	57.43	60.63	IV
High market demand	96.52	98.82	94.62	88.41	93.72	94.42	I
Overall Mean	57.69	57.57	54.48	52.87	59.27		
Rank	II	III	IV	V	I		

Animal Husbandry-based Module

Study was carried out among forty women farmer involved in dairy farming in SHG mode were selected amongst 100 farm women who were having at least 2 milch animals, interested in receiving training and showing keen interest for women empowerment through value addition on milk. During the study the constraints for value addition of milk was also recorded. The constraints related to various input resources, technologies, financial, infrastructure, preparation of value added dairy products and marketing of milk and milk products were analyzed following structured questionnaire and group discussion, Scoring pattern for constraints i.e. very high (3), high (2), medium (1) and low (0) were given and weighted mean score

along with ranking was calculated and presented as follows. The data on resource constraints revealed that unavailability of Nutri rich Fodder having correlation with value addition of milk was the major problem in the study area (WMS 0.90). People are acquainted with feeding of paddy straw available in bundle and dry grasses having very low nutritional value, which is the major reason for low milk production in terms of quality and quantity. However, farm women were found to be maintaining hygiene and sanitary measures in cleaning of cows, shed and using cleaned utensils for milk collection and processing (WMS 0.36). About 50% of the respondents revealed that good quality fodder especially hybrid napier (Yashwant and IGFRI-6) provided by ICAR-CIWA are preferred by animals.

Table 2.13 Scoring of diffeent technological Constraints

Sl. No.	Technological Constraints	Very high (3 score)	High (2 score)	Medium (1 score)	Low (0 score)	WMS	Ranking
1	Lack of knowledge on balanced feed	34(85.0)	2(5.0)	4(10.0)	0(0.0)	0.92	III
2	Lack of hygienic and scientific milk storage	2(5.0)	28(70.0)	9(22.5)	1(2.5)	0.59	V
3	Lack of storage facilities	36(90.0)	2(5.0)	2(5.0)	0(0.0)	0.95	II
4	Lack of women friendly technologies	4(10.0)	28(70.0)	5(12.5)	3(7.5)	0.61	IV
5	Lack of equipments for value addition	35(87.5)	5(12.5)	0(0.0)	0(0.0)	0.96	I
6	Lack of knowledge on value addition of milk	1(2.5)	15(37.5)	22(55.0)	2(5.0)	0.46	VI

It was observed that about 70% of farm women involved in Dairy-farming mostly sell milk neglecting family consumption and preparation of home based value added products. Lack of equipments for value addition of milk was found to be the major constraints (WMS 0.96) followed by storage facilities of milk following scientific and hygienic methods. However, the farm women are aware on different methods of milk processing (WMS 0.46). Gender sensitization activities were carried out in the operational villages providing agri-nutri education, on simple, practically feasible and economically viable method of milk processing through presentations and discussion, scientist-farmers interface, demonstration of different technologies. About 90% of farm women involved in dairy farming were aware about various govt. schemes and showed access to banks for finance. However, registration as dairy farmer and association in registered SHGs/FPOs

was the major limitation for availing finance from banks (WMS 1.00).

Marketing of milk was not found to be a major constraint rather there is heavy demand of milk products preparation equipments like paneer pressing machine. Awareness among the dairy farm women was developed on enhancing income generation through selling value added dairy products. The data in figure 1 and 2 depicts that participation and decision making in selling and purchasing of live animals, feed, livestock products and maintenance of records was controlled by men except preparation and processing of milk products which is a women dominated activity in the study area. It is important to focus on dairy enterprises as the dairy cooperatives existing in the study area has better scope playing a vital role in the development of the dairy sector with value addition to make it more attractive and profitable through commercialization.

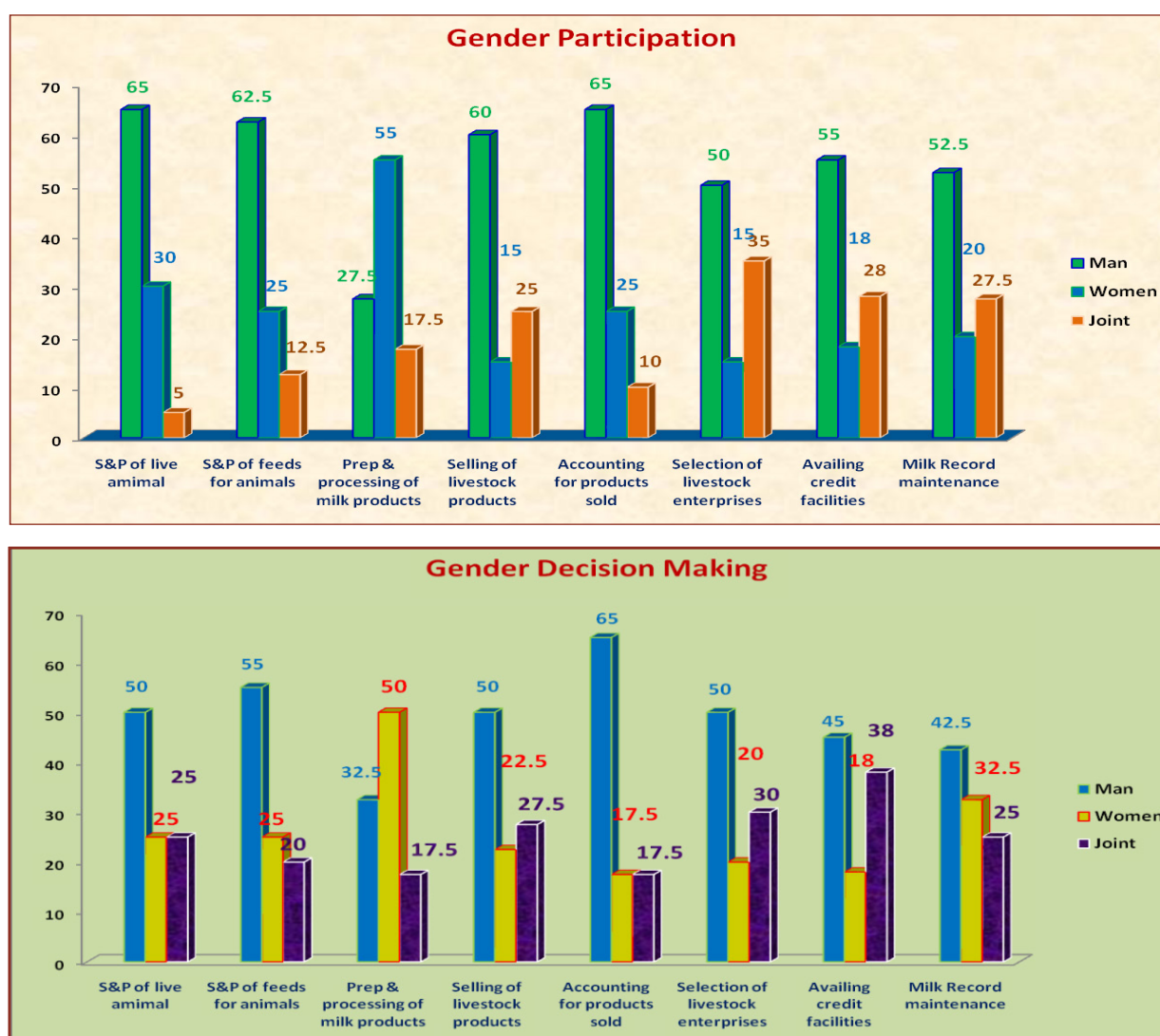


Fig 2.9 Gender decision making in dairy farming activities

2.1.11 Design and development of gender sensitive integrated vertical nutri-farming system (IVNFS) for household nutrition and income (2020-23).

Investigators: *Tania Seth, Arun Kumar Panda and Chaitrali Shashank Mhatre*

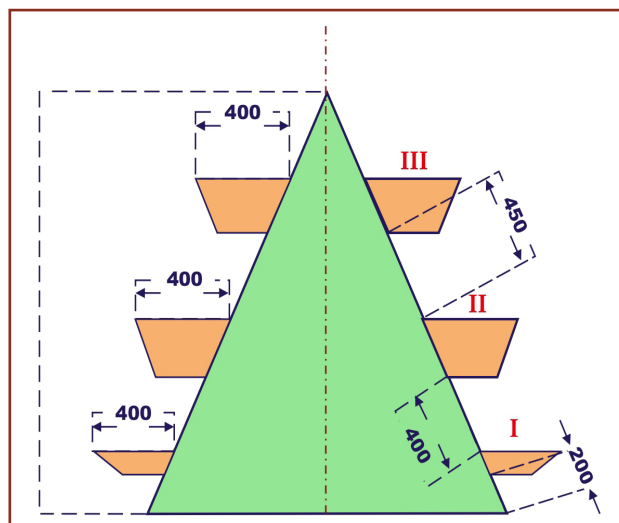
The project was taken up with the objectives to design and develop a gender friendly integrated vertical nutri-farming system for growing of year round nutritious vegetables along with poultry farming and/or mushroom cultivation and to study the impact of integrated vertical nutri-farming system on household production, nutrition and income.

Designing and development of Prototype-I of IVNFS

Before fabrication of final structure designing of the Prototype-I was done. The Prototype-I was an inverted “V” shaped/triangular base frame fabricated from iron in the ICAR-CIWA FMP workshop. The dimension of the Prototype-I is 2.14 m x 1.98 m x 2.13 m (L x W x H). A number of materials were used to make the troughs in different dimensions to study the effect on growth and yield of different vegetable crops. Six numbers of vertical troughs was designed for growing of vegetable crops at different height. Two types of materials *viz.* wire mesh with polythene lining and GI sheet with thermocol lining were used for fabrication of vertical troughs. The dimensions as well as fabricating material of troughs were finalized from the experiment for preparation of final IVNFS structure. The troughs are inverted trapezoidal shaped having 2.14 m in length and 0.40 m in width. The dimensions of the troughs are as follows:

Table 2.14 Specification of troughs of Prototype-I

Troughs	Specifications
Height of 1 st trough from ground	10 cm
Depth of 1 st trough	10 cm
Height of 2 nd trough from ground	60 cm
Depth of 2 nd trough	25 cm
Height of 3 rd trough from ground	130 cm
Depth of 3 rd trough	25 cm



All dimensions are in mm

Fig. 2.10 Schematic diagram of vertical troughs of Prototype-I of IVNFS

Vegetable cultivation in the IVNFS structure – The developed Prototype-I of IVNFS structure was set up in the farm of ICAR-CIWA to study the growth and yield of vegetable crops in the vertical troughs. Wire mesh with polythene lining and GI sheet with thermocol lining were used for fabrication of vertical troughs. There was no significant difference observed in the growth and production of vegetable crops grown in GI sheet with thermocol lining and wire mesh with polythene lining. From the study it was concluded that the troughs will be fabricated using wire mesh with polythene lining as it is more economic as compare to GI sheet with thermocol lining. Based on the performance of vegetable crops in the Prototype-I the designing of final structure is finalized.



Fabricated Prototype-I of IVNFS

The vegetable crops to be grown throughout the year in the different troughs of the IVNFS were also finalized. The details are tabulated below:

Table 2.15 List of vegetable crops to be cultivated in the IVNFS structure

Troughs (from bottom)	Vegetable Crops
I	Leafy vegetables/Salad crops/Bulb crops
II	Leguminous vegetables/Cruciferous vegetables
III	Solanaceous vegetables/Colocasia/Root crops/Okra

Sunlight distribution study of IVNFS structure –

The effect of sunlight distribution pattern on growth of vegetable crops planted on Prototype-I of IVNFS was studied. The incident of sunlight distribution pattern was studied in two orientations viz., East-West and North-South. The distribution of sunlight falling on the vegetable troughs of IVNFS was recorded in a matrix of rows and columns with the help of lux meter (Range: 0-50000 lux; Power supply: 9V DC battery; Current: 2mA). The readings were recorded over every one hour interval from 10 a.m. to 4 p.m. In East-West orientation, as the sun traverses the sky, one side is always subjected to shadow from the other side. While in North-South orientation, the sunlight is distributed all over the structure throughout the day. Thus, one side gets the morning sunlight from east and the other side gets afternoon sunlight from west. As the vegetables planted are sun-loving, this distribution pattern of sunlight was observed to be beneficial. Hence, it was concluded that the IVNFS structure will be kept in North-South orientation.

Preparation of semi-structured interview schedule

– The semi-structured interview schedule was prepared in Odia language for collecting the information from individual farm women/families about the technological needs and knowledge gaps about IVNFS.

2.1.12 Assessment and refinement of Integrated Farming Systems in gender perspective in different agro-ecological regions of India (ICAR-CIWA-IIFSR, Modipuram collaborative Project) (2021-24).

Investigators: A.K. Panda and Praveen Jakhar

The project involves assessment of different integrated farming system (IFS) models in gender perspective under different production systems of the country. The project is undertaken in different agro-ecological region of India. Assessing the involvement of farm women in IFS for income and household nutrition of farm families is of paramount importance. Based on the output as well as field interactions critical evaluation is done with measurable indices. During the year interface meets were done using different platform with the collaborative partners for formulation of methodology and data base management.

Methodology developed: A methodology was developed by designing the schedules and checklists for assessing the gender sensitivity of IFS models with participation and contribution of women in different agro-ecological regions of India. The methodology reflects the different dimensions of women empowerment adopting IFS models. The newly devised methodology represents analysis of assessment for farm women livelihood, income, and technological empowerment. Agro ecological region wise information on different IFS models was collected and a dynamic database was developed for 20 AER of India. The dominance of various agro-ecological factors were also considered while assessing the IFS models. For every Different gender indices assessment tools are finalized. Gender specific technological interventions will be done in IFS models to meet out gender equalities. Data was collected to assess the gender wise participation in different IFS models. Some of the important models for IFS are tabulated below:

Table 2.16. Integrated Farming Systems models in different AER of india

Agro ecosystem and Production system	Agro-ecological Region (2015)	AICRP WIA	Recommended models (IIFSR, Modipuram-2020)
Hill and Mountainous Agro-ecosystem Livestock and fish production system	AER no. 18 North Eastern hills (Purvanchal), warm perhumid eco-region with red and yellow soils	Tura (Meghalaya)	1. 1. Crop + livestock + fish IFS (1ha) for North Eastern hills 2. Crop + livestock + fish integrated organic farming system (0.43 ha)
Rainfed Agro-ecosystem Rainfed rice production system	AER no. 12 Eastern Plateau, hot sub-humid eco-region with red and lateritic soils	Bhubaneswar (Odisha)	3. Crop + fisheries for enhanced income 4. Multi-tier rice+ fish + hort. IFS for deep water areas 5. Rice +fish for rainfed lowlands
Arid Agro-ecosystem Agri-silvi-horti-pastoral production system	AER no. 5 Northern Plain (Rajasthan Upland and Gujarat plains) hot semiarid eco-region with old alluvial soils	Udaipur (Rajasthan)	6. Livestock + crop for semi-arid plains 7. Crop+ trees + grass + livestock IFS 8. Fruit+ field crop+ medicinal plants for limited irrigation situations
Irrigated Agro-ecosystem Sugarcane – based production system	AER no. 19 Eastern Coastal Plains and Island of Andaman and Nicobar, hot subhumid (with humid to perhumid inclusion)	Madurai (Tamil Nadu)	9. Crop + livestock + fish IFS (0.80 ha) for lowland delta areas. 10. Crop + livestock IFS (1.20 ha) for sustainable income
Rainfed Agro-ecosystem	AER no. 3 Deccan Plateau, Hot Semi-Arid Eco-Region	Parbhani (Maharashtra)	11. Goat + crop IFS (1 ha) for rainfed areas 12. Crop + dairy IFS (1 ha) for Marathwada region 13. Crop + livestock IFS (1 ha) for sustainable income

2.1.13 Development of Nutri Smart Villages for Food Security and Dietary Diversity for Combating malnutrition (2021-2024).

Investigators: Jyoti Nayak, Anil Kumar, A. K. Panda, L. P. Sahoo and Tanuja S.

The health of an individual is known to be influenced by his/ her nutritional status. here are several factors that have been associated with the occurrence of malnutrition particularly among women such as the socio economic status, culture, demography and dietary characteristics. In developing countries, women take a major share of managing the food security of families, as they are responsible for cooking and feeding all the family members apart from decision-making. However, they also tend to neglect their own health as priority is placed on taking care of others. The health of women is linked to their status in the society. A proper diet is essential from the very early stages of life for growth, development and for a state of overall well-being. Food consumption, which largely depends on production and distribution, determines nutrition and health of the population. Apart from supplying nutrients, food provides other components (non-nutrient phytochemicals), which have a positive impact on health. Assuring adequate nutrition

from an early age on is therefore a prerequisite for a society's prosperity. Diet plays a special role because of the importance of specific micronutrients for growth and development. Agricultural variables influence dietary diversity and nutrition intakes. Diversification – either in terms of crop production and livestock ownership or in terms of income – improves or positively influences dietary diversity. Moreover, higher the education of the household head, better is the dietary diversity due to improved awareness of access to basic amenities like good quality water, better sanitation facilities, a smoke-free cooking environment, and an employment status that is less strenuous.

The project was designed with the objectives for promoting nutritional awareness, education and behavioural change in rural area involving farm women and school children, harnessing traditional knowledge through local recipe to overcome malnutrition, implementing nutrition sensitive agriculture through homestead agriculture and nutri-garden. In the first phase a semi structured questionnaire was developed for collecting, Socio-economic profile of the farm families, Nutritional status of the farm families, Food consumption pattern, Food purchasing pattern of

families (quantity of food purchased for the family during last one month), Dietary Information for three Consecutive Days, Morbidity status for past three months, Clinical symptoms of nutrient deficiency and morbidity status, Nutritional Knowledge, Attitude, Practice (KAP) for identified villages. In the second phase Four Districts namely Puri, Khorda, Cuttack, Jagatsingpur were selected, from all the districts, Seven Blocks were randomly selected. From the selected Blocks ten Villages *i.e.* Kunjar, Mahura, Gadasanput, Nuagaon, Sankilo, Tentapur, Kanjia, Sribanapur, Chitra, Sagada were identified to carry out the applied research. The Population Characteristics, Education Facilities, Health Facilities, Animal Husbandry facilities, Drinking water Provision, Drainage System, Communication Facilities, Transportation Facilities of the identified villages were collected.

2.2 External Funded Projects

2.2.1 All India Coordinated Research Project on Ergonomics and Safety in Agriculture (2017-23)

Investigators: *Chaitrali S. Mhatre and Jyoti Nayak*

1. Involvement of Women in Agriculture in the State of Odisha

The study was conducted in the state of Odisha. Odisha mainly comprises of two agro-climatic zone viz., eastern coastal plain (ACZ no.19) and eastern plateau (ACZ no.12). Hence two districts from each zone are selected for the study. In the first phase of study; Kunjar, Chitra and Sagada village are selected from Puri district (ACZ no.19) and Gobardhanpur village was selected from Balasore district (ACZ no.19) respectively to carry out the present study. Thus, the first stage study was conducted in 2 districts. The villages of Kunjar, Sagada and Chitra from Puri district and Gobardhanpur from Balasore were selected for the present study.

Time use pattern and involvement study:

There were sixteen agricultural operations, which were performed by the respondents in the state of Odisha. The data was collected and the brief findings of the study are as follows::

A. Crop Cultivation:

- Women spend almost 75 per cent and 58 per cent

of the time on agricultural activities as much as men in Puri and Balasore district respectively.

