Rabi 2024-25

COMPREHENSIVE PROJECT ON RICE FALLOW MANAGEMENT PROGRAM

IMPLEMENTED BY OSVSWA
IN COLLABORATION WITH ICARDA AND ICRISAT AND SUPPORTED BY DEPARTMENT OF AGRICULTURE AND FARMER'S EMPOWERMENT, GOVT. OF ODISHA

CGIAR INSTITUTION : INTERNATIONAL CENTER FOR AGRICULTURAL RESEARCH IN THE DRY AREAS (ICARDA) & INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS (ICRISAT)

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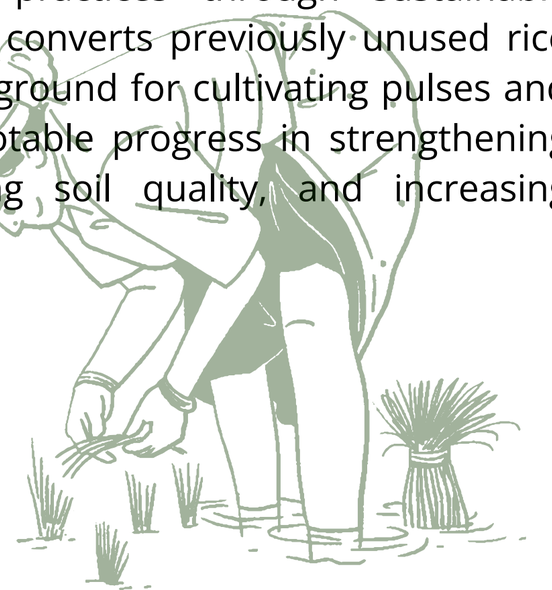
Introduction to the Project

Odisha's "Comprehensive Project on Rice Fallow Management" demonstrates the state's dedication to advancing agricultural practices through sustainable methods. This initiative converts previously unused rice fallow areas into fertile ground for cultivating pulses and oilseeds, resulting in notable progress in strengthening food security, enriching soil quality, and increasing farmer earnings.



Implementing Partner

ICRISAT (International Crops Research Institute for the Semi-Arid Tropics): Provides technical assistance in crop demonstration and research.

ICARDA (International Center for Agricultural Research in the Dry Areas): Supports field execution and seed production.

Field Execution

OSVSWA (The Orissa State Volunteers and Social Workers Association), founded in 1980 and registered in 1981, is a non-profit inspired by Gandhian principles. Established by freedom fighters and social reformers, it promotes volunteerism and people-centered development based on participation and sustainability. OSVSWA empowers underprivileged, marginalized, and tribal communities through initiatives in social, economic, environmental, educational, and infrastructure development. It also addresses youth issues, engages in public policy, and partners with various stakeholders, with a strong focus on agriculture and farmers' empowerment across most districts of Odisha.

Objectives

01 Exploitation of residual soil moisture

02 Restoration of soil health by increasing the soil biomass and organic carbon content

03 Production of more food with less water

04 To upscale cultivation of Pulses and Oilseeds in Rice fallow area

05 Establishment of Community Managed Seed System

06 Improving the livelihood of farmers through enhancement of income and nutritional security

The Comprehensive Project on Rice Fallow Management Program, Rabi 2024-25 project aligns with several Sustainable Development Goals (SDGs)

SDG 1: No Poverty - The project aims to improve the livelihood of farmers through increased income, food and nutritional security by enhancing crop production in rice fallow areas.

SDG 2: Zero Hunger - By targeting the production of pulses and oilseeds, the project seeks to boost food security and nutritional diversity, addressing hunger and malnutrition.

SGS 5: Gender Equality: This project supports SDG 5 by ensuring 30% of beneficiaries are women, giving them access to seeds, inputs, training, and income opportunities. It promotes women's participation, skill development, and economic empowerment in agriculture.

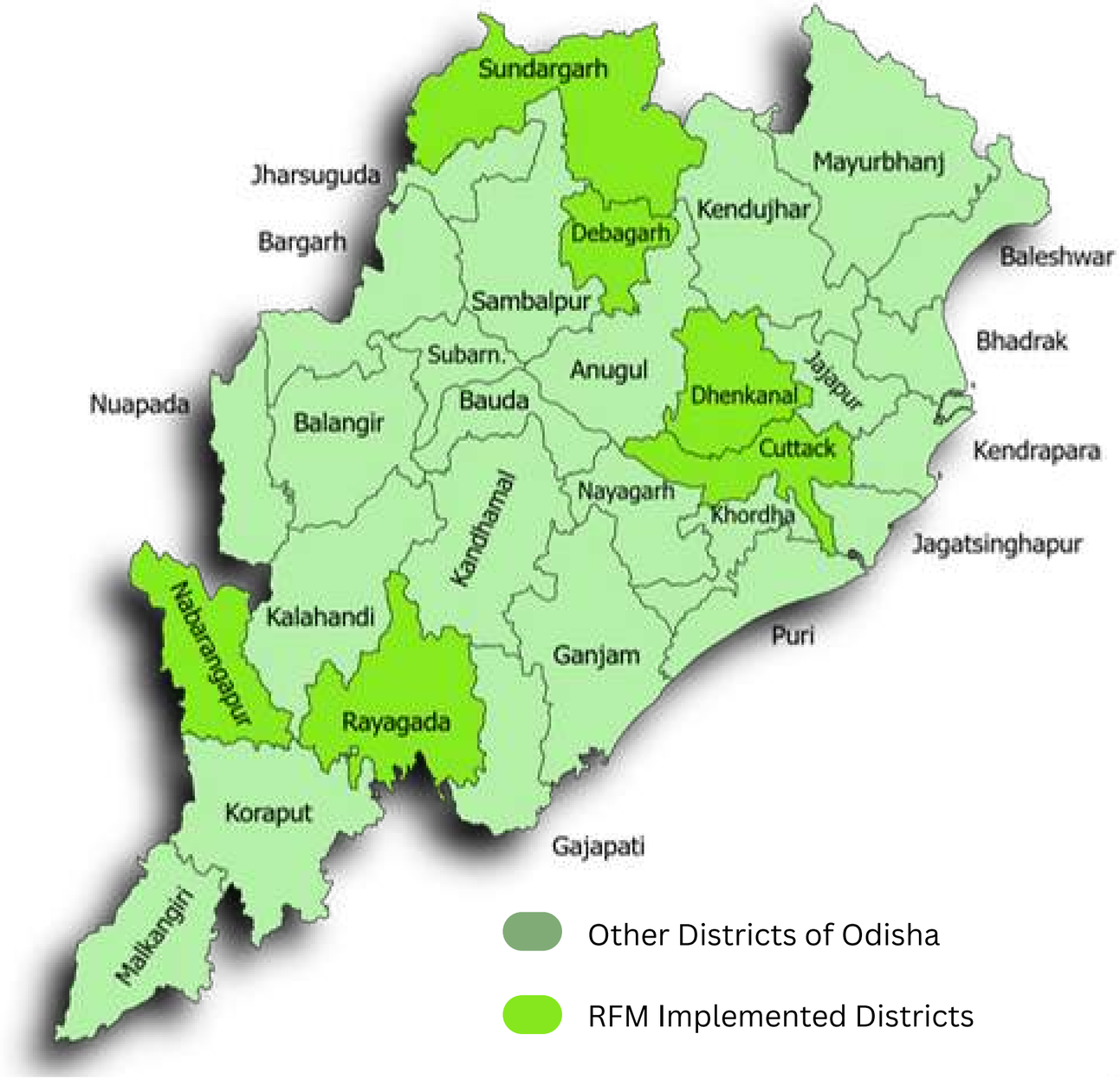
SDG 8: Decent Work and Economic Growth - The project creates employment opportunities through agricultural activities, implementing agencies, and community-managed seed systems, fostering economic growth.

SDG 12: Responsible Consumption and Production - The promotion of regenerative agricultural practices, such as the use of bio-fertilizers and IPM devices, supports sustainable farming practices and soil health restoration.

SDG 13: Climate Action - The project's focus is on reducing soil erosion and exposing the soil to different environmental threats by covering through crop canopy in rice fallow areas and check evaporation loss of soil moisture.

SDG 15: Life on Land - By enhancing soil health and promoting sustainable agricultural practices, the project supports the conservation and sustainable use of terrestrial ecosystems.

SDG 17: Partnerships for the Goals - The collaboration with various stakeholders, including governmental departments, CGIAR institutions, and local organizations, exemplifies partnerships to achieve the SDGs.

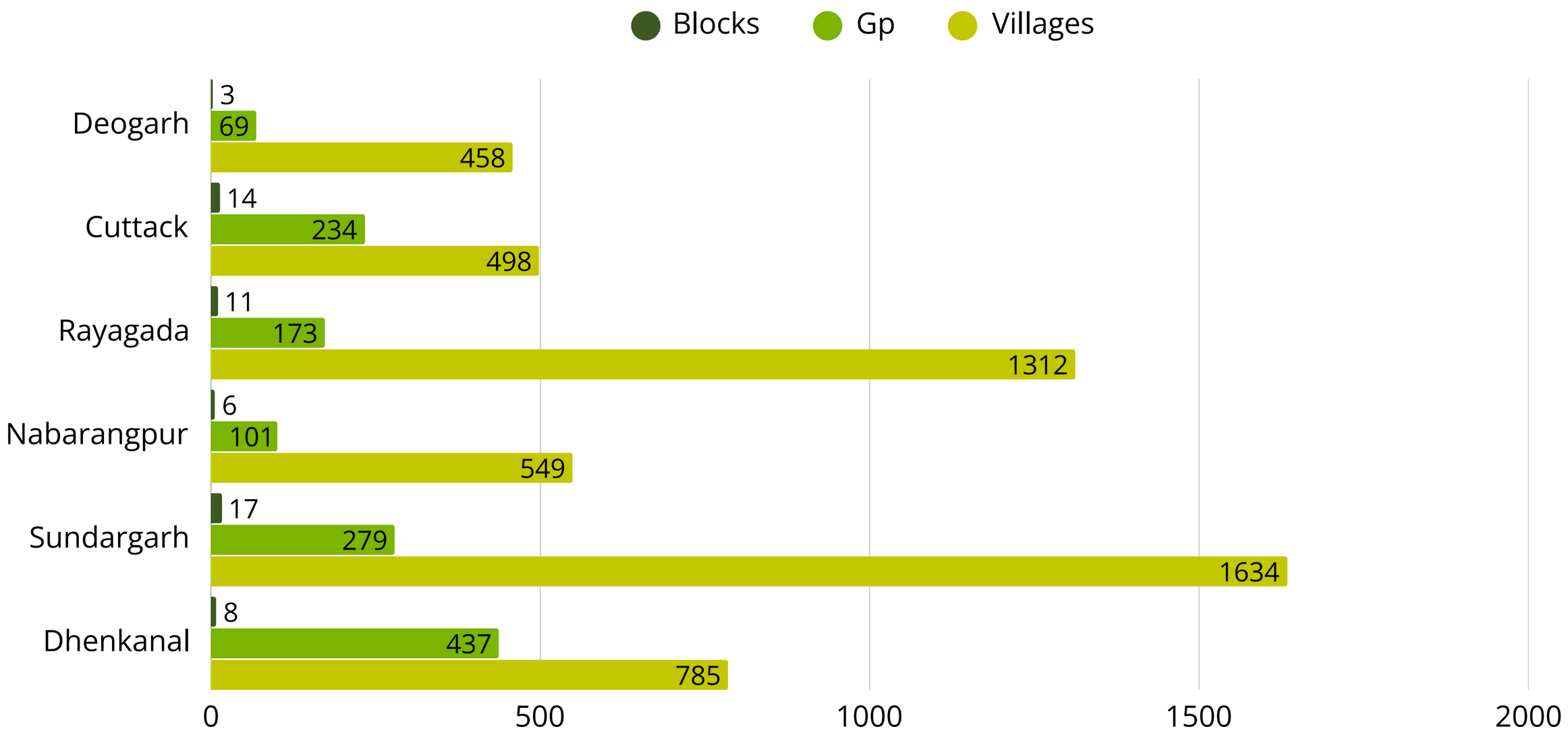


Geographical Coverage

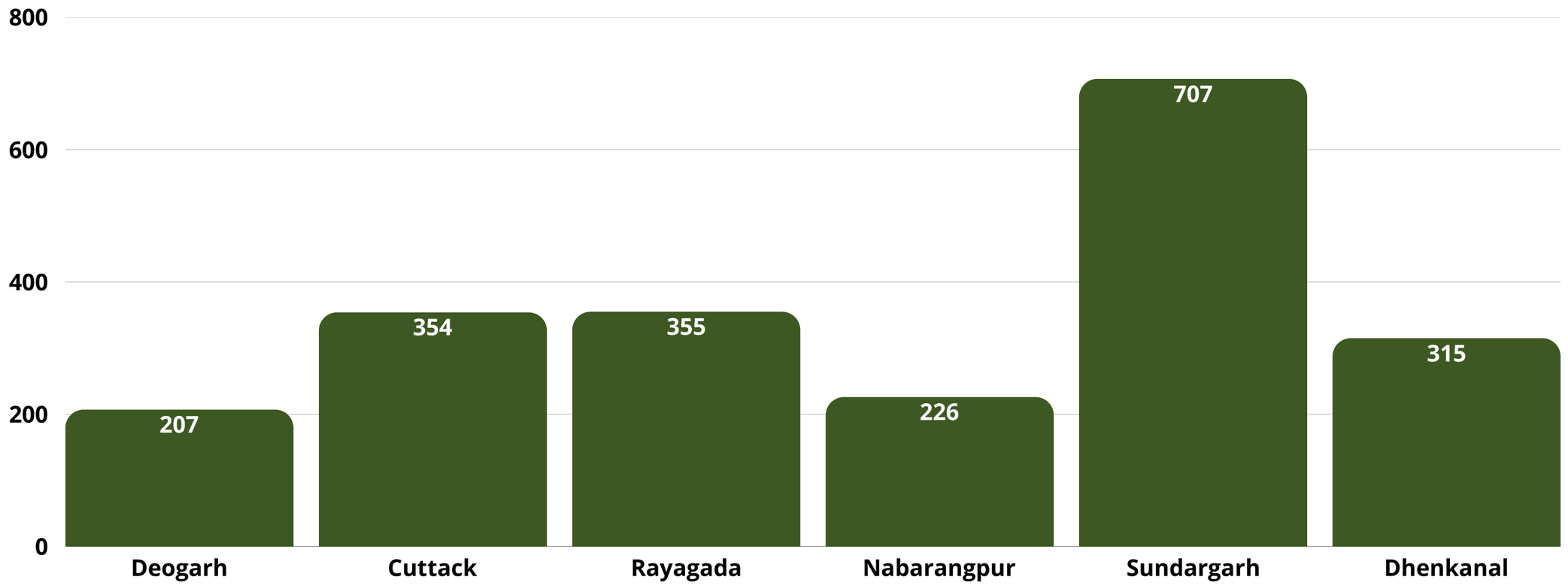