- In Puri, due to unavailability and unaffordability of machines activities like harvesting, threshing, winnowing and weeding were done manually, thus were time consuming. In Balasore, the respondents informed that they hired combine harvester for harvesting operation, as they have higher cultivated land size.

B. Animal Upkeep:

- Women spend almost 1.3 times and 1.1 times the time on animal upkeep activities as much as men in Puri and Balasore district respectively.
- In Puri and Balasore, highest involvement of women was observed in cleaning shed/ cleaning the coop, gathering dung, preparation of feed, feeding/ grazing, and addressing health. But in Puri, the outdoor operations viz, grazing and marketing are primarily performed by male.
- In Puri, the milk was marketed with the help of co-operatives like OMFED, PUMUL (Puri Milk Union), while in Balasore, most of the respondents reported utilization of milk for self-consumption.

C. Household Activities:

- For Puri district, it can be observed that women are more involved in unpaid work like cooking, house cleaning, washing clothes, utensils and animal upkeep. While men are involved in higher percentage in paid work like marketing and other income generation activities.
- For Balasore district, it can be observed that women are more involved in unpaid work like cooking, house cleaning, washing clothes, utensils and animal upkeep. But some women are also involved in other income generation activities (House maid etc). While men spend higher percentage of time in paid work like marketing and other income generation activities. As a part of study, to mitigate the constraints and issues identified and enhance the level of mechanization among farm women, seven numbers of awareness generation, exposure visits, training, demonstrations etc were conducted in last year, in which more than 280 stakeholders were benefited.

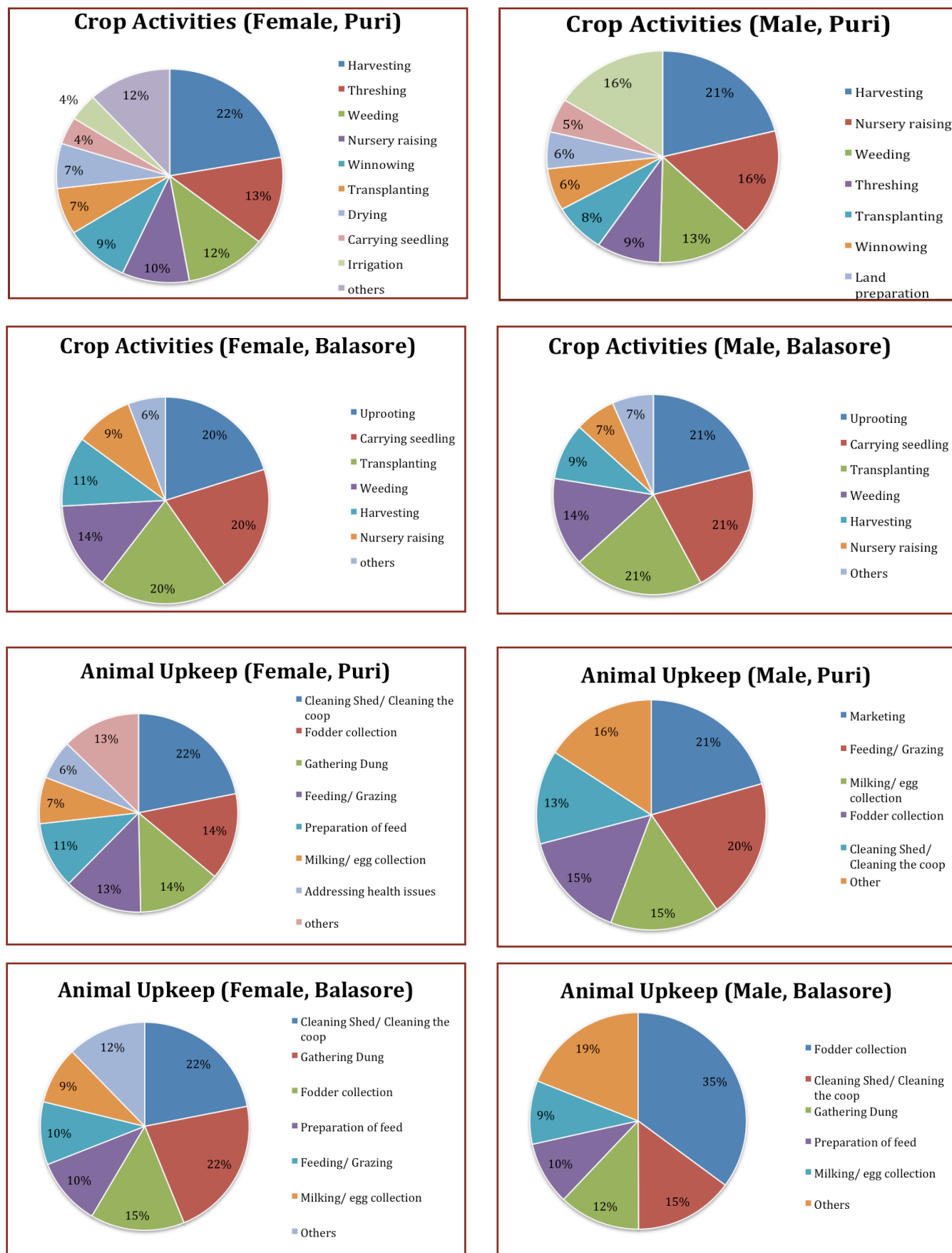


Fig. 2.11: Time use in different activities

2. Ergonomic evaluation of post harvest technologies in Fisheries sector

The fisheries sector in India plays a vital role in Indian economy. A post harvest activity in fisheries is dominated by women as evidenced by their roles of cleaning, trading, processing and fish farming. Fish processing includes all activities from fish harvest to till it reaches the consumer. All through these activities, women are exposed to risks, low temperatures, poor ergonomic practices and work place disorganisation. Fish vending and processing is very tedious and requires constant squatting or bending posture. Fisher

women face constraints in fisheries sector in various aspects like production, technical, economic, social, infrastructure, marketing etc. The major constraints face were lack of water source, high cost of technology, lengthy and cumbersome procedure of getting credit, poaching, inadequate information to the beneficiaries, lack of special market etc. Descaling is one of most often performed primary fish processing operation. It is also a time consuming and drudgery prone activity. There are various methods used to descale the fish. Also, numerous indigenous tools are available to descale the fish. The tools documented during the study are depicted as follows:



Kaati (Sharp edge on the convex side)



Vila (Sharp edge on concave side)



Panniki (Sharp edge is on inside)



Homemade descaler (Wood and nails)



Homemade descaler (sheet metal)



Indigenous/homemade descaling tools

The institute like ICAR-CIFT, ICAR-CIPHET, have been developing improved technologies in the fisheries sector, viz., transportation of live fish, descaling, marketing, cleaning etc. As descaling and marketing are women dominated activities & one of the most drudgery prone, hence improved tools and equipment in these areas need to be ergonomically evaluated and disseminated to the women in fisheries. In the present study CIFT manually operated fish descaling machine and fish vending kiosk were selected for evaluation.

Table 2.17 Postures adopted while operating CIFT manually operated fish descaler

Operation in Squatting posture		Operation in Sitting posture
RULA	7	7
REBA	5	9

A. Improved Descaling equipment:

Posture analysis: (REBA, RULA): The findings of preliminary postural analysis of CIFT manually operated fish descaler are:

- The handle needs to be provided with a grip for proper coupling with the hand.

- The Descaler must be placed on a platform with appropriate height to avoid awkward posture while operating. Also the operator must sit on a stool to avoid prolong squatting posture.

Physiological Study: A no load test was conducted for the manual fish descaler using female subject. The age, weight and height of the subject is 24 years, 56kg and 153cm respectively. The heart rate was recorded using pulse tip oximeter (K5 was not able to use due to ongoing COVID pandemic). The subject was given rest for 10 mins and HRrest was recorded. The descaler was operated for 20 mins, and HR work was recorded. Latter heart rate was recorded every 1 min to obtain time required for recovery. the work load is acceptable for manually operated fish descaler at no load condition.

B. Improved CIFT fish vending kiosk

The findings of preliminary postural analysis of CIFT fish vending kiosk are:

- The handle needs to be provided with a grip for proper insulation from cold
- Proper insulation may be given to cold portions, which are being handled often by subject.





- There should be a rubber matting placed on the floor to avoid slippage due to spilled water

Table 2.17 Postures adopted while operating CIFT fish vending kiosk

	Taking fish out from near end	Taking fish out from middle	Taking fish out from far end
RULA	3	4	4
REBA	4	6	8

3. Drudgery assessment of women involved in selected livestock management systems

The unit operations performed in the upkeep of the goatry were studied. Major operations are cleaning shed, gathering dung, fodder collection, chaffing fodder, feeding & grazing, addressing health issues, marketing. The time use pattern of owners in goatry management was studied through survey schedule. The survey questionnaire was designed to capture the time spent in specific operations in goatry management along with the difficulty in each operation. The owners were also quizzed for the tools and techniques used in the management. The farm women and men were interviewed with the

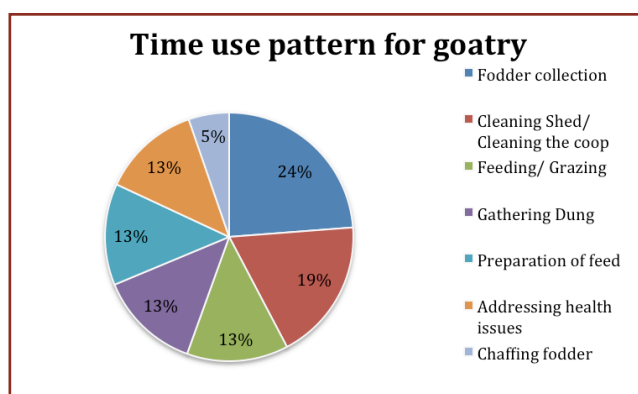


Fig.2.12 Time use pattern of Goat Owners



Feeding of dry mixture and grass to goat

Fig.15 Glimpses of operations during goat management

pre- tested well- developed structured schedule. The survey schedules were pre- tested in field labours of ICAR- CIWA other than those where the actual study was conducted. Total number of hours spent by the goat owners management activities daily is 6.31 hrs. The owners spent 23.77, 18.49, 13.21, 13.21, 13.21, 12.77 and 5.28 per cent of the time in fodder collection, cleaning shed, feeding/ grazing, gathering dung, preparation of feed, addressing health issues and chaffing fodder operation respectively. Hence it can be concluded that almost 50 per cent of the time for women in animal rearing activity is spent in three major activities namely, fodder collection, cleaning shed and feeding/ grazing. Hence, interventions need to provided in means of a proper housing system for goat, proper feeding platforms etc to reduce the time taken for cleaning feeding and watering operations. The goatry worker were asked to score the all operations of goatry management on the scale of "0 to 4" ranging from "not difficult" to "most difficult". The analysis of data suggested that the owners find cleaning of animal shed or resting area daily is the

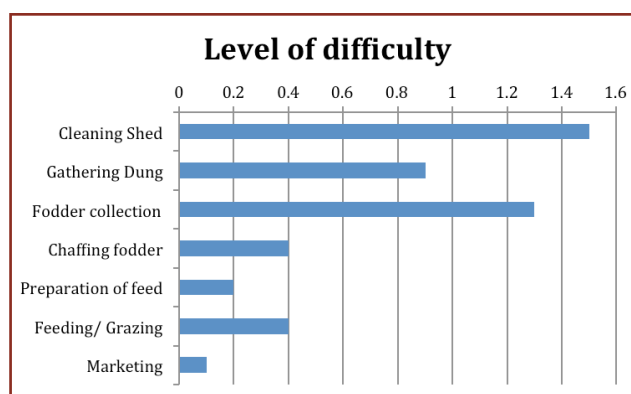


Fig.2.13 Difficulty level in different activities

most difficult operation, while fodder collection and gathering dung were more difficult. The other daily operation such as chaffing fodder, preparation of feed, feeding/grazing, were deemed difficult, while the operation like marketing and addressing health issues were done occasionally hence they fell under the category of not difficult.

2.2.2 Women Empowerment and Gender Sensitization-Developing a Model for Bridging Gender Gap (NASF Project) (2019-2022)

Investigators: Lipi Das and Praveen Jakhar

Under this project activity, technological and institutional interventions were continued and evaluated. On the basis of the identified critical gender gaps interventions were provided and field trials were conducted under three modules of Livelihood Enhancement Model for the small and marginal women farmers, Nutritional Security Model for medium-income group women farmers and Entrepreneurship Promotion Model for women farmers. The group approach in vegetable farming under Livelihood Enhancement Model has generated a total income of Rs.8, 01,960/- out of which a value of Rs.1, 60,392/- of vegetables has used for household consumption and Rs. 6, 41,568/- of vegetables sold in open market. The increase in yield under demonstrations was range from 25 to 30% over existing farmers' practice. Highest Benefit cost ratio of vegetables observed in cowpea (3.37) followed by bitter gourd (3.19) and okra (3.02). In case of rice production, the economic analysis of trial indicates higher mean gross and net returns of the demonstration to the tune of Rs.1,08,239/- and Rs.55,317/- respectively. In Sankilo village maximum net returns of Rs. 73,100/- per ha. were obtained in CR Dhan 312 cultivation with highest incremental benefit: cost ratio (3.13) and effective gain (Rs.33, 000/ha.) where as in Tentapur village HYV Swarna sub-1 gave maximum net returns of Rs. 60,960/- per ha. with highest incremental benefit: cost ratio (2.79) and effective gain (Rs.28, 620/ha.). Highest benefit cost ratio of rice observed in *var. CR-Dhan 312* (2.50) followed by *var. Swarna Sub-1* (2.35) and *var. CR-Dhan 409* (2.30). On an average, 57.6% and 53.2% yield advantage was recorded under demonstrations over existing farmers' practice in Sankilo and Tentapur villages respectively. Similarly, the group approach in vegetable farming under Nutritional Security Model has generated a total income of Rs. 6, 55,515/- out of which a value of Rs. 4,

58,861/- of vegetables used for household consumption and Rs. 1, 96,655/- of vegetables sold in open market. The nutritional benefits of the vegetable crops indicated that the intake of colocasia, ivy gourd, bitter gourd being rich source of dietary fibre, protein and other important nutrients provide essential nutrients to the family members. Hence, by adoption of cultivation of these highly nutritious vegetables can help in increasing the nutrition of the farm families. Introduction of high protein content rice varieties CR Dhan 311 (Mukul) and CR Dhan 315 added an additional protein yield of 3.26 and 3.30 q/ha to the diet of farm families. These bio-fortified varieties also help in meeting the zinc requirement of women and child with higher zinc content (20-22 ppm). Under paddy straw mushroom farming, a total yield of 651.4 kg of paddy straw mushroom was obtained with a total income of Rs. 1, 30,280/- out of which a value of Rs. 39,084/- of paddy straw mushroom has used for household consumption and Rs. 91,196/- of paddy straw mushroom sold in open market with an increase yield range from 25 to 30% over existing farmers' practice with a benefit: cost ratio of 4.21. Considering this, an Entrepreneurship Promotion Model has been designed and will be implemented in convergence mode of Institute-Industries-stakeholder's linkages. The intake of paddy straw mushroom being rich source of protein, dietary fibre and iron can help to meet out the nutrition requirement of the farm families.

Under the farm mechanization component, the drudgery of women farmers in the selected cropping pattern (Rice+ pulses+ vegetables) was identified. The perceived rate of exertion by farm women in the selected cropping pattern by using Borg scale (Rating 1-10) revealed that more than 95% had exertion range of 6-9 indicated really hard work in case of activities uprooting, thinning, weeding, ridge making, transplanting, harvesting, threshing and winnowing. Demonstrations of women friendly drudgery reducing farm tools were also conducted. The effectiveness of demonstrated drudgery reducing farm tools and implements was assessed by using drudgery assessment module. It can be revealed that during rice cultivation 69% saving in time observed by using conoweeder and dry land weeder for weeding. Similarly, 68% saving in time observed by using seed treatment drum and mandwaweeder for seed treatment and weeding and 54% saving in time observed by using fertilizer broadcaster for fertilizer application. During vegetable cultivation 70% saving in time observed by using dry land weeder and hand cultivator for weeding, 58% saving in time observed by using hand ridger for

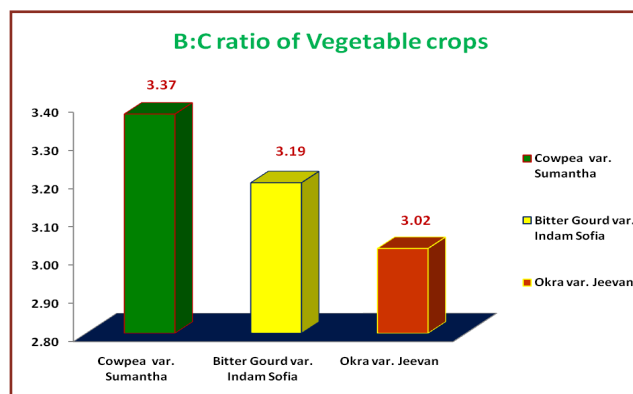
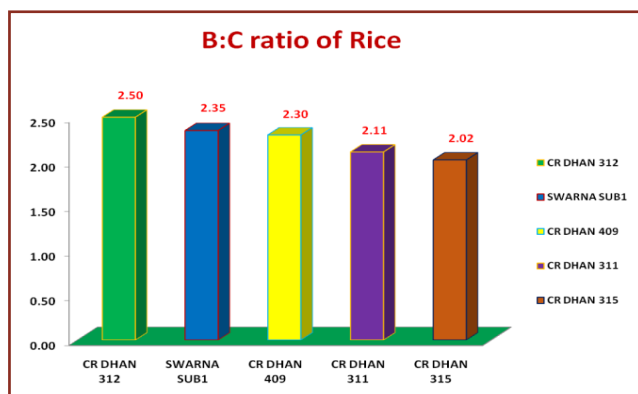


Fig. 2.14 Economic analysis of different modules



Farm women with different livelihood enhancement modules

ridge making, 56% and 55% saving in time observed by using secateurs and battery operated sprayer for cutting/pruning and spraying, respectively. The women friendly drudgery reducing farm tools improved the work efficiency; work output and decrease drudgery and health hazards of the farm women. The above such models has generated profits and awareness among the women farmer group “*Ananya Mahila Bikas Samiti*” for the cluster based production and motivated them to replicate these models in different location of the cluster which helps to promote empowerment of farm women in Agriculture.

2.2.3 Empowering farm women through climate smart intensification and diversification in minor irrigation command areas of Keonjhar District (Odisha) OIPCRA funded project (2021-24).

Investigators: Praveen Jakhar, Sabita Mishra, Sachidananda Swain and Neetish Kumar

The project is being executed in seven Minor irrigation project (MIPs) of three blocks Ghasipura, Anandpur and Harichandanpur of Keonjhar district for crop diversification and climate resilient agriculture involving farm women. The project involves trials, demonstrations and promotion of stress tolerant high yielding, nutri-rich varieties of cereals, pulses and oilseeds crops involving women farmers and women SHGs for diversification and crop intensification in command area by utilizing water from minor irrigation. A total of 8 nos. of capacity building programmes were carried out in 5 project villages involving 300 farm women on different aspect of management of the demonstration crops viz. sunflower, green gram and maize. Demonstration of climate Smart Agriculture Technologies (CSAT) using improved varieties and practices were done in an area of 110 ha involving 106 farm women beneficiaries for higher productivity and water use efficiency.