Districts	Blocks	GP
6	59	1493

Villages	Beneficiaries	Crops
5506	117254	8

Numbers of blocks, Gp and villages

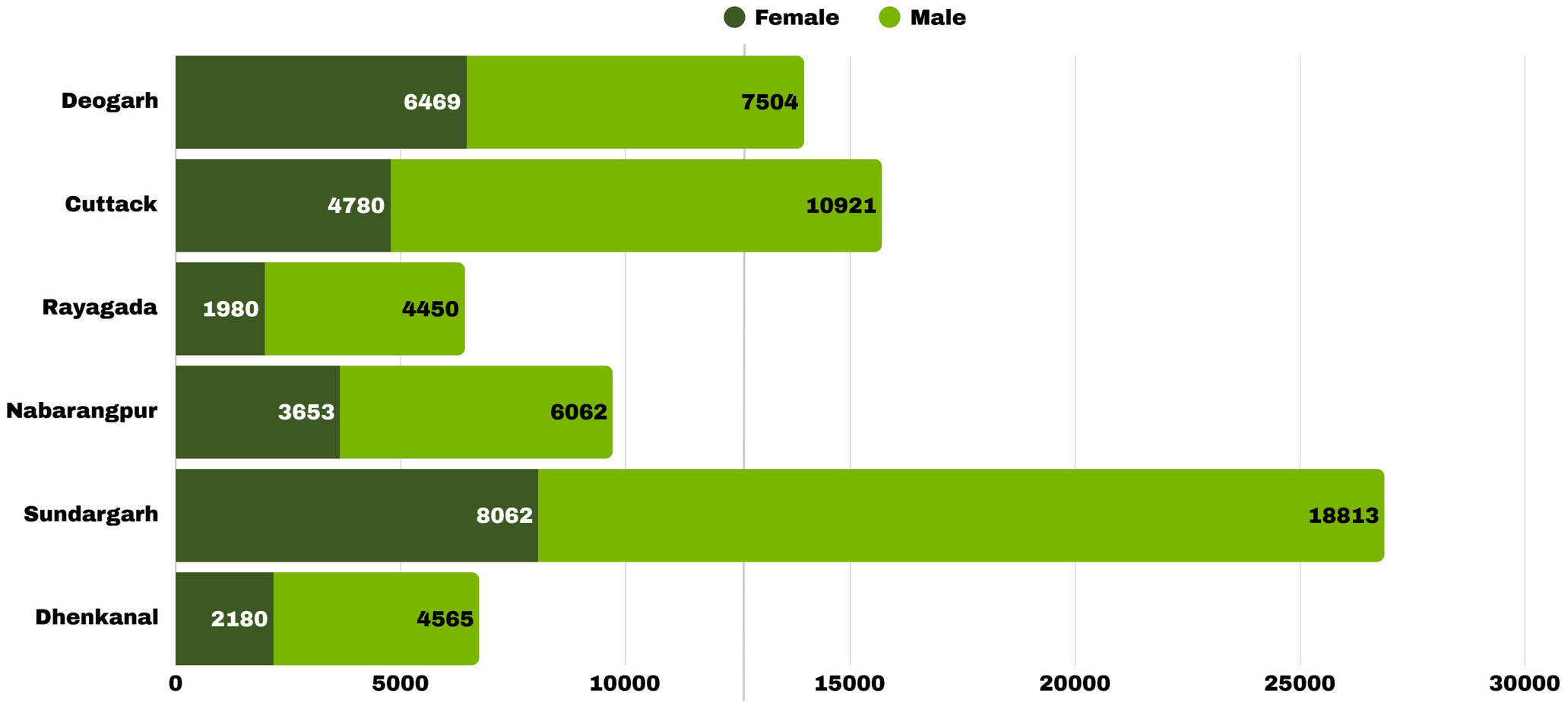


No of Capacity building cum seed distribution events



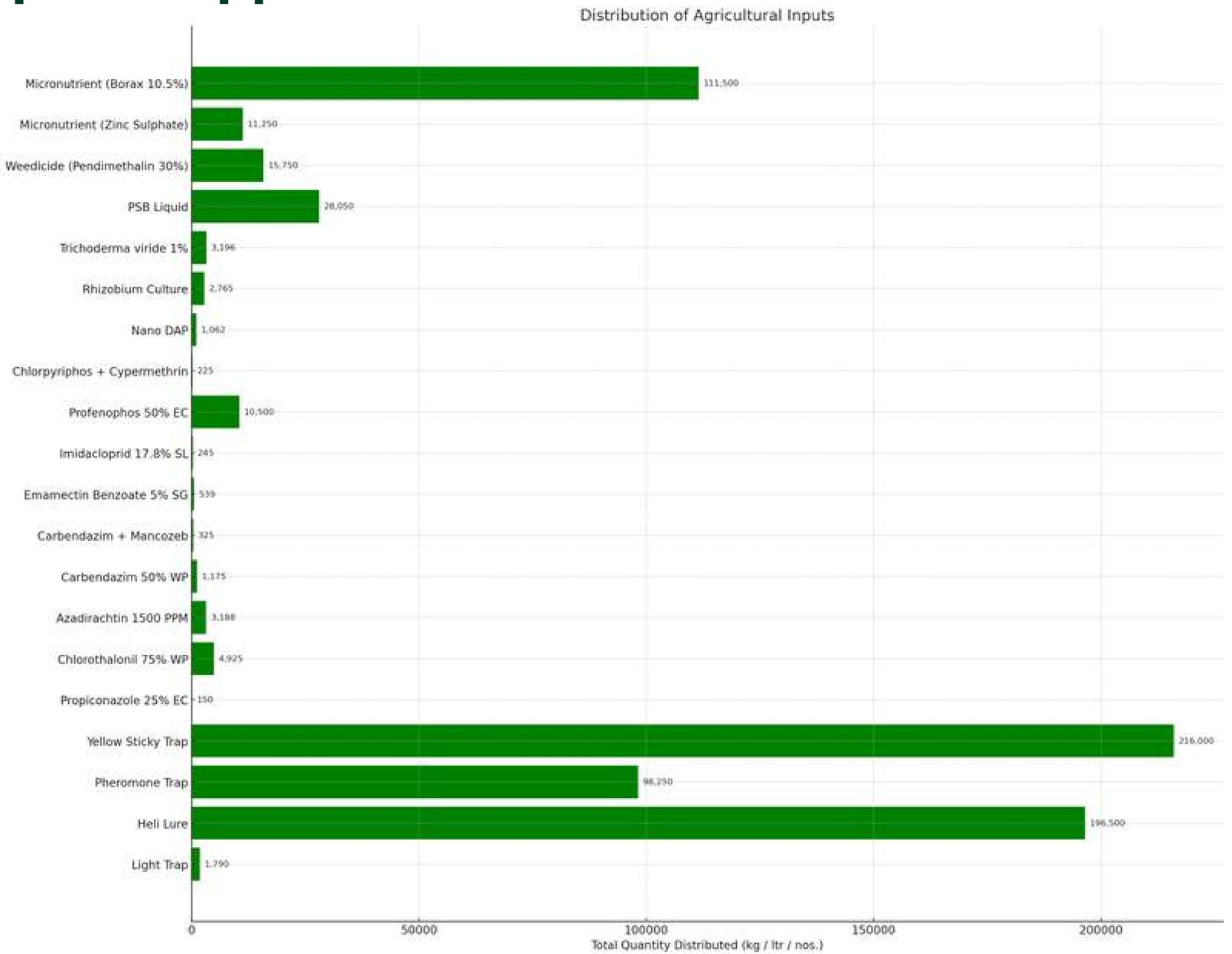
Total Events: 2164

Ratio Male/Female of Capacity Building Programs



Total no of participants: 79439

Total Inputs Supplied



Timeline

Q1

September 2024

- Initiation and allocation of the project
- Detailed discussion with State/District/Block level Govt meetings
- Awareness generation campaigns at GP level

Q2

October-December 2024

- Selection and training of beneficiaries
- Collection and analysis of soil samples
- Procurement and distribution of seeds and inputs
- Commencement of crop demonstrations and acid soil management

Q3

January-March 2025

- Ongoing crop demonstrations and monitoring
- Awareness campaigns and organization of field days
- Documentation and uploading data on the Adapt portal
- Mid-term evaluation and feedback collection

Q4

April-June 2025

- Harvesting and collection of yield data
- Compilation and submission of demonstration results
- Post-harvest evaluation and analysis
- Report preparation and documentation

Traditional Agriculture Practices

Traditional agriculture in Odisha, largely rice-based during the Kharif season, is shifting to make better use of vast rice fallow lands in the Rabi season. Under the "Comprehensive Project on Rice Fallow Management," the state promotes cultivation of pulses and oilseeds to increase cropping intensity, farmer income, and nutritional security. Farmers are supported with quality seeds, bio-fertilizers, and inputs to utilize residual soil moisture effectively. Soil amelioration in acidic areas is also encouraged to ensure sustainable, regenerative agriculture. This strategy helps reduce dependency on rice and diversify the state’s agricultural landscape.

Major Crops Cultivated

Greengram

Blackgram

Chickpea

Lentil

Fieldpea

Mustard

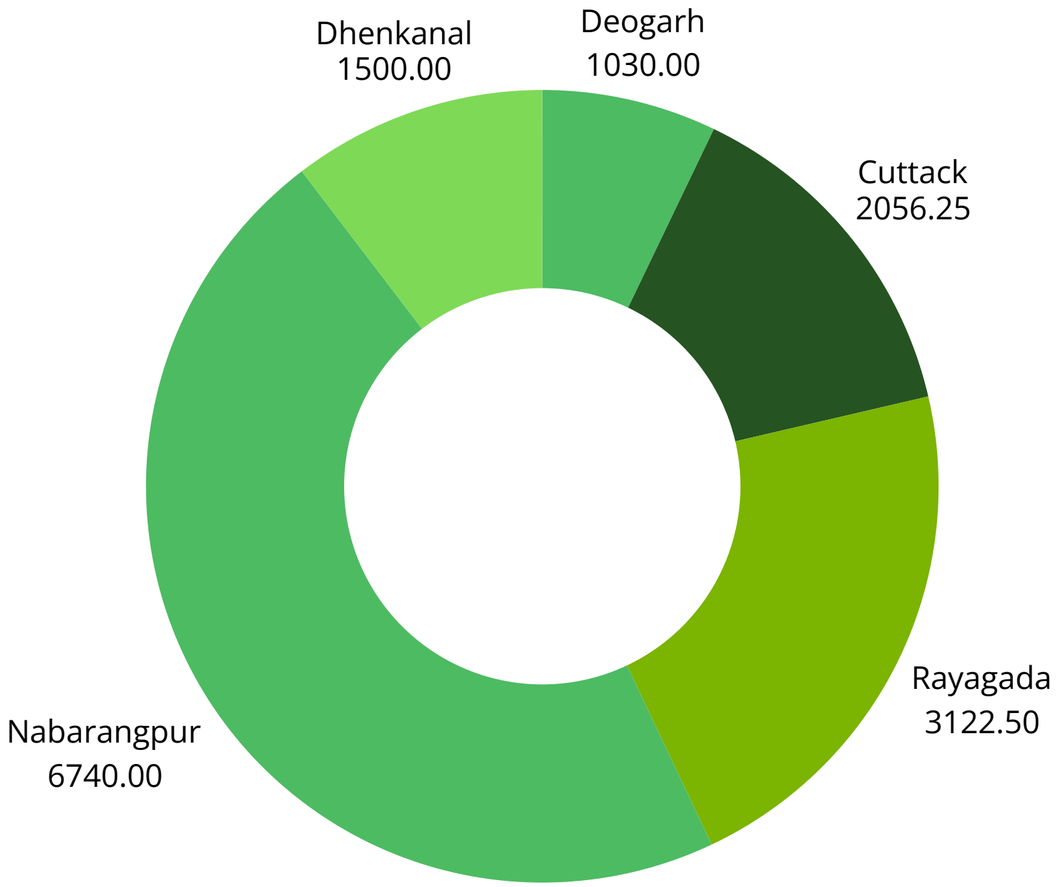
Sesame

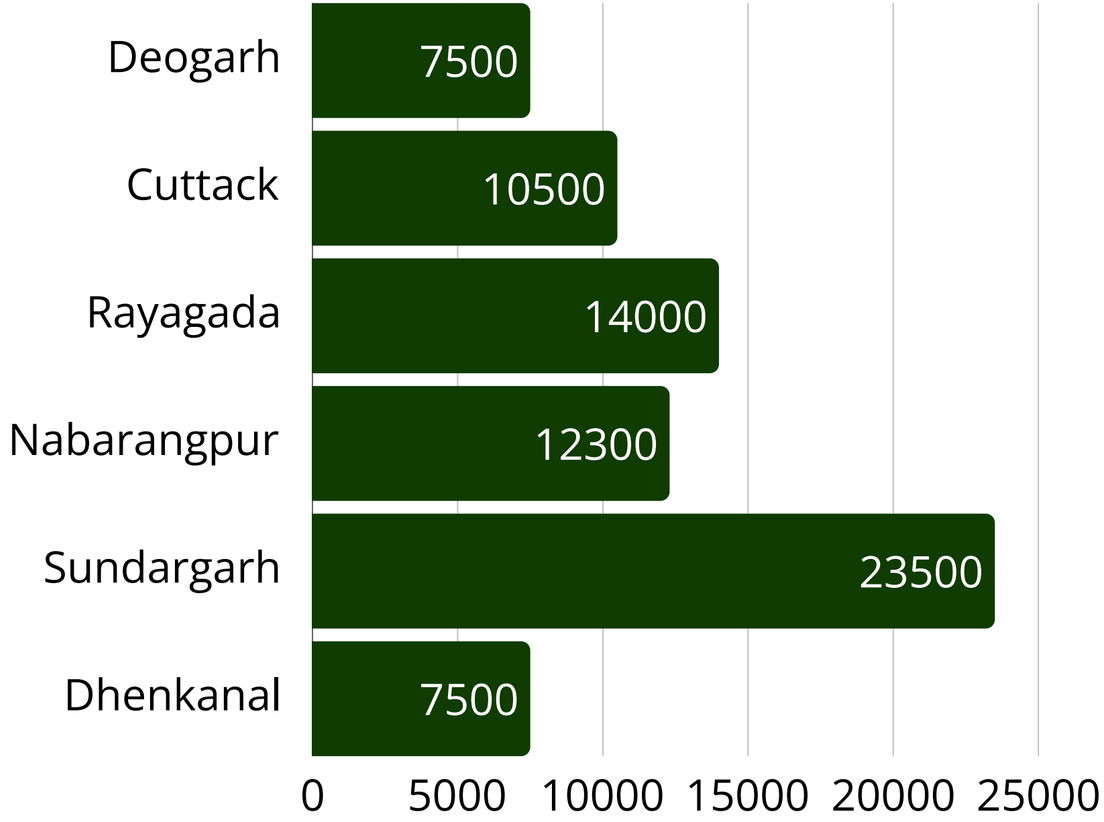
Grasspea

Seed and Input Distribution

Seeds were distributed to farmers according to their land area and the required seed dose. Distribution was conducted at a common location for smooth collection by all beneficiaries. Farmers were informed in advance about the distribution schedule to ensure timely pickup. The quality of seeds was verified before distribution for good germination. Additionally, other necessary agricultural inputs such as fertilizer were distributed to ensure comprehensive support for the farmers. A total of 14,448.75 quintals of seeds were supplied under this initiative.

Seed Supplied and Cultivated Area





Total Seed Supplied: 14448.75 Qtl.

Total Covered Area: 75,300 Ha

Crop wise Input Distribution

Crop Name	Micronutrient (Borax 10.5% in Kg)	Micronutrient (Zinc Sulphate Monohydrate 33% Zn in Kg)	Weedicide (Pendimethalin 30% EC in ltr)	PSB Liquid (in ltr)	Trichoderma viride 1% WP (in Kg)	Rhizobium Culture (in ltr)	Nano DAP (In ltr)	Chlorpyriphos 50% +Cypermethrin 5% EC (in ltr)	Profenophos 50% EC (in ltr)	Imidacloprid 17.8% SL (in ltr)
Greengram	✓		✓	✓	✓	✓	✓		✓	✓
Blackgram	✓		✓	✓	✓	✓	✓			✓
Fieldpea	✓			✓	✓	✓		✓		
Lentil	✓		✓	✓	✓	✓			✓	
Chickpea				✓	✓	✓				
Grasspea	✓			✓	✓	✓	✓		✓	
Mustard		✓			✓				✓	✓
Sesamum		✓								✓

Crop wise Input Distribution

Crop Name	Emamectin Benzoate 5% SG (in Kg)	Carbendazim 12% +Mancozeb 63% WP (in Kg)	Carbendazim 50% WP (in Kg)	Azadirachtin 1500 PPM (in ltr)	Chlorothalonil 75% WP (in Kg)	Propiconazole 25% EC (in ltr	Yellow Sticky Trap (in nos.)	Pheromone Trap (in nos.)	Heli Lure (in nos.)	Light Trap (in nos.)
Greengram		✓			✓		✓	✓	✓	✓
Blackgram		✓			✓		✓	✓	✓	✓
Fieldpea			✓				✓	✓	✓	
Lentil		✓					✓	✓	✓	
Chickpea										
Grasspea	✓	✓								
Mustard	✓	✓	✓	✓						
Sesamum		✓		✓						

Major Interventions

Awareness meeting

Before implementation, awareness camps educated farmers about the scheme's benefits for growing short-duration pulses and oilseeds on fallow land after Kharif paddy harvest to improve their economy and soil health.

District/Block coordination meeting

District-level coordination meetings were held under the Chief District Agriculture Officer's chairmanship to discuss objectives and align stakeholder responsibilities for successful scheme implementation.

Cluster Selection

PROCESS

Following the awareness meetings, patch selection was carried out with support from PRI members, local women SHG members, and potential beneficiaries.