Climate resilient seed distribution to farm women

Methodology developed: A questionnaire performa based of different extension methodologies was developed and baseline survey was conducted in the project villages. The baseline survey was done to identify the available resources for agriculture and an agro ecological resource map was developed. Data collection from farm women about existing cropping system, agronomic intercultural operations,

drudgery practices and other aspects for assessing the vulnerability and climate change. Data analysis of the survey indicated that women farmers face problem of quality seeds, lacks knowledge and capacity building on processing of the farm produce as well as have poor knowledge of marketing network for realizing maximum benefits of the production system.

Table 2.19 Adoption of HYV varieties by women farmers (97 nos.) under Crop intensification demonstrations

Block	M.I.P Name	Village	Rabi area (Ha.)	Technology Demonstration
Anandpur	Chakratirtha	Kathakata	5	Hybrid Maize cultivation
			5	Sunflower square plating
		Jogiabandha	10	Maize HYV demonstration
			10	Green gram for soil fertility & nutrition
Ghasipura	Sindhei	Dhaudiha	10	Sunflower HYV demonstration
			5	Green gram HYV demonstration
			5	Maize HYV demonstration
			10	Green gram HYV demonstration
Harichandanpur	Kureijodi	Jamujodi	20	Sunflower HYV demonstration
		Manapur	10	Sunflower HYV demonstration
		Dhalapur	10	Sunflower HYV demonstration
		Dhagotha	5	Maize HYV demonstration
		Badanuagaon	5	Sunflower HYV demonstration
		Total	110 ha.	

2.3 ALL INDIA COORDINATED RESEARCH PROJECT (Women in Agriculture)

2.3.1 Promotion of gender equity through technological interventions and entrepreneurial development (2021-2026). (Research Programme 4)

- The villages have been selected for Community-based technological interventions for food, nutrition, livelihood securities and entrepreneurship development for farm women. The questionnaire has been framed and the data collected from the selected women entrepreneurs (retail stores, vegetable seller, tailor, street food vendor, fish seller, idli batter seller) households in the selected villages through well-structured interview schedule. The data related to socio economic profile like family size, age, education, occupation etc., and economic parameters like land, buildings, live stock, income, saving, income from enterprises activities, Institutional loan and training availability were collected.
- Need based assessment in the area of micro enterprise development related to agriculture and allied activities; livestock management and household based operation were also recorded. The identified small enterprises entrepreneurs and women farmers were formed into group and provided capacity building programs related to agriculture and allied activities, livestock management and household based operation.
- **Promoting entrepreneurship development in rural areas:** Awareness campaign, exhibition and capacity building training programme cum

demonstration was organized with collaboration of government and non government organization (NGO) to encourage and motivating rural women entrepreneurs in the field of food processing, food preservation, value addition, enriched nutrients through region specified foods etc.

2.3.2 Nutri-Smart Village Programme: An Innovative Model for Strengthening POSHAN Abhiyan (2021-2022) Research Programme 5)

The All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) can play a crucial role in strengthening the *POSHAN Abhiyan* by promoting good health through proper nutrition, adoption of drudgery reduction tools, psychological counselling, proper parenting and income generation through utilization of conventional agricultural resources in production of diversified value added products. To commemorate with the 75th Independence of India a programme on “Nutrition Smart Village” will be initiated to strengthen the *Poshan Abhiyan*. This new initiative aims to reach out 75 villages across India through the network of AICRP on Women in Agriculture which is in operation at 13 centres in 12 States of India besides the coordinating institute located at Bhubaneswar.

Objectives:

- Promoting nutritional awareness, education and behavioural change in rural area involving farm women and school children
- Harnessing traditional knowledge through local recipe to overcome malnutrition
- Implementing nutrition sensitive agriculture



Anthropometric measurements under NSV project

through homestead agriculture and nutri-garden

I. Assessment of nutritional status of farm families in selected villages:

- Developed the questionnaire to assess socio-economic, demographic and nutritional status of selected rural families, selected 20 per cent (Totally 200 Households) of rural families of the selected villages and collected baseline information on socio economic, demographic profile, nutrition knowledge, anthropometric measurements, dietary intake and clinical signs and symptoms of selected households.
- Built up the rapport with Department of women and child welfare, and village leaders for smooth and effective implementation of programme.
- Result found from baseline survey conducted by ICAR-CIWA AICRP Centre, GBPUA&T, Pantnagar among male respondents, maximum respondents were found to be either normal (33.33 %) or overweight (33.33 %), however, only 7.41 % respondents were found to be underweight. Among female respondents, maximum respondents were found to be overweight (43.11 %) and 12.07 % per cent respondents were found to be underweight. About 51.72 per cent women and 25.93 per cent men were suffering from abdominal obesity.

Only 1 male (03.70 per cent) and 19 female (16.38 per cent) were underweight when classified on the basis of MUAC. None of the children was stunted or wasted, however 8 children out of 27 were underweight (29.63 per cent) on the basis of weight for age criteria. All the respondents (100%) were consuming cereals/millets and oil

daily. Majority of the respondents were taking roots and tubers (88.90%), milk (88.89%) and pulses (87.78%) in their diet daily, whereas most of the respondents (68.89%) were using nuts and oil seeds rarely.

II. Establishing nutri-gardens in villages and schools:

Nutri-gardens have been established in adopted villages and in one school in each adopted village. The school children were encouraged to participate in planting the saplings and sowing seeds. Field visit and distribution of seedlings and seeds to selected farm women and farmers under Nutri sensitive farming by AICRP on WIA centre was done.

III. Promotion of mixed cropping:

In all the selected villages mixed cropping system is encouraged to follow while establishing nutrition garden in order to achieve food and nutritional security. Bio-fortification of food to combat malnutrition, method demonstrations on incorporation of millets in their daily dietaries, nutri thali, super foods for better health was encouraged and adoption of local varieties also encouraged for assuring sustainability.

IV. Conducted different Capacity building programmes under Nutri-smart Village Programme:

Different awareness/ capacity building programmes were conducted at adopted villages on importance of nutrition, establishment of nutrition garden, bio-fortification of food to combat malnutrition, method demonstrations on



Paddy straw with Mulch mat

incorporation of millets in their daily dietaries, nutritional and super foods for better health.

V. Collaboration with Ministry of Women and Child Development Department

The collaboration was done with the Ministry of Women and Child Development Department and ASHA workers also included in the programme to mitigate the health issues in the selected villages.

2.3.3 Identification, assessment, refinement/development and popularization of different gender friendly technologies for skill enhancement of farm women in different Agro-ecological regions (2021-2026) (Research Programme 5)

ICAR-CIWA, AICRP Centre, PAU, Ludhiana developed non-woven and woven paddy straw mulch mats which were spread in the fruit orchards and pots. Experiments were conducted in collaboration with College of

Horticulture and Forestry, PAU, Ludhiana. The weed growth was observed monthly and was compared with the other treatments in practice. The physical properties revealed that it had 53.93% water holding capacity while non-woven mulch mat had 89.03%. The soil composition was checked after a period of one year. It was observed that the pH was reduced to 8.0 from 8.5 with the use of different treatments. As regards the micronutrients of the soil, the amount of zinc (Zn), copper (Cu) and manganese (Mn) increased with the use of these treatments. Two technologies i.e., finger guards (*Nakhalya*) and digging tool (*Ukeri*) developed by ICAR-CIWA, AICRP Centre, VNMKV, Parbhani were tested and validated. Improved Ring cutters for vegetable harvesting were upscaled and provided to AICRP centers at Pantnagar, Hyderabad, Palampur, Udaipur and Hisar. A garlic peeling machine and an *amla* de-seeding machine were got fabricated and provided to the workers of selected food processing units by ICAR-CIWA, AICRP Centre, VNMKV, Parbhani.



3.1 Foundation Day of ICAR-CIWA (17 February, 2021)

The Institute celebrated its 26th Foundation Day through virtual platform. Director of the Institute, Dr. S. K. Srivastva welcomed all the dignitaries and participants. Hon'ble DDG (Agrl. Edn.) Dr. R. C. Agrawal was the Chief Guest. He congratulated the staff of ICAR-CIWA and stressed that as ICAR-CIWA is a unique institute, it shoulders immense responsibilities towards stakeholders. The Chief Guest also released several publications of the institute. The foundation day lecture was delivered by, Dr. Vinita Sharma, Former Advisor & Head Science for Equity, DST, Govt. of India; Former Chairperson, RAC, ICAR-CIWA, Bhubaneswar on "Gender Sensitization for nutrition sensitive agriculture". Dr. M. P. S. Arya, Former Director ICAR-CIWA, was the invited guest of the programme. Farm women from various adopted villages shared their experiences regarding the overall benefits they achieved through the collaboration with ICAR-CIWA. Director, ICAR-CIWA felicitated to Dr. M. P. S. Arya, Former Director ICAR-CIWA along with the cleaning and maintenance staff of ICAR-CIWA for their continuous service during the Covid-19 pandemic.

3.2 National Science Day (28 February, 2021)

ICAR-CIWA, Bhubaneswar celebrated National Science Day in virtual mode. On this occasion, Dr. P. P. Mathur, Vice Chancellor, Birla Global University and Former Vice Chancellor KIIT University was the Chief Guest. The programme was attended by more than 60 participants like progressive farm women, students of universities across India and Staff of ICAR-CIWA. As the program was organised in the virtual mode due to the ongoing pandemic, first time a "Virtual tour of ICAR-CIWA" was screened for the benefit of participants. Also on this occasion a first "Virtual Technology Demonstration Mela" was organised for the benefit of the farm women and students. Dr. P. P. Mathur, Chief Guest briefed about the present scenario for Indian research with context to publication and its impact. He also elaborated the past and current National Science Policy insisting

the need of increased budget and private partners in the research field. He advocated the "One Nation One Subscription" for increased access of research material. He congratulated the Institute for undertaking the huge task of working for the underrepresented section of agriculture i.e. the farm women.

3.3 International Women's Day (8 March, 2021)

International Women's Day was celebrated virtually by ICAR-CIWA under the theme "Women Leadership in Agriculture: Entrepreneurship, Equity and Empowerment". Director, ICAR-CIWA, in his address cited "Agriculture as the culture which unites our nation". He emphasized that it is important to improve the decision making ability of farm women through doubling their income in order to make the nation self reliant. He highlighted about the release of a publication compiled and published by ICAR-CIWA entitled "Women Leadership in Agriculture: Entrepreneurship, Equity and Empowerment" by the Honorable Ministers of States for Agriculture and farmers Welfare, Shri Kailash Choudhary and Shri Parshottam Rupala during the International Women's Day celebration. Mrs. Padmja Bhanu, Founder and MD of Terragreens Organic, Hyderabad was one of the invited speakers in the programme. In her speech, she called the farm women, "Unsung heroes of agriculture sector". She lauded the better position of Odisha in women empowerment owing to its culture and tradition. She detailed about her organization "Terragreens organic" which strives to revive sustainable agriculture production in India through organic farming.. Another progressive farmer Smt Kavita Umashankar Mishra from Karnataka also shared her experiences from being an Infosys employee to a Sandalwood farmer and fruit cultivator. She suggested to farm women that it is always better to go for integrated farming involving agriculture, horticulture, agroforestry, animal husbandry, and floriculture to reduce the cost of cultivation. Ms Pinaki Parimita, a successful women entrepreneur from Astaranga, Puri, Odisha shared her journey to be an

entrepreneur in value added fish products under the guidance and technical backstopping from ICAR-CIWA. Director ICAR-CIWA felicitated her.

3.4. World Water Day (22 March, 2021)

World Water Day was celebrated at ICAR-CIWA on 22 March 2021 on the theme “Valuing water”. A series of activities were conducted to celebrate the day involving students, farm women, scientists, administrative, technical staffs, staffs of 13 AICRP (HS) centres across India. A quiz competition was conducted involving students of two schools namely Model public school and Govt. Nodal high school, Baramunda Bhubaneswar following COVID guidelines. Similarly, in ICAR CIWA an essay competition was held among staffs member with the theme “Gender mainstreaming in water management”. A webinar was organised where about 55 participants actively participated in the celebration programme. Dr. Narayan Sahoo, Eminent Expert (Water management) emphasized on the importance rain water harvesting, water conservation structures, global water demand and its solutions, water use efficiency of crops, bonding and gully control structures etc. in the projected villages of Odisha. Dr. Deepak Das, Associate Professor, Water and Land Management Institute (WALMI), Bhubaneswar emphasized on water and climate change, future water availability and its solutions to curb the effect of water crisis etc.

3.5. International Day of Yoga (21 June, 2021)

Yoga is an ancient Indian practice that helps in maintaining physical and mental well-being, and over the years, it has found popularity in other countries as well. In 2014, Prime Minister Narendra Modi in his address at the UN General Assembly proposed marking a day as the International Day of Yoga and the proposal was endorsed by 175 member states, post which the United Nations recognized June 21 as the day to celebrate

Yoga. Addressing the nation on International Yoga Day 2021, Prime Minister Shri Narendra Modiji stressed the benefits of yoga and announced that India, along with United Nations and WHO, is launching an app called M-Yoga aiming to provide easy access to Yogic practice all over the world. Due to the highly infectious nature of the virus causing COVID-19, the International Day of Yoga (IDY) on 21st June 2021 was celebrated by the staff members of ICAR-Central Institute for Women in Agriculture, Bhubaneswar at home around the themes “Yoga for Wellbeing” individually or with family within the confines of their homes. The Common Yoga Protocol to be followed was circulated to all the staff. All the staff members actively performed the Common Yoga Protocol either individually or with family within the confines of their homes at 7:00 A.M.

3.6. Parthenium Awareness Week (16th to 22 August, 2021)

Parthenium awareness week was celebrated at ICAR-CIWA involving wide range of activities to spread maximum awareness among staff members, farm and campus workers as well as farm women in different project villages. The scientific and technical staff attended a lecture (virtual) on “*Parthenium weed problem and its management at the global level*” by Dr. Steve W. Adkins, Professor of Plant Physiology, University of Queensland, Australia on 16-08-2021 on launching of Parthenium Awareness Week. All the staff members of the institute actively participated in Parthenium eradication drive by removing the weeds present outside the institute. The ICAR-CIWA campus and farm area are approaching to achieve Parthenium free campus. To spread the awareness in adopted villages on 21-08-2021 a field programme for mass awareness was organised in Erada village of Jagatsinghpur district involving school children and farm women.



Mass awareness programme in village



World water Day Quiz in School



Celebration of Mahila Kisan Diwas at Balipatna, Odisha

3.7. Mahila Kisan Diwas (15 October, 2021)

ICAR-CIWA celebrated “Mahila Kisan Diwas” in collaboration with Radio Kisan, Balipatna, Khordha. The theme of the programme was “Equity and Empowerment”. The programme started with welcome address by Shri B. C. Behera. Shri P. K. Datta, Chairman, Radio Kisan, Balipatna, Khordha has graced the occasion as Chief Guest. In his speech, he highlighted the important roles played by the women in crop production, household chores and economical activities for the betterment of the livelihood of farm women. Dr. Ananta Sarkar narrated the objective of the women in agriculture day and emphasized about how gender equity will lead to empowerment of women in agriculture and finally the sustainability in the agricultural production system to meet the future needs of the country. Two progressive farm women Smt. Jhili Bhoi and Smt. Santilata Chinera of Majhihara and Italanga village graced the occasion as Guests of Honours and shared their experience on how they got success in farming and need of different entrepreneurial activities of the locality. Dr. D. N. Sarangi and Mr. B. C. Behera organized the training on homestead nutrition garden & mushroom cultivation, back yard poultry, vegetable cultivation, vermin-composting, organic manure preparation for the Gosthis of their economic empowerment. On the occasion 120 farm women of villages Majhihara, Guapur, Italanga and Athantara participated. At the end 100 numbers of winter season vegetable seed kit were distributed to the farm women.

3.8. World Food Day (16 October, 2021)

The ICAR-Central Central Institute for Women in Agriculture, Bhubaneswar virtually celebrated the “World Food Day” with the theme of the programme is “Safe Food for a Healthy Tomorrow”. At the outset,

Dr. Lipi Das, Principal Scientist and Nodal, World Food Day welcomed all. Highlighting on importance of World Food Day and the significance of this year’s theme of World Food Day. She also stressed upon the role of farm women in ensuring nutritional security by production of targeted Nutri-cereals (nutrition-rich crops) such as millets and promotion of homestead gardens and diversification of agriculture production. In the introductory remarks, Dr. Anil Kumar, Director, ICAR-CIWA briefed about the history and importance of celebrating World Food Day and the major objectives of celebrating this day. He threw light upon the challenges faced by our Nation regarding malnutrition among women and children. He also stressed that our technologies should reach out to the farm women for their nutritional empowerment. Dr. O. N. Singh, Vice-Chancellor, BAU, Kanke, Ranchi graced the programme as Chief Guest. He shared his views about ‘Ensuring Nutritional Security through bio-fortification’. He emphasized that by empowering women in agriculture and improving their access to technologies and services can bring extraordinary changes in the present agricultural production scenario of the country. At the end of the programme, Dr. B. Sahoo, Principal Scientist of ICAR-CIWA on the behalf of organizing committee, proposed vote of thanks. About 100 participants participated in the programme.

3.9. Vigilance Awareness Week (October 26 to 1 November, 2021)

ICAR-Central Institute for Women in Agriculture, Bhubaneswar has observed the Vigilance Awareness Week-2021 with a theme of ‘Independent India @ 75: Self Reliance with Integrity’. Dr. Anil Kumar, Director, ICAR-CIWA administered the vigilance pledge to all the staff members on 26.10.2021 and explained

importance of the events. The Administrative Officer shared the information about house keeping activities of the institute. ICAR CIWA Organized Gram Shabha on 27th October, 2021 in which Sarpanch had discussed about 'Transparency in Implementation of Government Aids / Schemes in Panchayat level. For the staff of the institute, a Seminar Talk was organized on 'Good Governance through Preventive Vigilance by Mr. V. Ganesh Kumar, Senior Administrative Officer of ICAR-NRRI, Cuttack on 29.10.2021. For more publicity and sensitization among citizens, messages on Vigilance Awareness Week-2021 were transmitted through Whatsapp, ICAR CIWA Facebook and Twitter and a hand out was shared with the staff members. The activities like Debate and Quiz competitions were organized for the staff on 28th October, 2021 and 1st November, 2021 respectively. The valedictory function was conducted on 1st November, 2021 in which the Vigilance Officer Dr. Sabita Mishra had highlighted the importance of integrity of an individual for development of a nation and for eradication of corruption. The winners of various competitions were awarded certificates during the celebration.

3.10. Launching of Nutrition Smart Villages (10 November, 2021)

To commemorate 75 Years of India's Independence,

a Programme on "Nutrition Smart Villages: An Innovative Model for Strengthening POSHAN Abhiyan" was launched by Hon'ble Minister of Agriculture & Farmers' Welfare, Shri Narendra Singh Tomar at New Delhi on 10.11.2021. In his address, Shri Tomar expressed his concerns about the problem of malnutrition as a major challenge that needs to be dealt with effectively and efficiently. The Union Minister stressed on ensuring the good health of mothers, as they are the pillars of a stronger society and the nation. Union Minister also emphasized the incorporation of coarse grains in the public distribution system along with wheat and rice. Shri Kailash Choudhary, Union Minister of State for Agriculture & Farmers' Welfare outlined the Government of India's various Schemes and Policies that are aimed at benefiting and doubling the farmers' income. The Minister accentuated on making the concerted efforts to make nutritious foods available in each person's reach. Mrs. Shobha Karandlaje, Union Minister of State for Agriculture & Farmers' Welfare was also present during the occasion.