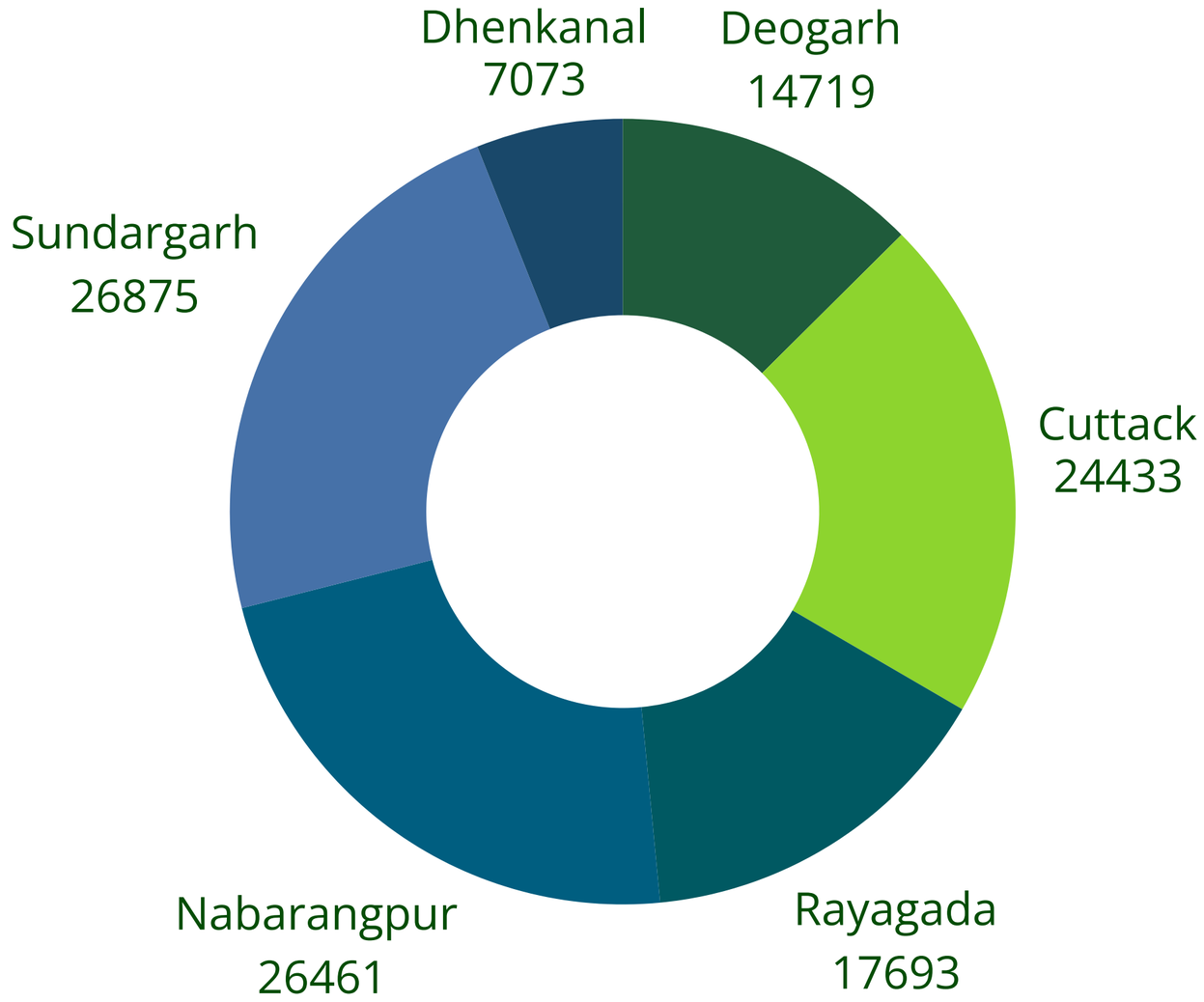
CRITERIA

The patches were chosen based on adequate soil moisture levels while considering protection from stray cattle, as the scheme requires cultivating crops in areas with residual moisture.

Beneficiary selection and Group Formation

The patch selection involved village meetings to choose beneficiaries, with resolutions prepared in the presence of departmental staff and PRI members. At least 30% of participants were women.

Number of Beneficiaries



Total Number of beneficiaries: 117,254

Soil Sample Collection

The block coordinator and beneficiaries collected soil samples on a cluster basis. These samples were then sent for laboratory analysis to assess soil health and nutrient status.

Soil & Land Preparation

Farmers prepared the land by using either tractor-mounted rotavators for fine tillage or traditional bullock plows, ensuring proper soil preparation for sowing.

Seed Treatment and Soil Application

Seed

Farmers treat seeds with 200ml of liquid Rhizobium culture per hectare, mixing thoroughly for even coating. Seeds can be dried to prevent clumping or stored properly if not sown immediately. Standard sowing techniques follow, promoting nitrogen fixation for improved crop growth and yield.

Soil

During final tillage, farmers incorporated liquid PSB culture, Trichoderma viride, and compost to enhance soil fertility and microbial activity. Dolomite was applied at 2.5 quintals per hectare for acid soil reclamation and pH correction. This comprehensive treatment improved soil health and created optimal conditions for crop growth.

Sowing

Farmers under the CRFM 2024–25 project carried out sowing in 20-hectare clusters of rice fallow land. With support from agriculture officials and implementing agencies, they received seeds, fertilizers, and IPM kits. Sowing was done in line-spacing using seed drills where possible. Soil samples were collected before and after sowing. All activities were geo-tagged and recorded on the ADAPT portal. Inputs were distributed in presence of officials, and awareness events were held to guide farmers through the process.

Weedicide & Fertilizer Application

Wedicides

Pendimethalin was applied within 48 hours of sowing, mixed with sand for pre-emergence weed control. In low soil moisture conditions, spray application was used instead.

Fertilizers

Supplied Pendimethalin was mixed with sand and applied within 48 hours post-sowing for weed control, with spray application used when soil moisture was insufficient.

Pest and Disease Management

Pest Management

Pest management targets major pulse pests: aphids, jassids, whiteflies, caterpillars, and pod borers. Farmers applied pesticides (Chlorpyrifos + Cypermethrin, Profenophos, Chlorothalonil, Imidacloprid) as needed for crops. Monitoring used yellow/blue sticky traps, light traps, and pheromone traps.

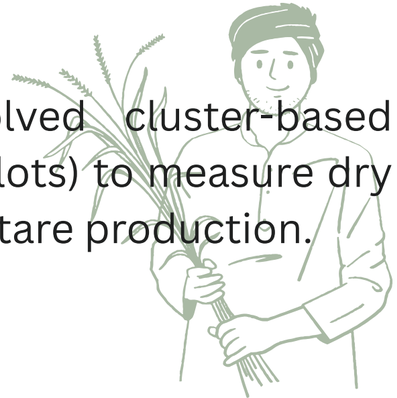
Disease Management

Fungal and bacterial diseases commonly affect pulses and oilseeds. Farmers received Trichoderma viride 1% WP for soil treatment in green gram, black gram, chickpea, and lentil, effectively controlling leaf spot and root rot. Mustard crops used propiconazole/chlorothalonil 75% for fungal infection management.

Crop Cutting Experiment

Harvest

Yield assessment involved cluster-based crop cutting (5m x 5m plots) to measure dry weight and estimate hectare production.



Crop cutting

Crop cutting was performed in 5m x 5m clusters to determine dry weight and calculate per-hectare yields.

Farmer’s Field Day

On Farmers’ Field Day, farmers gathered at demonstration plots to showcase their crops, share experiences, and discuss the results. They highlighted the benefits of improved practices and inputs used during the season. The event encouraged peer learning, built confidence, and motivated other farmers in the area to adopt similar methods.

Post- harvest Management

After harvest, farmers, women SHGs, and producer groups carried out threshing, cleaning, drying, and proper storage of the produce. They measured moisture levels before storage and used safe bags to maintain grain quality. Part of the produce was kept for domestic consumption and eating purposes, while the rest was sorted, packed, and prepared for sale by the women groups.

Data digitalization & yield analysis

The Rice Fallow Program uses digitized data management through the ADAPAT portal for enhanced accuracy. Beneficiary verification uses the KO registry, weekly crop coverage data confirms agency reports, and officials conduct digital farm plot verifications with systematic crop cutting data recording.

Data-Digitization

Geo-Tagging

Beneficiary & Benefit Taggining

Crop Cutting

Yield Analysis

District	Crop	Yield (Kg/Ha) Demonstration	Yield (Kg/Ha) Control Plot
Cuttack	Greengram	750	530
	Blackgram	600	545
	Mustard	450	355
Deogarh	Greengram	860	590
	Blackgram	850	585
	Mustard	720	550
	Sesamum	724	490
	Grasspea	488	325
Nabarangpur	Greengram	667.8	465.6
	Chickpea	1204.3	775.4
Dhenkanal	Greengram	580	460
	Blackgram	560	450

District	Crop	Yield (Kg/Ha) Demonstration	Yield (Kg/Ha) Control Plot
Rayagada	Greengram	633	528
	Blackgram	653	540
	Chickpea	776	658
	Lentil	802	705
	Fieldpea	750	690
	Mustard	570	481
	Sesamum	675	568
Sundargarh	Greengram	875	650
	Blackgram	881	634
	Chickpea	800	490
	Lentil	830	678
	Mustard	720	576
	Sesamum	620	389

Market Linkages

And Opportunities

As part of the project, market linkage was a key intervention to ensure farmers received fair value for their produce. Farmers, women SHGs, and producer groups were supported to connect with local traders, FPOs, and procurement agencies. Collective marketing efforts were promoted to reduce dependence on middlemen. In districts where applicable, steps were taken to link pulse growers with government procurement under the Price Support Scheme (PSS). These interventions helped strengthen post-harvest support, improve price realization, and boost farm income.

Project Outcomes

Environmental Impact

The CRFM project improves soil health, reduces chemical use, and promotes water-efficient farming. It boosts biodiversity and builds climate resilience through eco-friendly practices.

Social Impact

The CRFM project turns fallow rice lands into productive fields, boosting farmer incomes and nutrition. It empowers women, builds local skills, and strengthens community through cluster-based farming.

Economical Impact

The project boosts farmer income by using fallow land for pulses and oilseeds, cuts input costs, and strengthens local agri supply chains leading to better returns and reduced migration.

Environmental Impact

Climate Resilience:	Supports adaptive farming through better soil, diverse crops, and lower input dependency.
Soil Health and Fertility:	Improving soil health through better pH balance and organic carbon content via crop rotation
Water Conservation:	Growing water-efficient crops like pulses and oilseeds instead of water-intensive paddy
Regenerative Agriculture:	Using eco-friendly inputs like bio-fertilizers and IPM devices

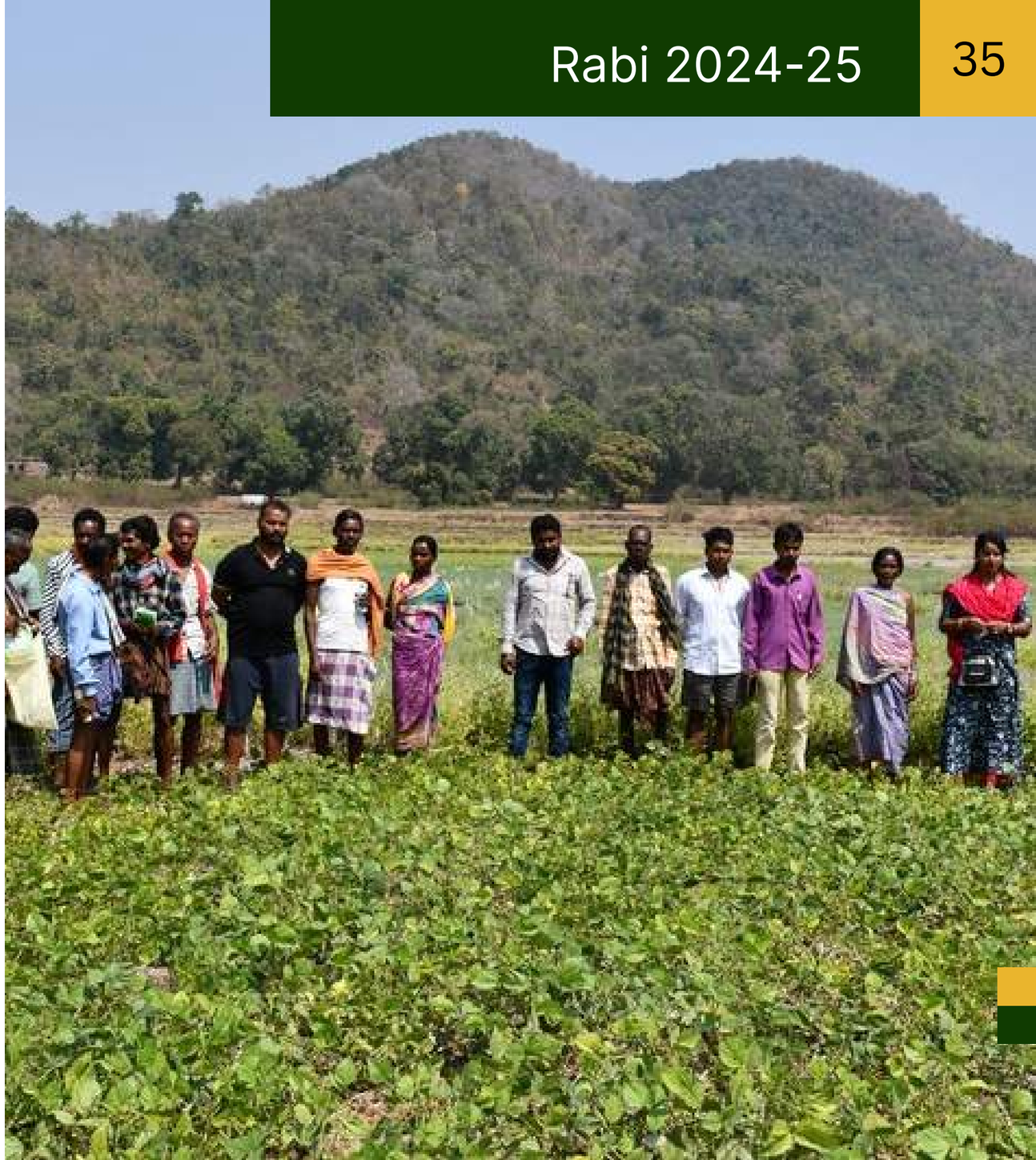
Social Impact

Enhanced livelihoods
Increased income from pulses/oilseeds cultivation and community-managed seed systems that promoted self-reliance

Nutritional security
Crop diversification provided more balanced diets and improved health outcomes

Community empowerment
En gaged FPOs, CBOs, and women's self-help groups (30%+ women participation) to promote social cohesion and gender equality

Awareness and Capacity building
Awareness campaigns and training programs improved farming practices and agricultural sustainability.



Economical impact

Additional Crop Income

Farmers earned from an extra Rabi crop grown on previously unused rice fallow land.

Reduced Input Costs

Farmers got quality seeds, bio-fertilizers, and micronutrients at subsidized rates. Soil testing helped them use only what was needed, cutting waste and saving money.

Market linkages

Linkage with MARKFED/ mandis and collective selling helped farmers get fair prices.