Dr. Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) highlighted the release of ICAR, New Delhi's developed 85 Bio-fortified varieties by the Prime Minister that will strengthen the Government of India's POSHAN Abhiyan. The Director General urged



Vigilance awareness week



Launch of NSV programme

for including the research and technologies developed in the agriculture sector in the school curriculum. Dr. Mohapatra stated about the ICAR-CIWA, Bhubaneswar, Odisha that has been given the responsibility to empower the farm women on the various aspects of benefits of nutrition for their good health. Dr. R.C. Agrawal, Deputy Director General (Agricultural Education) highlighted about the implementation of the programme in 75 Villages situated in 23 Districts of 13 States through the Network of ICAR-AICRP on Women in Agriculture besides, the Coordinating Institute located at Bhubaneswar, Odisha. The Dignitaries also released the various publications on *Technology Profile of Food Products*, Technical Bulletin on Work Participation & Women in Agriculture in India and Gender Sensitive Agri-Horti Cropping System Model for addressing livelihood, nutrition and entrepreneurship. Nutri products containing Millets-based low glycemic index multigrain mixed for prevention of diabetes, Millets-based nutri-dense multi-grain mix for management of under-nutrition and Millets-based high fibre multi-grain mix for management of obesity, etc., were released during the occasion.

3.11. Agriculture Education Day (3 December 2021)

Agricultural Education Day was celebrated at Bidyadharpur village, Satyabadi Block, Puri District. The celebration was organized to commemorate the birth Anniversary of Dr Rajendra Prasad, the first President of independent India. The celebration was organized in collaboration with Nilachal Krushak Sanghatan, Puri and Mahila Vikas Sanghatan, Puri. Dr Anil Kumar, Director, ICAR-CIWA was the Chief Guest of the programme. Dr



Celebration of Agri. Education Day

Ananta Sarkar, Principal Scientist, ICAR-CIWA and Co-Nodal Officer welcomed the Chief Guest, other dignitaries and farm women to the function. Dr Tanuja S. Scientist, ICAR-CIWA, Nodal Officer highlighted the importance of the day and the contribution of Dr Rajendra Prasad to the Agricultural education system of India. Dr Anil Kumar, Director, ICAR-CIWA, stressed upon the need for promoting agricultural education among students as well as farmers for agricultural prosperity of the country. He reiterated that agriculture is the backbone of the country and farm women are the indispensable part of Indian agriculture. He highlighted on the contributions of ICAR-CIWA in gender mainstreaming and women empowerment. A quiz competition was conducted for the students by the ICAR-CIWA team and the winners were felicitated. Critical inputs in the form of vegetable kits were distributed to 45 SC farm women as an initial step towards establishing nutrition gardens in their backyards for addressing nutritional insufficiency of rural families. About 200 farmers and students including 110 farm women participated in the programme. Vote of thanks was proposed by Dr D.N. Sadangi, Technical Officer, ICAR-CIWA.

3.12. Women in Agriculture Day (7 December, 2021)

Women in Agriculture Day was celebrated at Taraboisan village of Ichchupurgram panchayat in Nimapara block of Puri district. Dr. Sanjay Mohanty, senior scientist and Head, KVK Sakhigopal, Puri was the Chief Guest at the programme. About 100 farm women from nearby villages participated in the programme. Mrs Geeta Saha, Technical Officer welcomed all the dignitaries, participants and briefed about the importance of celebration of Women in Agriculture Day. Chief Guest, Dr. Sanjay Mohanty,



appreciated the effort of ICAR CIWA in its endeavor for empowering farm women in the country. Dr. (Mrs.) Jyoti Nayak, emphasized the importance of balanced diet to overcome malnutrition and advised the participants to raise nutritional garden in their backyard. Dr. Praveen Jakhar, highlighted about the importance of organic farming. Dr. Sachidananda Swain farmwomen about the various women related govt. schemes for income generation and encouraged the farm women to establish enterprises to become self dependent.

3.13. World Soil Day (7 December 2021)

World Soil Day was celebrated at Taraboisan village of Ichchupur gram panchayat in Nimapara block of Puri district. Dr. Sanjay Mohanty, Senior Scientist and Head, KVK-OUAT, Sakhigopal, Puri was the Chief Guest of

the programme. About 100 farm women from nearby villages participated in the programme. Dr. Mohanty appreciated the efforts of ICAR-CIWA for its endeavour in empowering farm women of the area. Dr. (Mrs.) Jyoti Nayak, Principal Scientist, ICAR-CIWA stressed on the importance of soil testing and organic farming among farm women. Dr. S. Swain highlighted about soil health card scheme and its application. Dr. (Mrs.) D. Paramjita, KVK-OUAT, Sakhigopal emphasized on the recycling of farm waste and its decomposition. This was followed by the frontline demonstration on soil sample collection for fertility analysis and soil moisture measurement using modern tools developed by ICAR. Dr. Praveen Jakhar and Er. P. K. Rout gave a stepwise procedure for both the demonstrations. After the completion of the programme, farm women showed their interest soil sample testing regularly.



Soil moisture indicator demonstration



World Soil Day programme

Table 3.1. Details of events and days celebrated

Sl. No.	Programme	Date	Participants		Nodal officer/ Team
			Women	Men	
1	ICAR-CIWA Foundation Day	17 February 2021	75	35	Jyoti Nayak
2	National Science Day	28 February 2021	60	-	Chaitrali S. Mhatre
3	International Women's Day	8 March 2021	30	15	Tanuja S. , Neetish Kumar
4	World Water Day	22 March 2021	55	-	S Swain
5	International Yoga Day	21 June 2021	20	16	A. K. Panda
6	Parthenium Awareness Week	16-22 August 2021	50	40	P. Jakhar
7	Mahila Kisan Diwas	15 October 2021	120	0	A.Sarkar, D. N. Sarangi, B. C. Behera
8	World Food Day	16 October 2021	55	45	Lipi Das
9	Vigilance Awareness Week	26 October 2021 to 01 November 2021			Sabita Mishra
10	Launching "Nutrition Smart Villages" programme	10 November 2021	115	30	Jyoti Nayak
11	Agricultural Education Day	3 December 2021	110	90	Tanuja S. , A. Sarkar, D. N. Sarangi
12	Women in Agriculture Day	4 December 2021	65	25	Jyoti Nayak
13	World Soil Day	7 December 2021	80	20	P. Jakhar, Jyoti Nayak, S. Swain, P.K. Rout
		Total	835	316	
		Grand Total	1151		

4

REVIEW MEETINGS

4.1 Research Advisory Committee Meeting (28-29 April, 2020)

The 21st Meeting of Research Advisory Committee (RAC) of ICAR-CIWA was held during 28-29 April, 2021 in virtual mode in which 14 Scientists of ICAR-CIWA and 82 scientists under AICRP (WiA) participated in the meeting besides the RAC Members. Dr. V. N. Sharda, Chairman, RAC and Ex-Member, ASRB, New Delhi commended the Institute for its past achievements being a unique and premier institute in the field of women empowerment in Agriculture. The RAC members advised the scientists to establish complete synchronization between ICAR-CIWA and AICRP (WIA) in research and extension activities through common mandate and programmes in order to generate the national level database. ICAR-CIWA should take the lead in identifying the women friendly technologies, establishment of linkages with SAUs, KVKs, NGOs for technology dissemination and popularization on pan India basis. Director, ICAR-CIWA presented the salient achievements in the past and the future perspectives of ICAR-CIWA. The modified new project proposals of ICAR-CIWA and AICRP (WIA) under programme mode were also presented. After discussion, deliberation and modus operandi Halics of various research works along with future perspective of ICAR-CIWA, the committee made various recommendations. Director, ICAR-CIWA expressed his sincere gratitude to the RAC Chairman and Members for showing their concern for the Institute and offering constructive suggestions for strengthening the ongoing research and extension activities of the Institute and setting guidelines and impetus required for research in its future programmes. RAC suggested the scientists to work for addressing the national mandate of the Institute and women empowerment issues as enshrined in Sustainable Development Goals (SDGs).

4.2 Institute Research Council Meeting November 20, 22 and December 9, 2021)

The 21st Institute Research Council (IRC) Meeting of ICAR-Central Institute for Women in Agriculture, Bhubaneswar was held on November 20, 2021; November 22, 2021 and December 9, 2021 to review the new project proposals, progress of ongoing research projects and discuss the future course of action. At the outset, Dr. A. K. Panda, Member Secretary and Nodal, PME Cell welcomed Dr. P. S. Pandey, ADG (EP&HS), ICAR; Dr. Anil Kumar, Director & Chairperson (IRC) and the Members of the Institute Research Council and briefed about the ongoing research activities of the Institute. He informed the house about the significant progress made by the Institute during the last one year. Dr. Anil Kumar, Director (ICAR-CIWA) and Chairman (IRC), in his address, appreciated the effort made by the 21st RAC and informed the house about the projects being undertaken in the Institute under the five approved programmes. He highlighted that as a follow up to the recommendations of the RAC, work has already started to evaluate five policies/ missions viz. MIDH, MKSP, ATMA, Dairy & Poultry Entrepreneurship Development Scheme and Agricultural Mechanization & Drudgery Reduction at national level. He further informed about the significant efforts made by the council for launching the Nutri Smart Village Programme. He mentioned that the SCSP programme is being made more scientific and a database of beneficiaries has already been generated for the SC farm women. Dr. P. S. Pandey, ADG (EP&HS) appreciated the efforts made by the scientists for increasing the visibility of the Institute. He urged the scientists to research on national priority focusing the mandate of the Institute and to work in programme mode following the recommendations of the QRT, RAC and IRC. Thereafter, the presentations of the new projects were made under five programmes. This was followed by discussion on each project. The research achievements of the ongoing projects for the period of April 2020 to March 2021 were also reviewed.



5

EXTENSION PROGRAMMES

5.1 Mera Gaon Mera Gaurav (MGMG)

The flagship programme aimed at creating awareness among farmers about the organization and their programmes, schemes and policies related to the farming sector. Keeping in line with the established norms and guidelines for management of pandemic total of 12 visits were made during 2021 to 12 adopted villages by the 4 scientific teams of ICAR-CIWA, in various blocks like Nimapada, Nischintakoili, Pipli from Cuttack and Puri districts of Odisha. During the visits various gothis or interface meetings with the women farmers was also conducted on various topics such as bee keeping, hygienic fish drying through solar trays, preparing mineral mixture and fodder silage for cattle, vermicompost production, mushroom cultivation, pest management in vegetables, value chain in rice and fish, post harvest management of fish, poultry, goat farming, etc.

Interface/Goshtis/Awareness

During the visits interface between scientists and women farmers was conducted on various range of topics like drudgery in farming activities, physical wellbeing and nutrition for family, nutria kitchen gardens, livelihood opportunities in agriculture in the post Covid scenario, improved package of practices for higher income through backyard poultry farming, farm mechanization for drudgery reduction and women empowerment. Under the banner of *Azadi ka Amrut Mahotsav* interface programs like “value chain in rice and fish farming for economic empowerment of rural women” and farm mechanization for women empowerment under SCSP program” were also organized. More than 600 women farmers participated in the programmes conducted by the 4 scientific teams of ICAR-CIWA in over 12 different adopted villages.

Training /Demonstrations

In order to increase the efficiency of the women farmers in adopted MGMG villages hands on training and live demonstrations were also conducted in 12 different villages in Cuttack and Puri districts

of Odisha. A total of 10 number of training and demonstration were organized in the adopted villages over various subjects including bee keeping, aquaculture and post-harvest processing as livelihood option, hygienic fish drying through solar trays, preparing of mineral mixture and fodder silage for cattle from green fodder, improvement of quality in poor paddy straw fodder through urea ammoniation vermicompost production, mushroom cultivation, pest management in vegetables, backyard poultry farming using various poultry equipments, etc. the trainings and demonstrations prove to be very useful and powerful tool of learning for the participants.

Other Activities

While the activities reported above has been organized by ICAR-CIWA, some interaction and interface programs were organized under the banner of *Azadi ka Amrut Mahotsav*. While most of the inputs distributed to facilitate women farmers were done under SCSP programme where 6 villages were covered. Various online seminars, webinars and meetings were organized by the during special days like, International Womens Day and Foundation day of the Institute, women farmers from MGMG adopted villages have joined the programmes through internet medium using platforms like zoom, webex etc.

5.2 Swachha Bharat Abhiyan (SBA)

The Swachha Bharat Abhiyan was integrated with technology transfer programmes of the institute in PAN India mode to create awareness campaign in adopted villages involving farm women and farmers, youth etc. Swachhta Pakhwada campaign was organised in the institute during 16-31 December, 2021 in which the importance of cleanliness, sanitary measures, proper disposal of garbage, natural farming, plantation of tree and avoiding single use of plastic was highlighted. The basic maintenance works such as stock taking on digitization of office records/e-office implementation cleanliness drive including cleaning of offices, corridors and premises

was reviewed and weeding out old records, disposing of old and obsolete furniture's, junk materials and white washing/painting was also carried out. The digitized documents including research articles have also been uploaded in KRISHI portal. The e-office work was also regularly monitored with digital/cashless transactions, and e-procurement through CPP portal. The non biodegradable waste (packaging materials of fertilizers, pesticides, seed) from the field was properly disposed with safety measures. Non degradable waste was segregated and biodegradable waste (leaves, cuttings, grasses, weeds, crop residues) was used for vermicomposting inside NADEP pit. The waste management and utilization of organic wastes by composting of kitchen and home waste materials inside the campus and surroundings was also undertaken in residential colonies of institute. A campaign on cleaning of sewerage and water lines, awareness on recycling of waste water was also done in office and residential complexes to ensure smooth flow of the sewage water.

Besides cleaning activities at the institute, various cleanliness and sanitation drive were organized in MGMG and project villages to create awareness among farm women through SHG on the harmful effects of single use plastics on the environment and health. A debate competition on the topic "Swatchh Bharat, Swastha Bharat" was organized among the staff of ICAR-CIWA. The drawing and essay competitions were organized on "Role of Women in Swatchata" among women and children in MGMG villages, Chitra and Sagada of Nimapara block in Puri district of Odisha. During the Pakhwada, Kisan Diwas was celebrated by institute at Nimapara, Puri, Various inputs like assorted seeds of seasonal vegetables were distributed among farm women for setting homestead gardens. A sanitation campaign was also organized in Gadachandapur village of Nimapada, Puri on 24th December in which farm women were motivated to maintain a pollution free environment by using eco-friendly and biodegradable items. As a cleanliness activity, village roads were cleaned and a rally was done in the village with the placards highlighting clean and green environment. The cleaning of public places, community market places

or nearby tourist spots was also undertaken at Tarini Haat, Bharatpur displaying the banner and placards creating mass awareness.

A competition on essay writing and drawing competitions, in 3 MGMG villages of Puri, was organized with the theme "Swachha Bharat". Visits to waste disposal sites and cleaning and creating awareness on treatment and safe disposal of wastes at Municipal Corporation was also persued by staff of ICAR-CIWA. The valedictory session of 'Swachhta Pakhwada 2021' campaign was observed on 31st December presided by Sh. Pratap Kishore Sahoo, Counsellor, Bharatpur, Bhubaneswar in which he appreciated the activities undertaken to keep the institute premises neat and clean along with landscaping and asthetics work and stressed upon developing awareness among people to avoid single use of plastic, open defecation and use of toilets, proper disposal of undegradable and e-waste in villages among the farming community, avoiding single use plastic items in day to day life and shared the efforts made by the Bhubaneswar Municipality corporation in keeping the city clean. Besides, Swachhata activities were undertaken in field visits, trainings, interface organised in project and MGMG villages. Dr B. Sahoo, Nodal, Swachhata coordinated the swachha Bharat Abhiyan programme round the year.

5.3 Scheduled Castes Sub-Plan (SCSP)

Scheduled Caste Sub Plan for the Scheduled Castes (SCs) was introduced in the Sixth Plan for channelizing the funds to the SC categories of farm women to avail their due share of plan benefits and outlays. The main objective of the scheme is to give a thrust to family oriented schemes of economic development of SCs below the poverty line, by providing resources for filling the critical gaps. It is necessary to ensure the economic, educational and human development as well as the security and social dignity of the Scheduled Castes, achieving equality with the society in a time bound manner. Putting in place an effective institutional mechanism for preparation, implementation and monitoring of the Sub Plan is an essential component. Since the programmes depends upon the local farm activities pattern and the economic activities and other resources available.

Under the SCSP, ICAR-CIWA focuses on SC farmwomen for technology dissemination, capacity building, input support and entrepreneurship development for the socio-economic empowerment of women in agriculture. Different teams comprising of scientific and technical staff adopted 3-4 villages and with regular interaction with farm women for different need based technological interventions which are problem solving in nature. A direct interface with women farmers was promoted to provide first-hand information and solutions developing awareness on climate change, customized services, protective measures, FPOs, SHGs, etc. Along with increasing adoption rate of newer technologies by the farming communities modern equipments are given to the farm women group for to take forward it on self – sustaining mode.

In this programme, inputs like seeds of improved varieties, farm tools and fishing nets are distributed to the SC women beneficiaries from the project

areas and adopted villages under MGMG programme. Under the SCSP program, many women friendly tools and equipments were distributed among the women farmers, like harvest bags, hand weeder, sprayers, improved sickles, seed treatment drum, mandwa weeder, cono weeder, rice transplanter (2/3 row), pedal operated thresher, hand winnower (fan model), paddy parboiling unit, rice-husk combustor, battery operated sprayer, axe, rose can, bill hook, liner/garden hoe, iron bucket, spade, crowbar, plastic milk cane, milk strainer and mineral mixture, poultry equipments, improved seeds varieties, etc. In villages Honey bee boxes were also provided for the upliftment of SC farming community and to increase their livelihood opportunities. Inputs for mushroom cultivation were also distributed. More than 1100 beneficiaries from adopted MGMG villages have been benefitted under SCSP scheme where more than 27 different technologies/tools/equipments were provided. The details of activities conducted during 2021 are listed in tabular form in training chapter.



Swacha Bharat Abhiyan



Demonstration in SCSP programme



केन्द्रीय कृषिरत महिला संस्थान में कार्यरत सभी कर्मचारियों को हिन्दी के प्रति जागरूकता और अपने दैनिक शासकीय कार्य में हिन्दी के व्यवहार को प्रोत्साहित करने के लक्ष्य को लेकर दिनांक 1 सितम्बर से 14 सितम्बर, 2021 तक हिन्दी चेतना पखवाड़ा का आयोजन किया गया। इसका शुभारंभ तथा समापन समारोह का आयोजन संस्थान के निदेशक महोदय की अध्यक्षता में आयोजित किया गया। इस दौरान हिन्दी में किस तरह कार्य करेंगे तथा अपने कार्य में कैसे अधिक से अधिक हिन्दी को प्रयोग कर सकते हैं, इस बारे में अवगत कराया गया। मुख्य अतिथि डा. अनिल कुमार ने अपने वक्तव्य में हिन्दी की सराहना की और अपने उद्बोधन में सरकारी भाषा नीति का उपयुक्त प्रयोग; कार्यान्वयन और अनुपालन की जिम्मेदारी को निष्ठा के साथ करने को प्रोत्साहित किया और हिन्दी संबंधित प्रावधानों को सरलता से व्याख्याण किया। उन्होंने भी अपने तरफ से कर्मचारियों को दैनिक कार्यों में हिन्दी कि अधिक से अधिक प्रयोग करने के निर्देश दिये। कार्यक्रम के शुभारंभ में राजभाषा प्रभारी अधिकारी श्रीमती गीता साहा ने मुख्य अतिथि डा. अनिल कुमार,

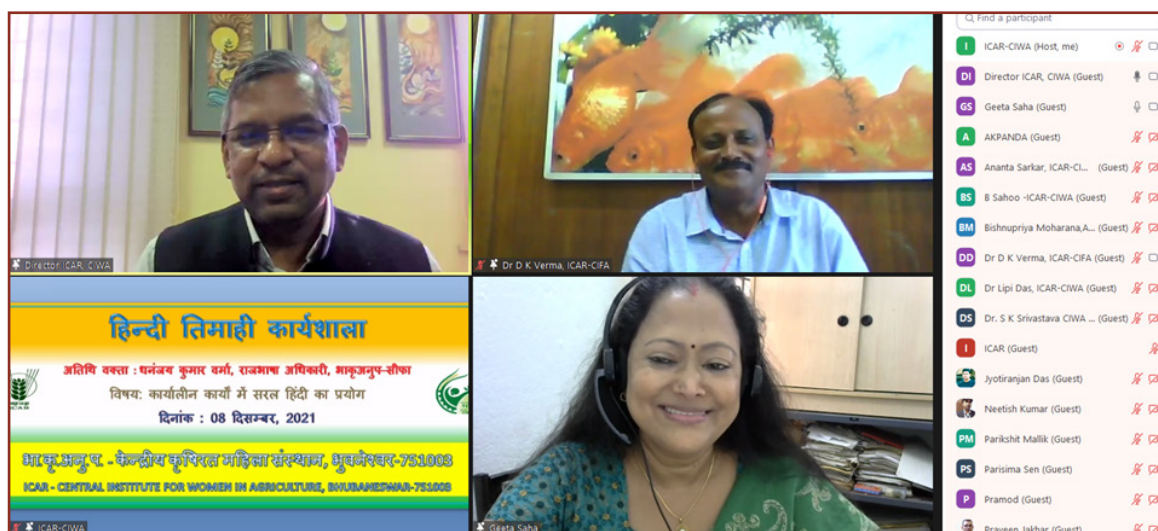
निदेशक, भा. कृ. अनु. प. - केन्द्रीय कृषिरत महिला संस्थान का स्वागत किया और साथ ही संस्थान के सभी वर्गों के कर्मचारियों का भी अभिनंदन किया। अपने स्वागत भाषण में उन्होंने हिन्दी की अहमियत को प्रमुखता से वर्णन किया और कैसे हिन्दी भाषा के माध्यम से समस्त देश को जोड़ने का काम करती है उस पर भी चर्चा की। उन्होंने आगे अपने भाषण में हिन्दी का प्रचार प्रसार को बढ़ावा देने के लिए सभी कर्मचारियों को अपने दैनिक कार्यों में हिन्दी का प्रयोग करने के लिए प्रोत्साहित किया। उन्होंने हिन्दी चेतना पखवाड़ा के दौरान आयोजित होने वाले सभी प्रतियोगिताओं और कार्यक्रम का भी उल्लेख किया। हिन्दी चेतना पखवाड़ा में कुल पाँच प्रतियोगिता और एक कार्यशाला का आयोजन किया गया, इन प्रतियोगिताओं में 35 विजेताओं को समापन समारोह के दौरान निदेशक महोदय के हाथों से पुरस्कृत किया गया। इसके अलावा संस्थान में वर्ष 2022 में चार तिमाही कार्यशाला एवं चार तिमाही बैठक का आयोजन किया गया, ताकि हिन्दी का प्रयोग अधिक से अधिक हो सके।



हिन्दी चेतना पखवाड़ा शुभारंभ



समापन समारोह के दौरान निदेशक द्वारा प्रतिभागियों को प्रमाण पत्र वितरण



हिन्दी तिमाही कार्यशाला



हिन्दी चेतना पखवाड़ा समूह चित्र

“सारे जंहा से अच्छा हिंदुस्तान हमारा,
हिन्दी है हम वतन है हिंदुस्तान हमारा

7

AWARDS AND RECOGNITION

S.K. Srivastav

- Expert Member for Career Advancement Scheme of scientists in the discipline of Agricultural Entomology for ICAR- SBI and OUAT, Bhubaneswar.
- Co-Chairman of the Technical Session during State level Workshop on Changing Scenario in use of Agrochemicals for Plant Protection organized by the Society of Plant Protection and Environment (SPPE) Bhubaneswar.
- Chairman of the Committee for Restructuring of Engineers and Diploma Engineering cadre post in DPP Section of Orissa University of Agriculture and Technology, Bhubaneswar.
- Expert for the evaluation of Ph.D. Thesis, Department of Entomology, College of Agriculture, OUAT, Bhubaneswar.
- Member of Biannual subcommittee of National Network of Plant Health Experts constituted by National Institute of Plant Health Management (NIPHM) Rajendranagar, Hyderabad. Ministry of Agriculture & Farmers Welfare, Govt. of India,
- Member of 16th Scientific Advisory Committee of KVK Mayurbhanj and KVK Jharsuguda.
- Member, Academic Council, Gandhi Institute of Engineering & Technology University (GIET University), Gunupur , Odisha.
- Delivered a lecture on *Eco and women friendly pest management practices in crops for sustainable agriculture production* during ICAR-CIWA, Bhubaneswar and MANAGE, Hyderabad Collaborative Online Training Programme on “Promoting Women Agripreneurship through Crop-Livestock-Fisheries Technologies” held during 14-18 September, 2021.
- Delivered a lecture on *In-situ composting and recycling of organic matter in organic agriculture* on 11.3.21, to the participating Students, NGOs and Farmers during online training programme w.e.f. 8.3.21 to 16.3.21 organized by Regional

Centre for Organic Farming Govt. of India, Ministry of Agriculture and Farmers Welfare. Bhubaneswar.

- Delivered a lecture on *Role of Women in Nutri Sensitive Agriculture* during the Virtual International webinar on Nutri-Sensitive Agriculture: An Approach for Food and Nutrition jointly organized by All India coordinated research project on Home science University of Agricultural Sciences GKV Bangalore and ICAR-Central Institute for Women in Agriculture Bhubaneswar on 9th March 2021 .
- Delivered a lecture on *Women farmers: Roles, responsibilities, issues, constraints & opportunities* on 23.2.2021 during collaborative training programme on Integrating gender concerns in agricultural research and extension for improving livelihood of farmwomen with MANAGE, Hyderabad w.e.f. 23-27 Feb 2021 at ICAR-CIWA.

Sabita Mishra

- Resource Person at Tata Steel Foundation to deliver a talk on ‘Women in agriculture and steps for their empowerment’ on 11.02.2021.
- Resource Person at MANAGE, Hyderabad to deliver a talk on ‘Extension strategy for engendering agriculture’ on 26.02.2021.
- Resource Person at Vigyan Prasar under Department of Science and Technology to deliver a Lead Talk entitled ‘Gender Friendly Technologies for Empowerment of Farm Women’ 24.06.2021.
- Resource Person at NIRD & PR, Hyderabad to deliver a talk on “Addressing Gender Issues in Agriculture Sector” during training programme on 11 August 2021.
- Resource Person at MANAGE, Hyderabad to deliver a talk on ‘Challenges for Farm Women at Grassroots: Lessons Learnt ‘ during National Webinar on 30 August 2021.
- Radio talk on topic *Krusha re Mahila* (O), AIR, Bhubaneswar, 21 December 2021.



A.K Panda

- Recognized in List of ICAR Researchers in Top 2% Scientists in the world for 2021 listed by Stanford University, USA.
- Innovative Article Award by Vigyan Varta: An International E-Magazine for the month of September 2021.
- Certificate of excellence in Reviewing for 2021 by the Journal of Agriculture and Ecology Research International.
- Nominated to give expert view in Odisha Livestock Master Plan conducted by International Livestock Research Institute.
- Member of International advisory Board of The Journal of Poultry Science Japan (International).
- Section editor of the Brazilian Journal of Animal Sciences (International).
- Editor of the Indian Journal of Poultry Sciences (National).
- Member, Editorial Board of Animal Nutrition and Feed Technology (National).
- Member, Editorial Advisory Board of "Amity Journal of Agribusiness (National).
- Invited speaker to Deliver presentation on "Nutrition Security and Livelihood Improvement of Farm Families through Backyard Poultry Farming" on 25th February 2021 in the training programme on "Integrating gender concerns in agricultural research and extension for improving livelihood of farmwomen" during 23-27 February, 2021 conducted by ICAR-CIWA in collaboration with MANAGE, Hyderabad
- Invited speaker to Deliver Presentation on "Oxidative Stress and gene expression" in the National Virtual Conference on "Recent Trends in Biosciences" conducted by Centurion University of Technology and Management, Odisha on 6th March 2021.
- Invited speaker to Delivered Presentation on "Quality Protein Maize as Poultry Feed" in the National Webinar on Bio-fortified Maize Prospectus in Poultry Industry conducted by ICAR-DPR, Hyderabad on 12th March 2021.
- Invited Speaker to deliver a presentation on "Nutrition -key to successful layer Production" in the National Training Programme on Nutritional Interventions for Livestock and Poultry through virtual mode by MAFSU, Nagpur from 06-08.04.2021
- Invited Speaker to deliver presentation on "Feeding Management of Broiler Birds" for the training programme on "Commercial Broiler Farming" For Prospective entrepreneurs/unemployed youths organized by VOTI, Govt. of Odisha, Bhubaneswar on 22nd and 28th June 2021.
- Invited Speaker to deliver presentation on "Feeding Management of Layer Birds for the training programme on "Commercial Layer Farming" For Prospective entrepreneurs/unemployed youths organized by VOTI, Govt. of Odisha, Bhubaneswar on 5th and 7th July 2021.
- Invited Speaker to deliver presentation on Advances in Poultry Nutrition in the interactive session for students with industry and Academia conducted by DUVASU, Mathura on 23rd July 2021.
- Invited as Chief Speaker and delivered a presentation on Food and Nutrition for Sound Health in the National Webinar on Human Health conducted by Gangadhar Meher Higher Secondary School, Sambalpur, Odisha on 9th September 2021.
- Invited Speaker to deliver presentation on Livelihood improvement and nutritional security of farmwomen through technology interventions in poultry farming on 15th September 2021 in Promoting Women Agripreneurship through Crop-Livestock-Fisheries Technologies" during 14-18 September, 2021 jointly conducted by ICAR-CIWA & MANAGE, Hyderabad
- Invited Speaker to deliver presentation on Feeding Management in Broiler Chickens" on 05.10.2021 for the training programme on " Semi Commercial Broiler Farming" For Prospective entrepreneurs/unemployed youths organized by VOTI, Govt of Odisha, Bhubaneswar.
- Invited Speaker to deliver presentation on Feeding of broiler birds for optimum production" on 17.11.21 for the training programme on "Training of Trainers - Poultry Broiler Entrepreneurship for the departmental Veterinary Officers of Govt. of Odisha organized by VOTI, Govt of Odisha, Bhubaneswar.
- Invited Speaker to deliver presentation on Poultry Nutrition for Optimum egg production o 22nd

December 2021 for Training of Trainers - Poultry Layer Entrepreneurship for the departmental Veterinary Officers of Govt. of Odisha” organized by VOTI, Govt of Odisha, Bhubaneswar.

Lipi Das

- ARRW Fellow Award by Association of Rice Research Workers, Cuttack, Odisha.
- Best Oral Presentation at ARRW Diamond Jubilee National Symposium 2021.
- Best Externally Aided Project Award by Platinum Jubilee Foundation Day Celebration of ICAR-NRRI, Cuttack.
- External Expert for CAS for Professors at DRPCA, Pusa, Samastipur.
- External Evaluator for PhD. Viva at SKRAU, Bikaner, Rajasthan.
- Vice- President, ARRW Executive Council (2022-24) at Association of Rice Research Workers, Cuttack, Odisha.
- Convener, Broad Subject Matter Area (BSMA) for Social Science (Agril Extension, Economics and Agri-Business Management), ICAR, New Delhi.
- Expert Member, Steering Committee on Biotechnology based Programme for Societal Development, DBT, Govt. of India, New Delhi.
- Reviewer, ORYZA, Association of Rice Research Workers, Cuttack.
- Reviewer, Journal of Research, GBPUA&T, Pantnagar.
- External Member, Advisory Committee, FFP, ICAR-NRRI, Cuttack.
- Expert Member, Scientific Advisory Committee Meeting of KVK, Santhapur, ICAR-NRRI, Cuttack on 22 July, 2021.
- Convener, International Webinar on “FPO: A Collective Approach in Agricultural Production system for Economic Empowerment” on 20 January, 2021 jointly by ICAR-CIWA and AICRP Centre, CAU, Tura.
- Convener, International Webinar on “Nutri-sensitive Agriculture: An Approach for Food and Nutrition Security” jointly with AICRP Centre, UAS, Bangalore on 09 March, 2021.
- Co-Convener, a National Webinar on Partnering Women in Value Chain Development: A Promising Way for Creating Sustained Livelihood and Agripreneurship on 17 March, 2021.
- Co-Convener, National Webinar on “Nutritional Security: Challenges & Opportunities on Gender Sensitive Agriculture” on 25 March, 2021.
- Expert member in Seminar on CII- Farm to Fork CII, Odisha on 11 June, 2021.
- Convener, National Webinar on “Women FPOs: An effective Approach for boosting Entrepreneurship, Empowerment and Self-reliance (Atmanirbhar)” jointly organized by ICAR-CIWA and AICRP Centre, MPUAT, Udaipur on 10 September, 2021.
- Course Director of the programme on ‘Promoting Women Agripreneurship through Crop-Livestock-Fisheries Technologies’ during 14-18 September, 2021, ICAR-CIWA & MANAGE, Hyderabad.
- Convener, World Food Day Programme, ICAR-CIWA, Bhubaneswar on 16 October, 2021.
- Coordinator, Launching Programme of “Nutrition Smart Villages: An Innovative Model for Strengthening POSHAN Abhiyan” launched by Hon’ble Minister of Agriculture & Farmers’ Welfare, Shri Narendra Singh Tomar at New Delhi on 10 November, 2021.
- Invited speaker to deliver a lecture on “Promoting Gender equity through Agriculture Value Chain” on Training Programme on “Gender Mainstreaming in Agriculture and Allied Sectors” during 22-26 February, 2021 organized by CCAS, MPUAT, Udaipur and MANAGE, Hyderabad on 24 February, 2021.
- Invited speaker to deliver a lecture on “Role of Value-Chain in improving Livelihood of Farm Women” on Training Programme on “Integrating gender concerns in agricultural research and extension for improving livelihood of farm women” during the programme organized by ICAR-CIWA, Bhubaneswar and MANAGE, Hyderabad on 26 February, 2021.
- Invited speaker to deliver a lecture on “Gender Mainstreaming: A strategic Approach for achieving gender equality and empowerment of women” on Training Programme on “Gender Equality and Empowerment of Women” during 06 March, 2021 organized by JAU, Junagadh.
- Invited speaker to deliver a lecture on “Gender Sensitive Agri-technologies to combat Post-covid



19” in National Webinar on “Resilience and cope-up Strategies in Pandemic through Agricultural Engineering Interventions: Women’s Perspective” on 09 June, 2021 organized by ICAR-CIAE-RC, Coimbatore and SEED Divison, DST, New Delhi.

- Invited speaker during the Brainstorming Session on “Gender and Nutrition Based Extension in Agriculture” by NAAS on 28 June, 2021.
- Invited speaker to deliver a lecture on “Gender Sensitive Agri-Nutri Farming System Model and Value Chain Analysis in Crop-based Farming System for Entrepreneurship” in training programme ‘Promoting Women Agripreneurship through Crop-Livestock-Fisheries Technologies’ during 14-18 September, 2021, ICAR-CIWA & MANAGE, Hyderabad.
- Invited speaker to deliver a lecture on “Gender Mainstreaming: A strategic Approach for achieving Gender Equity and Empowerment” during Celebration of Mahila Kishan Diwas on “Equity and Empowerment of Women in Agriculture” organized by ICAR-DFR, Pune on 15 October, 2021.
- Invited speaker to deliver a lecture on “Equity and Empowerment of Women in Agriculture” during Celebration of Mahila Kishan Diwas organized by KVK, ICAR-NRRI, Cuttack on 15 October, 2021.
- Invited speaker to deliver a lecture on “Income and employment generation through eco-friendly utilisation of rice straw for production of mushrooms and vermicompost” during National Symposium on Gen Next Technologies for Enhancing Productivity, Profitability and Resilience of Rice Farming, ARRW Diamond Jubilee at ICAR-National Rice Research Institute, Cuttack, Odisha on 16-17 December, 2021.

Praveen Jakhar

- Best Article of the month award for the article Natural Farming: Win-Win for Nature and Farmer in Vigyan Varta: An International E-Magazine for Science Enthusiasts for February, 2022.
- Appreciation certificate for services as Editor of Indian Journal of Soil Conservation during 2020 to 2021 for the service rendered to the Association.

- Editor, Indian Journal of Soil Conservation, India
- Privilege Member, World Association of Soil And Water Conservationists (WASWC), China
- Invited Speaker to deliver presentation on Integrated Farming System Model for Livelihood Improvement and Sustainable Development of Farm Families. Training Programme on Integrating gender concerns in agricultural research and extension for improving livelihood of farm women. ICAR-CIWA, Bhubaneswar and MANAGE, Hyderabad, 18-09-2021. (Presentation in Training).
- Invited speaker in Webinar on “Water Conservation and Management” jointly organized by NWA, Pune and WALMI, Odisha on the topic Role of Women in increasing Water Use Efficiency and Water Productivity on following dates: 12 Nov, 18 Nov, 26 Nov., 03 Dec., 10 Dec; 17 Dec 2021.
- Delivered talk on the topic *Role of Pulses in combating malnutrition* during launching of Nutri-Smart Village programme by Hon’ble Agriculture Minister under Poshan Abhiyan on 10-11-2021.

Tania Seth

- Young Scientist Award in Vegetable Science 2021” by Agro Environmental Development Society (AEDS) .
- As a part of ‘Bharat Ka Amrut Mahotsav’ delivered lecture on “ Sustainable Development Goals for Transforming Society : An Indian Perspective” on 7th July 2021.
- Convener, National Webinar on Nutritional Security: challenges and opportunities on GSA, on 25th March, 2021.

Chaitrali S. Mhatre

- Invited as expert guest speaker in Brainstorming workshop to formulate policy for development of women in agriculture for women farmers on 20th December, 2021 at Padmashree Hall, Commissionerate of Agriculture, Pune under the chairmanship of Hon’ble Minister of Agriculture, Shri. Dadasaheb Bhuse, Government of Maharashtra.