Job creation

Farmers earned additional income through increased productivity, sale of surplus produce, and participation in group marketing efforts.

SUCCESS STORIES

Farmer Feedback

For 10 years I grew lentils with old methods - low yields, no profit. After ICARDA-OSVSWA training, I used improved seeds, proper sowing, fertilizers, and pest control. Now I get 6.8 quintals per hectare - much higher than before! Became a role model in the village. Now, many farmers come to me for guidance, and I proudly share the knowledge I gained. My success has inspired others in the village to adopt modern techniques too. Together, we're transforming agriculture in our community.

Shri Kanturu Majhi

Farmer Feedback

I used to work on chicken farms in Andhra Pradesh every year. After learning pea cultivation, I harvested 320 kg from one acre and earned ₹29,000. Built a kitchen with this money and didn't have to go to other state to work.

Kamili Kadraka

Before this program, I used to migrate to other states after paddy harvest. Now I grow mung beans on the same land and earned ₹50,000 from 7 quintals. No need to leave home for work anymore!

Lentil farming

Farmer Feedback

Sahadeva Baladaria

After ICARDA's training on scientific farming, I changed my mung bean cultivation completely. Earlier I got 4.6 quintals per hectare without using fertilizers or pest control. Now I treat seeds with Trichoderma, use bacterial cultures, apply proper fertilizers, and manage pests with traps and pesticides. This season I harvested 6.5 quintals - 41% more yield! Training knowledge really works when applied properly.

Before this program, I used to migrate to other states after paddy harvest. Now I grow mung beans on the same land and earned ₹50,000 from 7 quintals. No need to leave home for work anymore!

Makardhwaj Khandaria

Farmer Feedback

Ten lakh rupees from the wasteland

We had many problems no technology, marketing issues, no transport. After Agriculture Dept..ICARDA, OSVSWA intervention, 20 of us grew blackgram together on 20 hectares. Harvested 146 quintals and earned ₹10,08,000 Never dreamed we could earn ten lakh rupees from fallow land after paddy.

Parshan Kumar Panigrahi, a 56-year-old farmer from Nabarangpur, shifted from rice–maize monocropping to Bengal gram with support from the CRFM project by the government and OSVSWA. Rising costs and low maize returns led him to adopt pulse farming using residual soil moisture, with seeds, bio-agents, and plant protection support.

Overcoming initial pest challenges, he harvested 21 quintals and earned a net profit of ₹58,300, raising his annual income to ₹4.2–4.4 lakhs. The shift improved soil fertility, reduced weeds, and inspired other farmers, motivating him to further expand gram cultivation.

Parshan Kumar Panigrahi

Farmer Feedback

Shri Raja Shabar

I was always worried about moneylender loans with only paddy income. After ICARDA-OSVSWA's meeting about rabi crops, I tried sesame cultivation. They provided improved seeds, fertilizers, and training. Despite caterpillar attacks, I used neem oil and harvested well. Sold at ₹85/kg and earned ₹1,03,000! Paid off all loans and saved money for my daughter's marriage. Sesame made me debt-free.

My house was half-built due to lack of money. ICARDA-OSVSWA encouraged sesame cultivation on my 2 hectares of fallow land. With their seeds, training, and advice, I earned ₹1,02,000! Completed my house construction. Planning to cultivate more land next season.

Shri B. Krishna Rao

Farmer Feedback

Previously, we cultivated sesamum individually, often facing crop losses due to wild animals and poor yields. But with OSVSWA's guidance and the cluster farming approach, our harvests have more than doubled. Now, we not only enjoy food security but also earn a stable income from selling in the market. This success has boosted our confidence as farmers and strengthened unity within our village. We now plan together, grow together, and prosper together.

75 Farmers of Rengalbahal Village

Farmer Feedback

Sankar Pattanayak

Before, I struggled with poor seeds, crop failures, and limited market access, earning little despite hard work on my land. With the support of the CRFM project and OSVSWA, I adopted new practices like seed inoculants and traps, and today my income has grown to nearly ₹5 lakhs a year, making me a recognized progressive farmer.

Before, I only grew vegetables near my home after paddy and never thought of using rice fallow land. With OSVSWA's guidance, I cultivated mustard for the first time, harvested 6.5 quintals, and now I am motivated to continue oilseed farming every year.

Mr. Dhiren Nayak

Farmer Feedback

75 Farmers of Rengalbahal Village

Before, my mustard yields were low and much of my effort went in vain. With OSVSWA's support under the Rice Fallow Management Programme, I adopted better practices and harvested 4.8 quintals this year, giving me both food security and income.

Before, most of my land lay fallow after paddy and I struggled with low income from traditional farming. With the CRFM project and OSVSWA's support, I cultivated green gram on 5 acres, earned ₹1.5 lakhs, and now feel confident about a better future in farming.

Mr. Bijay Kumar Samantray

Farmer Feedback

Before, we never cultivated mustard in our rice fallow lands, and much of the soil's moisture after paddy harvest went to waste. Our incomes were low, and we lacked knowledge of how to manage crops or protect them from pests and wild animals.

With the support of OSVSWA under the Rice Fallow Management Programme, we came together as a group of 61 farmers, including 9 women's self-help groups, and learned about cluster farming. We received seeds, inputs, and regular training on soil application, pest control, and organic practices like preparing Jeevamruta.

This year, we cultivated mustard collectively on 30 hectares and harvested 190 quintals. Out of this, 129 quintals were sold in the market, giving us much-needed income, while 61 quintals were shared among our members for household food and oil.

Now we feel stronger as a community, with food security and new earnings, and we are determined to continue mustard cultivation every year. We thank OSVSWA for guiding us, standing with us in the fields, and showing us the power of working together as a group

Dolagabinda Farmers Producer Group

Aknowledgments

We begin by expressing our deepest gratitude to the farmers of Odisha, whose trust, participation, and willingness to embrace new practices made the Comprehensive Project on Rice Fallow Management (CRFM), Rabi 2024–25 possible. Their dedication remains the driving force behind every success this initiative achieved.

OSVSWA is honored to have served as the field implementing partner under the technical leadership of ICARDA and ICRISAT. We sincerely appreciate their expert guidance, scientific input, and strong partnership throughout the programme.

We thank the Department of Agriculture and Farmers' Empowerment and the Directorate of Agriculture and Food Production, Odisha, for their leadership and clear direction, which enabled smooth implementation across districts.

Our appreciation also goes to OSSC, OAIC, Fine Trap, and OCCF for ensuring timely delivery of seed, inputs, and crop protection support essential to improving productivity and resilience.

We are grateful to the Odisha State Co-operative Marketing Federation Ltd. (MARKFED) for enabling the functioning of procurement mandis, providing farmers with fair and reliable market access.

We acknowledge the commitment of the district agriculture departments, District Nodal Officers, KVK scientists, and departmental staff for their technical coordination and on-ground support.

Lastly, we thank our own District Coordinators, State Office Management Team, and Field Staff, whose day-to-day work, coordination, and dedication ensured the programme reached where it mattered most the farmers' fields.

Rabi 2024-25

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