8 PUBLICATIONS

Research Papers

1. Abirami. K., S, Swain., V, Baskaran., K, Venkatesan., K, Sakthivel., N, Bommayasamy (2021). Distinguishing three Dragon fruit (*Hylocereus spp.*) species grown in Andaman and Nicobar Islands of India using morphological, biochemical and molecular traits. *Scientific reports*, 11(1): 1-14.
2. Behera, R.K., Patra, S.K., Nayak, B., Mishra, S.K., Das, L., Dash, S.S. and Adhikari, B. 2021. Perceived constraints and suggestions on implementation of BGREI programme by rice growers of Odisha, India. *The Pharma Innovation Journal*. **10**(10): 959-961.
3. Chandrakar, A., Sahoo, B., Jakkula, R., Mohanta, R.K. Narayanan K. and Garg, A.K. 2021. Response of anestrus heifers fed local grass or oak foliage-based diet with two different mineral mixtures. *Tropical Animal Health and Production*. **53**: 311
4. Das, L., Bansal, V., Panda, Pragnya. and Pattanaik, S. 2021. Coping strategies adopted by farm women during lockdown due to pandemic. *Journal of Community Mobilization and Sustainable Development*. **16** (2): 491-496.
5. Das, L., Jakhar, P., Sahu, A., Moharana, G., Panda, R.S. and S. Pattanaik. 2020. Identifying and prioritizing the critical gender gap indicators using the SHEET module. *Indian Journal of Extension Education* **56** (4): 56-62.
6. Das, L., Kavitha Kiran, V. and Tiwari, G. 2021. Assessing psychological distress of women during covid-19. *Journal of Community Mobilization and Sustainable Development*, **16**(1): 229-233.
7. Das, L., Kavitha Kiran, V. and Tiwari, G. 2021. Relationship between stress and coping strategies of women during lockdown period due to covid-19 in India. *The Pharma Innovation Journal*, **10**(6): 866-868.
8. Das, L., Mishra, S.K., Pattanaik, S. and Panda, P. 2021. Pandemic and livelihood means of farm women. *International Journal of Current Microbiology and Applied Sciences*. **10**(03): 1322-1329.
9. Das, L., Mishra, S.K., Pattanaik, S., Panda, P. and Panda, R.S. 2021. A case study on gender differentiated role analysis in rice farming in a rice intensive ecology. *Journal of Community Mobilization and Sustainable Development*. **16** (3): 707-714.
10. Das, L., Mondal, B., Mishra, S.K. and Sadangi, B.N. 2021. Incremental returns from rice cultivation through gender sensitive approaches - A vivid illustration. *Oryza*. **58**(3): 427-433.
11. Das, L., Neela Rani, R., and Bansal, V. 2021. Farm women knowledge groups (FWKGs) for enhanced use of ICT in Agriculture and Allied Sectors. *Journal of Community Mobilization and Sustainable Development*. **16**(3): 743-749.
12. Jakhar, P., Sarkar, A., Swain, S. and Sahoo, B. Crop diversification in odisha: An analysis of area dynamics with gender perspective. *Indian Journal of Agronomy*. **21** (66): 129-135
13. Jeeva, C., Jakhar, P., Mishra, S., Madhu, M., and Naik, G. B. 2022. Gender mainstreaming in tribal areas through watershed management: A pilot study from Koraput, Odisha. *Annals of Agricultural Research* **143** (1): 104-110.
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9

TRAINING AND CAPACITY BUILDING

9.1 Training/ Workshop/ Interface/ Exposure Visit/ Field Visit organized

Sl No.	Name of the Programme	Coordinators	Venue	Date	No. of beneficiaries		
					Women	Men	Total
1	Demonstration of Pineapple cultivation (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur Cuttack	4 February 2021	40	0	40
2	Demonstration of Ivy Gourd cultivation (ICAR-NASF Project)	Lipi Das	Sankilo, Cuttack	10 March 2021	20	0	20
3	Demonstration of drudgery reducing farm tools (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	10 March 2021	40	0	40
4	Workshop on improved package of practices of vegetable crops and farm mechanization (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	10 March 2021	50	20	70
5	Workshop on Improved Package of Practices of Vegetable Crops and Farm Mechanization (ICAR-NASF Project)	Lipi Das B Sahoo P. Jakhar	Sankilo, Nischintakoili Cuttack	10 March 2021	70	0	70
6	Training and capacity building programme on improved package of practices of Ivy gourd cultivation (ICAR-NASF Project)	Lipi Das	Sankilo, Cuttack	20 March 2021	20	0	20
7	Training and capacity building programme on improved package of practices of Black gram cultivation (ICAR-NASF Project)	Lipi Das P. Jakhar	Sankilo and Tentapur, Cuttack	20 March 2021	40	0	40
8	Demonstration of Paddy straw mushroom cultivation (ICAR-NASF Project)	Lipi Das P. Jakhar	Sankilo and Tentapur, Cuttack	27 March 2021	40	0	40
9	Pre kharif rice workshop and skill Upgradation programme on paddy straw mushroom cultivation (ICAR-NASF Project)	Lipi Das P. Jakhar	Sankilo and Tentapur, Cuttack	27 March 2021	40	0	40
10	Training and Capacity building programme on Improved Package of Practices of Vegetable Crops (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	7 April 2021	40	0	40
11	Crop cutting of Black Gram for yield estimation (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	17 April 2021	20	0	20
12	Crop cutting of Black Gram for yield estimation (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	19 April 2021	20	0	20
13	Training and Capacity Building Programme on Improved Package of Practices of Paddy Cultivation (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	1 July 2021	20	0	20
14	Training and Capacity Building Programme on Improved Package of Practices of Paddy Cultivation (ICAR-NASF Project)	Lipi Das	Sankilo and Tentapur, Cuttack	2 July 2021	20	0	20

SI No.	Name of the Programme	Coordinators	Venue	Date	No. of beneficiaries		
					Women	Men	Total
15	Awareness programme for farm women on various livelihood opportunities in agriculture in the post Covid scenario	A. K. Panda Chaitrali S. Mhatre P.K. Rout	Chitra, Nimapada, Puri	29 July 2021	40	0	40
16	Training and Capacity building programme on Post Harvest Management and Value addition of Mango and Pineapple(ICAR-NASF Project)	Lipi Das	Sankilo and Tentulpur Cuttack	5 August 2021	40	0	40
17	Capacity Building Programme Post-harvest Management and Value Addition of Fruits and Vegetables for Women Farmers	Lipi Das B. Sahoo S. Swain	Sankilo, Nischintakoili Cuttack	5 August 2021	70	0	70
18	Awareness programme on Prevention of nutrients loss during food preparation	Sabita Mishra B. C. Behera	Majhihara, Balipatna, Khordha	13 August 2021	55	05	60
19	National Campaign on Food and nutrition for farmers	Sabita Mishra L. P. Sahoo B. C. Behera	Guapur, Balipatna, Khordha	26 August 2021	53	07	60
20	Training and Capacity building programme on Disease and Pest Management of Rice (ICAR-NASF Project)	Lipi Das	Sankilo and Tentulpur, Cuttack	22 September 2021	40	0	40
21	Training and Capacity building Programme on Farm Mechanization (ICAR-NASF Project)	Lipi Das	Sankilo and Tentulpur, Cuttack	30 September 2021	50	15	65
22	Demonstration of drudgery reducing farm tools (ICAR-NASF Project)	Lipi Das	Sankilo and Tentulpur, Cuttack	30 September 2021	40	0	40
23	Training cum Demonstration programme on "Improved package of practices for higher income through backyard poultry farming	A.K. Panda Neetish Kumar P.K. Rout Subrat Das	Sagada, Nimapada, Puri	7 October 2021	50	0	50
24	Development of women entrepreneurship in Livestock and fisheries sector for promoting gender equity and strengthening livelihood	A. K. Panda B. Sahoo M. Prusty T.Sahoo	CDV Office, Jajpur	29 October 2021	80	0	80
25	Nutrition Smart Villages- An Innovative Model for strengthening Poshan Abhiyan	Jyoti Nayak	ICAR-CIWA, Bhubaneswar	10 November 2021	115	30	145
26	Live telecast of Hon'ble Prime Minister on Natural Farming	Tanuja S	ICAR-CIWA, Bhubaneswar	16 December 2021	100	50	150
27	Farmers -Scientists Interface on Enhancing income of rural women through improved animal husbandry practices	B. Sahoo Anil Kumar Sabita Mishra D.N Sarangi B.C. Behera	Jirabadi, Jagannath Prasad, Ganjam	22 December 2021	49	23	72
				TOTAL	1262	150	1412

9.2 Capacity building programs organized under SCSP

Sl no.	Name of the programme	Coordinators	Venue	Date	No. of Women beneficiaries
1	Demonstration and distribution of inputs- Manual sprayer, seeds at ICAR-CIWA, Bhubaneswar	Sabita Mishra J.Charles Jeeva	Village Ganeswarpur, Gop, Block Nimapara District Puri	8 February 2021	25
2	Demonstration, skill upgradation and distribution of inputs- chicks, feeder, drinker	A.K. Panda Chaitrali S. Mhatre P. K. Rout	Village Chitra, Sagada, Block Nimapara District Puri	10 February 2021	20
3	Demonstration and distribution of inputs- Chicks, feeder, drinker	A.K. Panda Chaitrali S. Mhatre P. K. Rout	Village Alipingal, Chennua, Block Nimapara District Puri	19 February 2021	15
4	Demonstration and distribution of inputs- Chicks, feeder, drinker at ICAR-CIWA, Bhubaneswar	A.K.Panda Chaitrali S. Mhatre P. K. Rout	Village -Resinga, Badamachhap Block Nimapara District Puri	10 March 2021	15
5	Demonstration and Distribution of inputs- Chicks, feeder, drinker	A.K. Panda Chaitrali S. Mhatre P. K. Rout	Village Nuagaon, Jayapur, Block Sakhigopal District Puri	22 March 2021	29
6	Management Practices in Backyard poultry for augmenting income of farm women	A. K. Panda Chaitrali S.Mhatre P.K. Rout	Village Beraboi, Balanga, Block Nimapada, District Puri	9 April 2021	10
7	FLD and awareness programme on Women friendly farm tools and equipment	Chaitrali S. Mhatre A.K.Panda P.K Rout	Village Chitra, Block Nimapada, District Puri	29 July 2021	20
8	Post harvest processing of Mushroom: A venture for livelihood upliftment of rural women	S. Swain P. K. Rout	Village Balanga, Block Nimapada, District Puri	4 August 2021	45
9	Farmers Scientists interaction meeting on protective farming	Sabita Mishra L.P. Sahoo B.C. Behera	Village Jaguleipadar, Gopinathpur, Block Kanash, District Puri	9 August 2021	100
10	Preservation of nutrients loss during food preparation	Sabita Mishra B.C. Behera	Village Majhihara, Block Balipatna, District Khordha	13 August 2021	50
11	Frontline demonstration and technology popularization Drudgery reduction and value addition through post harvest processing of food crops	S.Swain Praveen Jakhar P. K. Rout	Village Erada, Galadari, District Jagatsinghpur	21 August 2021	51

Sl no.	Name of the programme	Coordinators	Venue	Date	No. of Women beneficiaries
12	Development of nutrition garden in backyard	Sabita Mishra L.P.Sahoo B.C.Behera	Village Guapur, Majhihara, Block Balipatna, District Khordha	26 August 2021	50
13	Field day demonstration on improved package of practices for higher yield and value addition in field crops	Praveen Jakhar S.Swain	Village Iccchupur, Bidhyadharpur, Block Nimapada, District Puri	4 September 2021	51
14	Women entrepreneurship through goatery and poultry farming	Biswanath Sahoo A.K Panda	Village Khalagaon, Block Balikuda, District Jagatsinghpur	22 September 2021	81
15	Homestead gardening for enhancement of nutritional security among farm women	Sabita Mishra L.P. Sahoo B.C. Behera D.N. Sarangi	Village Majhihara, Athantara, Block Balipatana, District Khurda	23 September 2021	50
16	Women empowerment through farm mechanization	Lipi Das Biswanath Sahoo Tanuja S	Village Sankilo, Katarpada, Block Nischintakoili, District Cuttack	30 September 2021	60
17	Skill training programme on Bee-keeping	Jyoti Nayak Geeta Saha	Village Kadua, Block Satyabadi District Puri	5 October 2021	25
18	Improved package of practices for higher income through backyard poultry farming	A. K.Panda Neetish Kumar	Village Sagada, Block Nimpada, District Puri	7 October 2021	50
19	Value addition and drudgery reduction: A promising way for creating sustainable livelihood for rural women	S. Swain P K Rout	Village Nimakana, District Jagatsinghpur	8 October 2021	50
20	Training on homestead nutrition garden & mushroom cultivation, back yard poultry, vegetable cultivation, verm composting, organic manure preparation	Ananta Sarkar B.C. Behera D.N. Sarangi	Village Majhihara Block Balipatna District Khordha	15 October 2021	50
21	Women entrepreneurship through improved small scale goatery and poultry farming	Biswanath Sahoo A.K Panda M. Prusty T Sahoo	CDV Office, District Jajpur	29 October 2021	50
22	Farm mechanization for drudgery reduction and women empowerment	Chaitrali S. Mhatre Subrat Kumar Das	Village Bhatabandha, Block Nimapada, District Puri	30 October 2021	40
23	Training cum demonstration programme on mushroom cultivation	Jyoti Nayak Gita Saha	Village Kadua cluster, Block Satyabadi District Puri	24 November 2021	20

Sl no.	Name of the programme	Coordinators	Venue	Date	No. of Women beneficiaries
24	FLD on hygiene drying of fish using solar cabinet dryer	Tanuja Biswanath Sahoo	Astaranga, District Puri.	1 December 2021	21
25	Distribution of vegetable seed kits	Tanuja S. Ananta Sarkar Anil Kumar D. N. Sarangi	Village Bidyadharpur, Block Satyabadi, District Puri.	3 December 2021	51
26	Field day on drudgery reducing implements to farm women	Praveen Jakhar S.Swain	Village Baripal, Block Ghasipura, District Keonjhar	10 December 2021	52
27	Farmers -Scientists Interface on Enhancing income of rural women through improved animal husbandry practices	Biswanath Sahoo Anil Kumar Sabita Mishra D.N Sarangi B.C. Behera	Village Jirabadi, Block Jagannath Prasad, District Ganjam	29 December 2021	50
				TOTAL	1131

Internship of Students

A two months internship programme was imparted to six students of final year B.Sc. (Hons.) Agriculture students of IAS, SOADU, Bhubaneswar to gain experience and skill about various activities undertaken by the institute from 25 October to 27 December, 2021. During the training, the students were exposed to the gender issues

in agriculture, constraints and challenges for women in agriculture, drudgery reduction and occupational health hazards, womenpreneurship development in agriculture, value addition, extension strategies, Nutri-sensitive agriculture, climate smart agriculture, latest technologies for sustainable agriculture etc. The training programme was coordinated by A.K. Panda, Nodal, PME Cell of the institute.



10

HUMAN RESOURCE DEVELOPMENT

Table 10.1 Participation of Scientific and technical staff in Seminar/ Meetings/ Workshops/ Webinars

SI No	Programme	Category	Venue and organisers	Date	Attended by
1	NPS PATHSHALA	Meeting	ICAR-CIWA Bhubaneswar	5 January 2021	All Staff
2	1 st Roundtable on “Promotion of R&D Services Exports (Online)	Meeting	PSA, FIEO New Delhi	19 January 2021	Ananta Sarkar
3	International FPO: A Collective Approach in Agricultural Production system for Economic Empowerment	Webinar	ICAR-CIWA and AICRP Centre, CAU, Tura.	20 January 2021	Lipi Das
4	XIIth workshop of AICRP on ESA.	Workshop	ICAR-CIAE	27-28 January 2021	Jyoti Nayak
5	Alleviating Malnutrition and Promoting Gender Equity through Rural Poultry Production in India	National Webinar	ICAR-CIWA Bhubaneswar	3 February 2021	All Staff
6	10th Scientific Advisory committee meeting of KVK, Ganjam	Scientific Interaction	KVK, Ganjam	9 February 2021	B. Sahoo
7	Gender Mainstreaming in Agriculture & Allied Sector (Online)	Training Programme	MPUAT, Udaipur and MANAGE, Hyderabad	22-26 February 2021	Lipi Das
8	Integrating gender concerns in agricultural research and extension for improving livelihood of farm women(Online)	Training Programme	ICAR-CIWA, and MANAGE, Hyderabad	23-27 February 2021	Lipi Das
9	23 rd Annual Conference of SSCA on “Visionary Innovations in Statistical Theory and Applications (VISTA-2021)” (online)	Conference	ICAR-NAARM, Hyderabad	24 - 28 February 2021	Ananta Sarkar
10	Gender Equality and Empowerment of Woman (Online)	Training Programme	AU, Junagadh.	6 March 2021	Lipi Das
11	Virtual Conference on “Recent Trends in Biosciences”	National Webinar	CUT & M, Odisha	6 March 2021	A K Panda
12	Nutri-Sensitive Agriculture: An Approach for Food and Nutrition Security	International webinar	ICAR-CIWA Bhubaneswar	9 March 2021	All Staff
13	Centennial Symposium of 100 Years of Animal Nutrition Research in India (virtual)	Webinar	Animal Nutrition Association, India & IVRI, Izatnagar	11-12 March 2021	A K Panda
14	Bio-fortified Maize Prospectus in Poultry Industry	National Webinar	ICAR-DPR, Hyderabad	12 March 2021	A K Panda
15	Partnering Women in Value Chain Development : A Promising Way for Creating Sustained Livelihood and Agripreneurship	Webinar	ICAR-CIWA Bhubaneswar	17 March 2021	All Staff
16	Nutritional Security: Challenges & Opportunities on Gender Sensitive Agriculture	National Webinar	ICAR-CIWA Bhubaneswar	25 March 2021	All Staff
17	State level Interaction Meet	Meeting	ICAR-CIWA Bhubaneswar	4 June 2021	All Staff

Sl No	Programme	Category	Venue and organisers	Date	Attended by
18	Resilience and cope-up Strategies in Pandemic through Agricultural Engineering Interventions: Women's Perspective	National Webinar	ICAR-CIAE-RC, Coimbatore and SEED Divison, DST, N. Delhi	9 June 2021	Lipi Das
19	CII- Farm to Fork	Seminar	CII, Odisha	11 June 2021	Lipi Das
20	Gender Friendly Technologies for Empowerment of Farm Women	Webinar	Vigyan Prasar, New Delhi	24 June 2021	A K Panda Ananta Sarkar
21	Breeding For Sustainable Growth Of Poultry Industry	Webinar	Venkateshwar Hatchery Pvt. Ltd. Pune	28 June 2021	A K Panda
22	How to overcome stress by Gurudev Sri Sri Ravi Sankar	Webinar	ICAR-CIWA organized by ICAR, New Delhi	28 June 2021	Sabita Mishra
23	Gender and Nutrition based Extension in Agriculture	Brain storming session	ICAR-CIWA organized by NAAS, New Delhi	28 June 2021	Sabita Mishra
24	Entrepreneurship Development & Start-Up Ecosystem (Virtual)	Training programme	ICAR-NAARM	5-9 July 2021	Tanuja S
25	Sustainable development goals for transforming society : An Indian Perspective	Webinar	ICAR-CIWA Bhubaneswar	8 July 2021	All Staff
26	Maize & Soybeans - Market Driving Factors & Price Outlook	Webinar	CLAFMA of India	10 July 2021	A K Panda
27	Gender, Poverty and Employment (online)	Training programme	V. V. Giri National Labour Institute, Noida	12-16 July 2021	Anil Kumar Neetish Kumar Ananta Sarkar
28	Sensitization on Intellectual Property Rights in Agricultural Research and Education	Webinar	ICAR-CIWA Bhubaneswar	4 August 2021	All Staff
29	Advances in Agriculture, Environmental and Biosciences for Sustainable Development	International conferenece	AEDS, Rampur, UP	5-7 August 2021	Tania Seth
30	Farm women - Scientists Interaction on Protective Farming' at village	Interaction meeting	Jaguleipadar, Kanas, Puri organized by ICAR-CIWA	9 August 2021	Sabita Mishra
31	Opportunities in Agriculture Entrepreneurship	Seminar	DBT, ILS, Bhubaneswar	11 August 2021	B. Sahoo
32	IFS for sustainable livelihood and nutrition	National Webinar	ICAR-IIFSR Modipuram	12 August 2021	A K Panda
33	Preventive Vigilance and Departmental Enquiry: A Practical Approach	Training programme	ICAR-CIWA organized by NAARM, Hyderabad	23-24 August 2021	Sabita Mishra
34	Agriculture Online Marketing through Mobile	National Webinar	ICAR-CIWA Bhubaneswar	7 September 2021	All Staff
35	Digital Media: A powerful Tool to Empower Rural Women in Agriculture	Webinar	ICAR-CIWA Bhubaneswar	7 September 2021	All Staff

Sl No	Programme	Category	Venue and organisers	Date	Attended by
36	Women FPOs: An effective Approach for boosting Entrepreneurship, Empowerment and Self-reliance (Virtual)	National Webinar	ICAR-CIWA and AICRP Centre, MPUAT, Udaipur	10 September 2021	Lipi Das Jyoti Nayak
37	Promoting Agri preneurship through crop livestock-fisheries technologies	Seminar	MANAGE-CIWA	14-18 September 2021	B. Sahoo
38	Extension Policy	National Webinar	ICAR-CIWA organized by ICAR; IFPRI	15 September 2021	Sabita Mishra
39	Market Research and Value Chain Management of Agricultural Commodities	Training programme	ICAR-NAARM	21-25 September 2021	Jyoti Nayak
40	Mid-term Review of AICRP on ESA	Webinar	ICAR-CIAE Bhopal	22 September 2021	Jyoti Nayak
41	Prime Minister's release of ICAR Technologies	Meeting	ICAR-CIWA organized by ICAR-New Delhi	28 September 2021	All Staff
42	Alternate Cropping Systems for Climate Change and Resource Conservation	International Webinar	ICAR-IIFSR, Modipuram.	29 September to 1 October 2021	Praveen Jakhar
43	Data analysis in Social Sciences Research	Training Programme	ICAR NAARM Hyderabad	4-8 October, 2021	Praveen Jakhar
44	Webinar on ARMS	Webinar	ICAR-IASRI, New Delhi	22 October 2021	A K Panda
45	Virtual Management Development Programme (MDP) on Priority Setting, Monitoring and Evaluation of Agricultural Research Projects	Training programme	ICAR-NAARM, Hyderabad	25-30 October 2021	Lipi Das Ananta Sarkar
46	Fighting the Hunger using Smart Technology	International Webinar	ICAR-IIOR, W. Godavari, AP.	26 October 2021	Praveen Jakhar
47	Hon'ble Agriculture Minister on Special Swacchata Abhiyan	Review meeting	Ministry of Agriculture	27 October 2021	B. Sahoo
48	Advances in Agricultural Engineering: Challenges and Opportunities	Webinar	ICAR-CIAE, Bhopal	1 November 2021	Jyoti Nayak
49	Sustainable Fisheries: revolution in blue economy (Virtual)	International Symposium	Amity University	20-21 November 2021	Tanuja S.
50	Agri-innovations to Combat Food and Nutrition Challenges	International Congress	PJTSAU, Hyderabad, Telangana	23-27 November 2021	Praveen Jakhar



11

DIRECTOR'S PROGRAMMES

S. No	Programme	Mode	Date	Place
1	Dedication of ICAR Technologies to Farmers and Kritagya Hackathon Award Ceremony	Virtual	31 May 2021	ICAR ,KAB, New Delhi
2	Meeting of SFC/EFC for 2021-26	Virtual	3 June 2021	ICAR ,KAB, New Delhi
3	Workshop on EFC presentation and preparation	Virtual	4 June 2021	ICAR ,KB, New Delhi
4	Directors conference	Virtual	2 July 2021	ICAR ,KB, New Delhi
5	Collaboration Call: ICAR-CIWA and InFED-IIMN	Virtual	9 July 2021	IIM, Nagpur
6	ICAR 93 rd Foundation Day	Virtual	16 July 2021	ICAR ,KB, New Delhi
7	Foundation Day ICAR-NIAP, New Delhi	Virtual	19 July 2021	ICAR-NIAP, New Delhi
8	General Council Meeting of IMAGE	Physical	10 August 2021	Krishi Bhavan, BBSR
9	60 th Foundation Day of OUAT, Bhubaneswar	Physical	24 August 2021	OUAT,BBSR
10	CGIAR South Asia Regional Integrated Initiative "Transforming Agri-Food Systems in South Asia"(TAFSSA) consultation meeting	Physical	13 September 2021	New Delhi
11	27 th Meeting of ICAR Regional Committee No. VIII	Virtual	14 September 2021	ICAR, New Delhi
12	First Divisional Meeting of Agril.Education Divison	Virtual	15 September 2021	ICAR, New Delhi
13	Organising the programme on "Nutri Smart Villages" be launched by Hon'ble Union Minister of Agriculture in Delhi	Physical	10 November 2021	ICAR, New Delhi
14	Steering Committee meeting of the ICAR Network Programme on Precision Agriculture(NePPA)	Physical	19 November 2021	ICAR-IIWM,BBSR
15	Second Divisional Meeting of Agri. Education Division	Virtual	29 November 2021	ICAR-New Delhi
16	15 th Executive Committee meeting of MIDH(NHM)	Physical	6 December 2021	Krishi Bhavan, BBSR
17	Presentation on state plan scheme "Innovative Projects"	Physical	8 December 2021	Krishi Bhavan, BBSR
18	25 th Regional Committee Meeting No.III	Virtual	11 December 2021	ICAR-KAB, New Delhi
19	Meeting to discuss the program of Honourable PM	Physical	13 December 2021	ICAR-KB, New Delhi
20	Consultation Panel on Devising the Agri-Nutrition Road map, Govt. of India	Virtual	24 December 2021	Price waterhouse Coopers Private Limited, Kolkata.



12

RESEARCH PROJECTS

S. No	Projects	Duration	Research Programme no.	Investigators
1	Studies On Sectoral Contribution Of Women In Agriculture And Allied Sectors (AGED CIWA SIL 202000100095)	2020-23	1	Dr. Anil Kumar Dr. Ananta Sarkar Dr. Tanuja S Dr. Neetish Kumar
2	Development Of Integrated National Information System For Women In Agriculture (AGED CIWA SIL 202000200096)	2020-23	1	Dr. Ananta Sarkar Dr. Neetish Kumar
3	Gender Mainstreaming Through Govt. Schemes In Animal Husbandry Sector For Empowering Farm Women (AGED CIWA SIL 202100100102)	2021-24	1	Dr. Biswanth Sahoo Dr. Anil Kumar
4	Integrating Gender Dimensions For Improvement Of Livelihood Through Empowerment (AGED CIWA SIL 202000200097)	2020-23	2	Dr. Sabita Mishra Dr. Anil Kumar
5	Women's Empowerment Through Watershed Development Programmes In Different Agro-Ecological Regions Of India (AGED CIWA SIL 202100200103)	2021-24	2	Dr. Praveen Jakhar Dr. Sabita Mishra
6	Developing Community Seed Network In Traditional Production Systems For Sustainable Livelihood Of Tribal Women (AGED CIWA SIL 202100300104)	2021-24	2	Dr. L. P. Sahoo Dr. Praveen Jakhar Dr. Neetish Kumar
7	Assessment Of Role Of Organised Dairy Sector On Livelihood Of Women (AGED CIWA SIL 202100400105)	2021-24	2	Dr. A. Mohapatra Dr. Biswanth Sahoo Er. Chaitrali S Mhatre
8	Development Of Women Entrepreneurship In Livestock And Fisheries Sector For Promoting Gender Equity And Strengthening Livelihood (AGED CIWA SIL 202000400098)	2020-23	3	Dr. Tanuja S Dr. Arun kumar Panda Dr. Lipi Das Dr. Biswanath Sahoo
9	Entrepreneurship Development Through Value Addition And Product Diversification Of Food Crops (AGED CIWA SIL 202000500099)	2020-23	3	Dr. Sachidananda Swain Dr. Lipi Das Dr. Jyoti Nayak Dr. Tania Seth
10	Study Of Farm Equipments And Tools For Drudgery Reduction Of Women In Agriculture (AGED CIWA SIL 202000600100)	2020-23	4	Er. Chaitrali S Mhatre Dr. Jyoti Nayak
11	Designing And Development Of A Gender Sensitive Agri-Nutri (GSAN) Farming System Model (AGED CIWA SIL 201900200094)	2019-22	5	Dr. Lipi Das Dr. S. K. Srivastava Dr. Biswanath Sahoo Dr. Praveen Jakhar Dr. Tania Seth Dr. Sachidananda Swain
12	Design And Development Of Gender Sensitive Integrated Vertical Nutri-Farming System (IVNFS) For Household Nutrition And Income (AGED CIWA SIL 202000700101)	2020-23	5	Dr. Tania Seth Dr. Arun Kumar Panda Er. Chaitrali S Mhatre

S. No	Projects	Duration	Research Programme no.	Investigators
13	Assessment And Refinement Of Integrated Farming Systems In Gender Perspective In Different Agro-Ecological Regions Of India - (AGED CIWA SIL 202100500106)	2021-24	5	Dr. A. K. Panda Dr. Praveen Jakhar
14	Development Of Nutri Smart Villages For Food Security And Dietary Diversity For Combating Malnutrition (AGED CIWA SIL 202100600107)	2021-24	5	Dr. Jyoti Nayak Dr. Anil Kumar Dr. Arun Kumar Panda Dr. L. P. Sahoo Dr. Tanuja S
15	AICRP On Ergonomics And Safety In Agriculture (ESA)	2017-23	ICAR- External Project	Er. Chaitrali S. Mhatre Dr. Jyoti Nayak
16	AICRP On Women In Agriculture (WIA)	2017-23	ICAR- External Project	Dr. Anil Kumar Dr. Lipi Das
17	Women Empowerment And Gender Sensitization-Developing A Model For Bridging Gender Gap	2019-22	NASF Project	Dr. Lipi Das Dr. Praveen Jakhar Ms. Gayatri Moharana (on study leave) Mrs. Ankita Sahu (on study leave)
18	Gender Responsive Integrated Homestead Aqua-Horticulture: A Climate Resilient Approach Towards Livelihood Diversification	2021- 24	NICRA Project	Dr. Tanuja S Dr. Lipi Das Dr. Tania Seth
19	Empowering Farm Women Through Climate Smart Intensification And Diversification In Minor Irrigation Command Area Of Keonjhar District (Odisha)	2021-24	OIIPCRA Project	Dr. Praveen Jakhar Dr. Sabita Mishra Dr. Sachidananda Swain Dr. Neetish Kumar



13 PERSONNEL

14.1 Details of Staff (as on 31-12-2021)

S. No	Name	Designation
1	Dr. Anil Kumar	Principal Scientist & Director (Acting)
2	Dr. S. K. Srivastava	Principal Scientist
3	Dr. Sabita Mishra	Principal Scientist
4	Dr. Arun Kumar Panda	Principal Scientist
5	Dr. Lipi Das	Principal Scientist
6	Dr. Biswanath Sahoo	Principal Scientist
7	Dr. Jyoti Nayak	Principal Scientist
8	Dr. Ananta Sarkar	Principal Scientist
9	Dr. Laxmipriya Sahoo	Senior Scientist
10	Dr. Praveen Jakhar	Senior Scientist
11	Dr. Sachidananda Swain	Senior Scientist
12	Dr. Tanuja S.	Scientist
13	Ms. Gayatri Moharana	Scientist (On study leave)
14	Dr. Tania Seth	Scientist
15	Er. Chaitrali S. Mhatre	Scientist
16	Dr. Arpita Mahapatra	Scientist
17	Mrs. Ankita Sahu	Scientist (On study leave)
18	Sh. Neetish Kumar	Scientist
19	Sh. Shaji A.	Assistant Chief Technical Officer
20	Mrs. Geeta Saha	Technical Officer
21	Sh. Debendra Nath Sarangi	Technical Officer
22	Sh. Manoranjan Prusty	Technical Officer
23	Sh. Bhikari Charan Behera	Technical Officer
24	Sh. Bishnu Charan Sahu	Technical Officer
25	Mrs. Tapaswini Sahoo	Senior Technical Assistant
26	Sh. Sanjay Kumar Behera	Senior Technical Assistant (On study leave)
27	Er. Pragati Kishore Rout	Senior Technical Assistant
28	Er. Subrat Kumar Das	Senior Technical Assistant
29	Sh. Atul Chetan Hemrom	Senior Technical Assistant
30	Sh. Prabhat Kumar Nayak	Finance and Accounts officer
31	Mrs. Parisima Sen	Private Secretary
32	Mrs. Bishnupriya Moharana	Assistant Administrative Officer

S. No	Name	Designation
33	Sh. Parikshit Mallik	Personal Assistant
34	Sh. Jyoti Ranjan Das	Upper Division Clerk
35	Sh. Tushar Ranjan Mangaraj	Lower Division Clerk
36	Sh. Pramod Kumar Sahoo	Lower Division Clerk
37	Sh. Biswanath Biswal	Skilled Support Staff

14.2 Joining/ Transfer/Promotions

Sl. No	Name	Designation	Date	Details
1.	Dr. J. Charles Jeeva	Principal Scientist	17-02-2021	Transfer to CMFRI, RS, Visakhapatnam.
2.	Dr. Ananta sarkar	Senior Scientist	27-04-2018	Promotion to Principal Scientist
3.	Dr. Arpita Mohapatra	Scientist	04-10-2021	Transfer from CSWRI, Tonk
4.	Mrs. Usharani Maradana	Technical Assistant	27-09-2021	Transfer to CIFE, RS, Kakinada
5.	Sh. Janardan Biswal	AFAO	05-11-2021	Promotion transfer to IIWM, Bhubaneswar
6.	Sh. Prabhat Kumar Nayak	FAO	01-12-2021	Promotion transfer from NRC Pig, Guwahati
6.	Sh. Parikshit Mallik	PS	20-10-2020	Promotion to Personal Assistant



ICAR-CIWA in Press Media

ମହିଳା ସଚେତନତା ତାଲିମ ଶିବିର

ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି ଡା. ୫/୮-ଆର୍ବି ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି ବ୍ଲକ୍ କଟକପଡ଼ା ଗ୍ରାମ ପଞ୍ଚାୟତ ଅଧିନସ୍ଥ ସାଙ୍କିଲୋ ଠାରେ ଅନନ୍ୟା ମହିଳା ବିକାଶ ସମିତିର ଖାଦ୍ୟ ପ୍ରକ୍ରିୟା ସମ୍ପର୍କୀୟ ଏକ ତାଲିମ ଶିବିର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ଏହି ତାଲିମ ଶିବିରରେ ଅନୁଷ୍ଠାନର ସଭାନେତ୍ରୀ ରୁକୁଣା ନାୟକ ସଭାପତିତ୍ବ କରିଥିଲେ । ଏଥିରେ ମୁଖ୍ୟ ଅତିଥି ରୂପେ କେନ୍ଦ୍ରୀୟ କୃଷିରତ ମହିଳା ସଂସ୍ଥାନ ଭୁବନେଶ୍ୱରର ପ୍ରଧାନ ବୈଜ୍ଞାନିକ ଡ. ଲିପି ଦାସ, ବରିଷ୍ଠ ବୈଜ୍ଞାନିକ ଡ. ସଚ୍ଚିଦାନନ୍ଦ ସ୍ୱାଇଁ, ଡ. ବିଶ୍ୱନାଥ ସାହୁ, ରବିଶଙ୍କର ପଣ୍ଡା, ସୌମ୍ୟ ରଞ୍ଜନ ପ୍ରଧାନ ପ୍ରମୁଖ ଅତିଥିରୂପେ ଯୋଗଦାନ କରି ମହିଳାମାନେ ଅବଳା ବିହୁ ପୂର୍ବରୁ ଗୁଡ଼ିଚି । ମହିଳା ମାନେ ସମାଜର ମୁଖ୍ୟସ୍ତ୍ରୋତରେ ସାମିଲ ହେବା ସହ ନିଜେ ଆତ୍ମ ନିର୍ଭରଶୀଳ ହେବା ସହ ପରିବାର ଉପରେ ବୋଝ ନହେବାକୁ ଅନୁରୋଧ କରିଥିଲେ ।

ଆମ ସପ୍ତରା ,ଟମାଟୋ ପ୍ରଭୃତି ଫଳ ଓ ପରିପରିବାର ଅଭାବୀ ବିକ୍ରି ଦେଖିବାକୁ ମିଳୁଛି । ଏପରିସ୍ଥଳେ ମହିଳା ମାନେ ବଳକା ଫଳ ଓ ପରିପରିବାରକୁ ଶସ୍ତାରେ ବିକ୍ରୟ ନକରି ଖାଦ୍ୟ ପ୍ରକ୍ରିୟା କରଣ ଯୋଗେ ଏହି ଫଳ ଓ ପରିବାରକୁ ବହୁ ଦିନ ପର୍ଯ୍ୟନ୍ତ ସାଗରି ରଖି ପାରିବା ସହ ଆର୍ଥିକ ଲାଭ ଉଠାଇ ପାରିବେ ବୋଲି ମତବ୍ୟକ୍ତ କରିଥିଲେ । ଏହି ଅବସରରେ ପ୍ରଧାନମନ୍ତ୍ରୀ ନରେନ୍ଦ୍ର ମୋଦି ଦେଇଥିବା ଆହ୍ୱାନକୁ ସଫଳ କରାଇବା ନିମନ୍ତେ ସ୍ୱୟଂ ସହାୟିକା ଗୋଷ୍ଠୀର ମହିଳା ମାନେ ଧାଡ଼ିରେ ଧାନ ଚଳି ରୋପଣକରି ସମାଜକୁ ନୂତନ ବାର୍ତ୍ତା ଦେଇଥିଲେ । ଏଥିରେ ଅନୁଷ୍ଠାନର ସମ୍ପାଦିକା ମନୋରମା ନାୟକ, କୋଷାଧ୍ୟକ୍ଷା ନିର୍ମଳା ନାୟକଙ୍କ ସମେତ ସଭାମାନେ ଉପସ୍ଥିତ ଥିଲେ । ଏହି କାର୍ଯ୍ୟକ୍ରମକୁ ଅଭୟ ନାୟକ, ସଞ୍ଜନ ନାୟକ ଓ ସୁଧାଂଶୁ ଶେଖର ନାୟକ ପ୍ରମୁଖ ପରିଚାଳନାରେ ସହଯୋଗ କରିଥିଲେ ।

(Training programme on value addition of fruits and vegetables at Sankilo and Tentulpur villages of Nischintakoili block, Cuttack on 5th August, 2021 published in the Newspaper 'The Sambad')

ମହିଳା ସଚେତନତା ତାଲିମ ଶିବିର

ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି (ଭାସ୍କର ନ୍ୟୁଜ୍) : ଆଜି ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି ବ୍ଲକ୍ କଟକପଡ଼ା ଗ୍ରାମ ପଞ୍ଚାୟତ ଅଧିନସ୍ଥ ସାଙ୍କିଲୋ ଠାରେ ଅନନ୍ୟା ମହିଳା ବିକାଶ ସମିତିର ଖାଦ୍ୟ ପ୍ରକ୍ରିୟା ସମ୍ପର୍କୀୟ ଏକ ତାଲିମ ଶିବିର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ସଭାନେତ୍ରୀ ରୁକୁଣା ନାୟକ ସଭାପତିତ୍ବ କରିଥିଲେ । ଏଥିରେ ମୁଖ୍ୟ ଅତିଥି କେନ୍ଦ୍ରୀୟ କୃଷିରତ ମହିଳା ସଂସ୍ଥାନ ଭୁବନେଶ୍ୱରର ପ୍ରଧାନ ବୈଜ୍ଞାନିକ ଡ. ଲିପି ଦାସ, ବରିଷ୍ଠ ବୈଜ୍ଞାନିକ ଡ. ସଚ୍ଚିଦାନନ୍ଦ ସ୍ୱାଇଁ, ଡ. ବିଶ୍ୱନାଥ ସାହୁ, ରବିଶଙ୍କର ପଣ୍ଡା, ସୌମ୍ୟ ରଞ୍ଜନ ପ୍ରଧାନ ପ୍ରମୁଖ ଅତିଥି ଯୋଗଦାନ କରି ମହିଳାମାନେ ଅବଳା ବିହୁ ପୂର୍ବରୁ ଗୁଡ଼ିଚି । ମହିଳାମାନେ ନିଜେ ଆତ୍ମ ନିର୍ଭରଶୀଳ ହେବା ସହ ପରିବାର ଉପରେ ବୋଝ ନହେବାକୁ ଆହ୍ୱାନ ଦେଇଥିଲେ । ସାମ୍ପ୍ରତିକ ପରିସ୍ଥିତିରେ ଆମ ସପ୍ତରା ,ଟମାଟୋ ପ୍ରଭୃତି ଫଳ ଓ ପରିପରିବାର ଅଭାବୀ ବିକ୍ରି ଦେଖିବାକୁ ମିଳୁଛି । ମହିଳାମାନେ ବଳକା ଫଳ ଓ ପରିପରିବାରକୁ ଶସ୍ତାରେ ବିକ୍ରୟ ନକରି ଖାଦ୍ୟ ପ୍ରକ୍ରିୟା କରଣ ଯୋଗେ ଏହି ଫଳ ଓ ପରିବାରକୁ ବହୁ ଦିନ ପର୍ଯ୍ୟନ୍ତ ସାଗରି ରଖି ପାରିବା ସହ ଆର୍ଥିକ ଲାଭ ଉଠାଇପାରିବେ ବୋଲି ମତବ୍ୟକ୍ତ କରିଥିଲେ । ପ୍ରଧାନମନ୍ତ୍ରୀ ନରେନ୍ଦ୍ର ମୋଦି ଦେଇଥିବା ଆହ୍ୱାନକୁ ସଫଳ କରାଇବା ନିମନ୍ତେ ସ୍ୱୟଂ ସହାୟିକା ଗୋଷ୍ଠୀର ମହିଳା ମାନେ ଧାଡ଼ିରେ ଧାନ ଚଳି ରୋପଣକରି ସମାଜକୁ ନୂତନ ବାର୍ତ୍ତା ଦେଇଥିଲେ । ଏଥିରେ ଅନୁଷ୍ଠାନର ସମ୍ପାଦିକା ମନୋରମା ନାୟକ, କୋଷାଧ୍ୟକ୍ଷା ନିର୍ମଳା ନାୟକଙ୍କ ସମେତ

(Training programme on value addition of fruits and vegetables at Sankilo and Tentulpur villages of Nischintakoili block, Cuttack on 5th August, 2021 published in the Newspaper 'The Premaya')

ମହିଳା ତାଲିମ ଶିବିର

ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି, ୫/୮(ଆପ୍ରଅ) : କଟକପଡ଼ା ପଞ୍ଚାୟତ ଅଧିନ ସାଙ୍କିଲୋ ଠାରେ ଅନନ୍ୟା ମହିଳା ବିକାଶ ସମିତିର ଖାଦ୍ୟ ପ୍ରକ୍ରିୟା ସମ୍ପର୍କୀୟ ତାଲିମ ଶିବିର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ଏଥିରେ ସଭାନେତ୍ରୀ ରୁକୁଣା ନାୟକ ସଭାପତିତ୍ବ କରିଥିଲେ । ମୁଖ୍ୟ ଅତିଥି ରୂପେ ବୈଜ୍ଞାନିକ ଡ. ଲିପି ଦାସ, ଡ. ସଚ୍ଚିଦାନନ୍ଦ ସ୍ୱାଇଁ, ଡ. ବିଶ୍ୱନାଥ ସାହୁ, ରବିଶଙ୍କର ପଣ୍ଡା, ସୌମ୍ୟ ରଞ୍ଜନ ପ୍ରଧାନ ପ୍ରମୁଖ ଅତିଥିରୂପେ ଯୋଗଦେଇଥିଲେ । ମନୋରମା ନାୟକ, କୋଷାଧ୍ୟକ୍ଷା ନିର୍ମଳା ନାୟକ, ଅଭୟ ନାୟକ, ସଞ୍ଜନ ନାୟକ ଓ ସୁଧାଂଶୁ ଶେଖର ନାୟକ ପ୍ରମୁଖ କାର୍ଯ୍ୟକ୍ରମ ପରିଚାଳନାରେ ସହଯୋଗ କରିଥିଲେ ।



(Training programme on value addition of fruits and vegetables at Sankilo and Tentulpur villages of Nischintakoili block, Cuttack on 5th August, 2021 published in the Newspaper 'The Bhaskar')

ଖାଦ୍ୟ ପ୍ରକ୍ରିୟାକରଣ ତାଲିମ ଶିବିର

ଅବୁରେଶ୍ୱର, ୫/୮ (ନି.ପ୍ର) : ନିର୍ଦ୍ଦିଷ୍ଟକୋଇଲି ବ୍ଲକ୍ କଟକପଡ଼ା ଗ୍ରାମ ପଞ୍ଚାୟତ ଅଧିନ ସାଙ୍କିଲୋ ଠାରେ ଅନନ୍ୟା ମହିଳା ବିକାଶ ସମିତି ଆନୁକୁଲ୍ୟରେ ଖାଦ୍ୟ ପ୍ରକ୍ରିୟାକରଣ ନିମନ୍ତେ ଏକ ତାଲିମ ଶିବିର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ଏହି ତାଲିମ ଶିବିରରେ ଅନୁଷ୍ଠାନର ସଭାନେତ୍ରୀ ରୁକୁଣା ନାୟକ ସଭାପତିତ୍ବ କରିଥିଲେ । ଏଥିରେ ମୁଖ୍ୟ ଅତିଥି ରୂପେ କେନ୍ଦ୍ରୀୟ କୃଷିରତ ମହିଳା ସଂସ୍ଥାନ ଭୁବନେଶ୍ୱରର ପ୍ରଧାନ ବୈଜ୍ଞାନିକ ଡ. ଲିପି ଦାସ, ବରିଷ୍ଠ ବୈଜ୍ଞାନିକ ଡ. ସଚ୍ଚିଦାନନ୍ଦ ସ୍ୱାଇଁ, ଡ. ବିଶ୍ୱନାଥ ସାହୁ, ରବିଶଙ୍କର ପଣ୍ଡା, ସୌମ୍ୟ ରଞ୍ଜନ ପ୍ରଧାନ ପ୍ରମୁଖ ଅତିଥି ରୂପେ ଯୋଗ ଦେଇଥିଲେ । ସାମ୍ପ୍ରତିକ ପରିସ୍ଥିତିରେ ଆମ ସପ୍ତରା ,ଟମାଟୋ ପ୍ରଭୃତି ଫଳ ଓ ପରିପରିବାର ଅଭାବୀ ବିକ୍ରି ଦେଖିବାକୁ ମିଳୁଛି । ଏପରିସ୍ଥଳେ ମହିଳା ମାନେ ବଳକା ଫଳ ଓ ପରିପରିବାରକୁ ଶସ୍ତାରେ ବିକ୍ରୟ ନ କରି ଖାଦ୍ୟ ପ୍ରକ୍ରିୟାକରଣ ଯୋଗେ ଆର୍ଥିକ ଲାଭ ଉଠାଇ ପାରିବେ ବୋଲି ମତବ୍ୟକ୍ତ କରିଥିଲେ । ଏହି ଅବସରରେ ପ୍ରଧାନମନ୍ତ୍ରୀ ନରେନ୍ଦ୍ର ମୋଦି ଦେଇଥିବା ଆହ୍ୱାନକୁ ସଫଳ କରାଇବା ନିମନ୍ତେ ସ୍ୱୟଂ ସହାୟିକା ଗୋଷ୍ଠୀର ମହିଳା ମାନେ ଧାଡ଼ିରେ ଧାନ ଚଳି ରୋପଣକରି ସମାଜକୁ ବାର୍ତ୍ତା ଦେଇଥିଲେ । ଏଥିରେ ଅନୁଷ୍ଠାନର ସମ୍ପାଦିକା ମନୋରମା ନାୟକ, କୋଷାଧ୍ୟକ୍ଷା ନିର୍ମଳା ନାୟକଙ୍କ ସମେତ ସଭାମାନେ ଉପସ୍ଥିତ ଥିଲେ । ଏହି କାର୍ଯ୍ୟକ୍ରମକୁ ଅଭୟ ନାୟକ, ସଞ୍ଜନ ନାୟକ ଓ ସୁଧାଂଶୁ ଶେଖର ନାୟକ ପ୍ରମୁଖ ପରିଚାଳନାରେ ସହଯୋଗ କରିଥିଲେ ।

(Training programme on value addition of fruits and vegetables at Sankilo and Tentulpur villages of Nischintakoili block, Cuttack on 5th August, 2021 published in the Newspaper 'The Sambad')



Lokapala re Swachhata Abhiyan 13.10.2021

ସ୍ୱତନ୍ତ୍ର ରାଷ୍ଟ୍ରୀୟ ସ୍ୱଚ୍ଛତା ଅଭିଯାନ

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Rasriya Swachhata Abhijan 17.10.2021



Rasriya Swachhata Abhijan 17.10.2021

ସ୍ୱତନ୍ତ୍ର ରାଷ୍ଟ୍ରର ସ୍ୱତ୍ତ୍ୱ ଅଭିଯାନ

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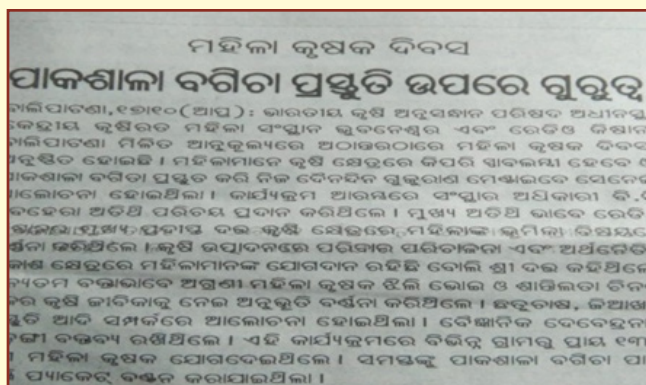
Swatantra Rasriya Swachhata Abhijan 17.10.2021



Mahila Krushak Diwas Palan 17.10.2021



Swatantra Rasriya Swachhata Abhijan 17.10.2021



Mahila Krushak Diwas 17.10.2021



Mahila Chasi Nku Prasikhvan 17.08.2021



Poshan Sachetanata Sibir 23.09.2021



Mahilanka Poshan Sachetanata Sibir 23.09.2021



Mahilanka Pain Poshan Sachetanata 23.09.2021



Poshan Sachetanata Sibir 23.09.2021



Mahilanka Poshan Sachetanata Sibir 23.09.2021



Kendreeya Mahila Krushi Gabeshana Santha Ra Survey
Repot: 30.09.2021



ମହିଳା ସଶକ୍ତୀକରଣ କର୍ମଶାଳା

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ମହିଳା କୃଷକ କର୍ମିଣୀ



■ ସତ୍ୟବାଦୀ, ଟାମ୍ବା। ୧୨ (ପି-ଏଚ୍-ଏସ୍)
 କୃଷିକ୍ଷେତ୍ରରେ ମହିଳାମାନଙ୍କୁ ସ୍ୱାବଲମ୍ବୀ କରିବା ଉଦ୍ଦେଶ୍ୟରେ
 କେନ୍ଦ୍ରୀୟ ମହିଳା କୃଷି ବିଭାଗ ସଂସ୍ଥାନ ପକ୍ଷରୁ ଶୁକ୍ରବାର
 ଏକ କର୍ମଶାଳା ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି । ପୁରୀଜିଲ୍ଲା
 ନୀଳାଚଳ କୃଷକ ମହାସଂଘର ସଭାପତି ଗୋପିନାଥ
 ମିଶ୍ରଙ୍କ ଅଧ୍ୟକ୍ଷତାରେ ଏହି କର୍ମଶାଳାରେ ଶ୍ରଦ୍ଧାଧିକ
 ମହିଳା ଓ କୃଷି ଶ୍ରମିକ ଯୋଗ ଦେଇଥିଲେ । ମୁଖ୍ୟ ଅତିଥି
 ଭାବରେ କୃଷି ସଂସ୍ଥାନର ନିର୍ଦ୍ଦେଶକ ଡଃ. ଅନିଲ କୁମାର
 ଯୋଗଦେଇ ମହିଳା ମାନଙ୍କୁ କୃଷି ଯନ୍ତ୍ରପାତି ଓ ବିହନ
 ପ୍ରଦାନ କରିଛନ୍ତି । ସମ୍ମାନୀତ ଅତିଥି ଭାବରେ ମହିଳା
 ବିଭାଗ ସଂଗଠନର ସମ୍ପାଦିକା ରାଜଲକ୍ଷ୍ମୀ ଛୋଟରାୟ,
 କୃଷକ ମହାସଂଘର ଉପସଭାପତି ନିରଞ୍ଜନ ମହାପାତ୍ର,
 ସତ୍ୟବାଦୀ ବୁଦ୍ଧ ଅଧ୍ୟକ୍ଷ ଶୁଶାନ୍ତ ଶତପଥୀ, ସୁଦାମ ଚରଣ
 ନାୟକ, ଦେବେନ୍ଦ୍ର ନାଥ ଷଡ଼ଙ୍ଗୀ ଓ ସୁଲୋଚନା ପ୍ରଧାନ
 ପ୍ରମୁଖ ମହିଳାମାନଙ୍କର ସାମଗ୍ରିକ ବିଭାଗ ସମ୍ପର୍କରେ
 ଆଲୋଚନା କରିଥିଲେ ।

ମହାନବୀର ୦୭ ଡିସେମ୍ବର

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ବାସବିଦ୍ୟାଧରପୁର ଠାରେ ମହିଳା ସଶକ୍ତି କରଣ ଶିବିର

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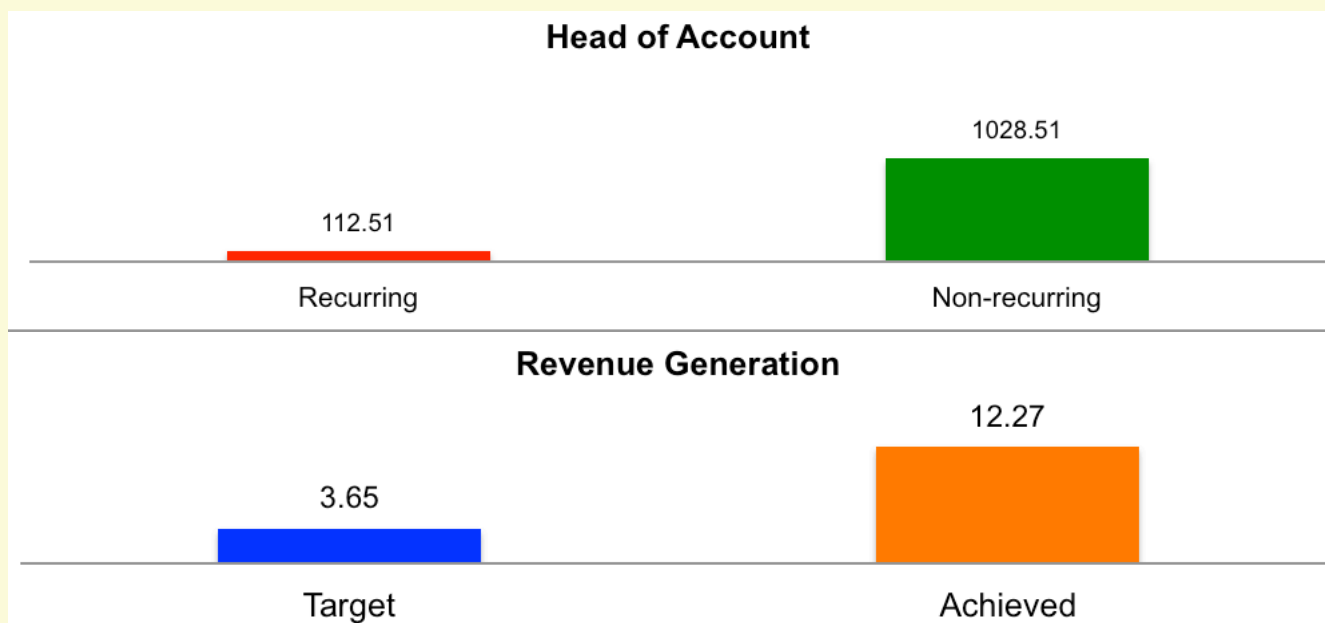
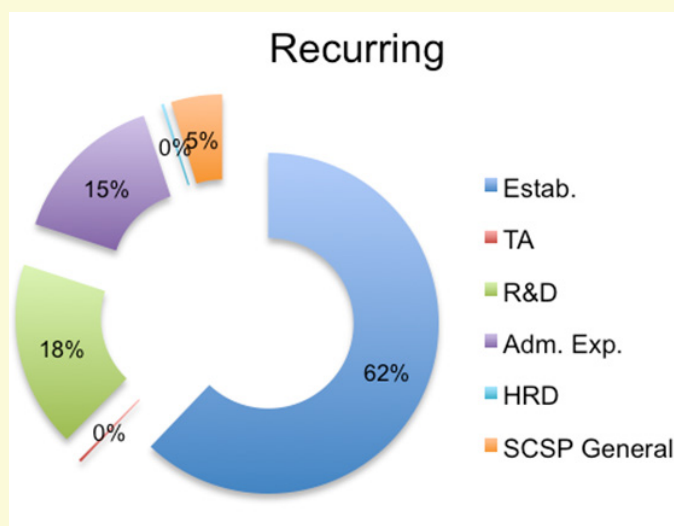
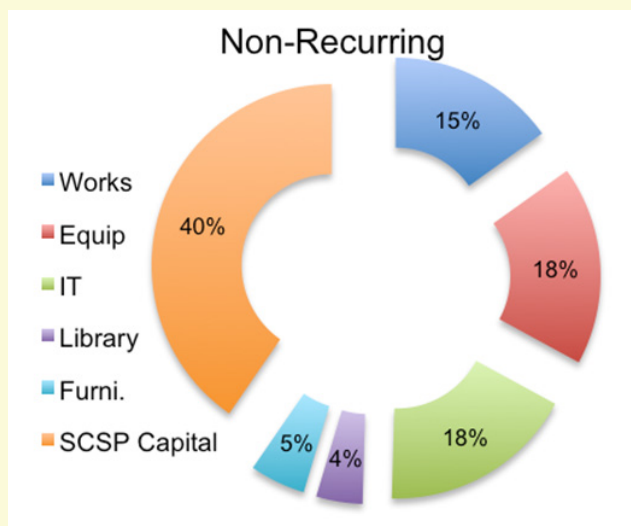
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Dec 5, 2021 Page No. 5
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(Rs In Lakhs)



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