



ICAR-IWM News

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DIRECTOR'S COLUMN



Role of Agricultural Water Management In Green Credit Programme

Green credit scheme launched by the Ministry of Environment, Forest and Climate Change, Government of India during October 2023 is an effort to incentivise all activities pertaining to environment positive actions besides reduction of carbon emission. The Green Credit rules are being implemented to promote the Green Credit Program which aims to promote environmental preservation and sustainability through market-driven approach. The programme encompasses eight different activities viz. tree plantation, water management, sustainable agriculture, Waste management, air pollution reduction, mangrove conservation and restoration, ecomark label development and sustainable

building and infrastructure. Under this context, the role of ICAR-Indian Institute of Water Management is significant to address, the water management aspects besides the wastewater management activities leading to attain agricultural sustainability. In present scenario with 50% area under both rainfed and irrigated agriculture in India, the conservation and judicious application of water based on crop water demand plays a significant role. India tops the list in coverage of irrigated area of 71Mha with the largest groundwater well equipped area of 41Mha. However, the area coverage under micro irrigation (about 15%) needs upscaling and its adoption would ensure higher irrigation water use efficiency and agricultural water productivity. Moreover, remaining 85% area under surface irrigation necessitates dissemination of judicious irrigation scheduling and soil moisture conservation technologies. In this context, technologies developed by IWM pertaining to judicious irrigation scheduling through integrated soil moisture and flow depth sensing systems for supply of measured water as per crop water demand, lining of field channels or use of piped network for irrigation, use of different planting methods and mulches to conserve soil moisture, lining of water harvesting structures and evaporation suppressant to prevent seepage and evaporation of water, adoption of direct seeded rice planting method to save



ICAR - Indian Institute of Water Management

Chandrasekharpur, Bhubaneswar - 751 023, Odisha, India

Phone : 91-674-2300060 (Director), 2300010/2300016/2301815

E-mail : director.iwm@icar.gov.in, // Web : <https://iwm.icar.gov.in>

CONCEPT

Dr. Arjamadutta Sarangi

EDITORS

Dr. R.R. Sethi

Dr. R.K. Mohanty

Dr. A.K. Nayak

Dr. O.P. Verma

Dr. S. Pradhan

Dr. A. Jha

water and ensure conjunctive use of water in canal commands, land shaping options and use of low cost ultrasonic sensor based Alternate Wetting and Drying (AWD) system methods etc. are being disseminated to stakeholders. Apart from research, capacity building programmes on water management in horticultural crops were being undertaken to horticulture officers and farmers of Odisha.

Green Credits are determined based on resource equivalence, scalability, scope, size, and other relevant parameters, aiming to achieve desired environmental outcomes. Water management in agriculture is going to play a major role in the green credit programme of the Country. However, it is essential to develop protocols for quantification of benefits due to water saving technologies besides carbon credit. Protocol for water footprint based cropping sequence, carbon foot print under different irrigation methods and the erosion footprint need to be standardised to arrive at quantification of green credit based on different interventions. The ecosystem services due to adoption of water saving technologies by the stakeholder in the watersheds or canal commands need to be quantified and integrated as a contributing factor in computation of the green credit based on different technologies. Green credit would result in reduction in carbon emission under zero energy based drip and micro sprinkler systems developed by the AICRP on Irrigation Water Management (IWM) and the Institute. Nonetheless,

different technologies developed by the Institute and disseminated to different stakeholder would contribute significantly in conserving water and enhancing agricultural water productivity. However, there should be policy frame work for rewarding stakeholders based on the green credit score in agricultural water management which would be an incentive and would be a step towards doubling farmers' income.

Attempts were made by the Institute during the period of six months to disseminate IWM technologies and reach more stakeholders through participation and demonstration of technologies in conferences, farmers fairs besides different training and capacity building programmes under TCP, SCSP, Farmers FIRST, MGMG etc. Projects submitted by the Institute for external funding from different funding agencies were approved. Three technologies were certified by NRM division of ICAR and copyright of one technology was obtained. Scientists and staff of the Institute were able to expand their knowledge and were encouraged by visit of eminent personalities and academicians including Hon'ble Secretary DARE and DG, ICAR, DDG (NRM), ICAR, Director of OPIICRA, CAD-PIM, Director (HR), NALCO and Commissioner of BMC, Govt of Odisha. Several programmes as desired by the Council and GoI in form of awareness initiatives were organized by the Institute.

RESEARCH ACHIEVEMENTS |

Evaluation of climate change impacts on groundwater resources (NICRA project)

Since the beginning of the 21st century, the monsoon rainfall that replenish the groundwater resources on an annual cycle behaves more erratically. Particularly, the droughts of 2002, 2004, 2008, 2009, 2012, 2015 had notable impacts. Although the groundwater-irrigated alluvial aquifer of Ganga basin exhibited resilience to the initial years of rainfall deficits, an apparent irreversible kind of falling water table can very well be noticed from the monthly time series. Between the pre-2000 (1985-2000) and post-2000 (2001-2017) periods, an average decline of 1 m has occurred, with the January and May experiencing 1.5 m and 1.2 m decline, respectively. Interestingly, during the pre-2000 period, the falling water table during the three-year drought around 1995 witnessed a recovery thereafter resulting in a non-significant stable sub-surface system. The spatial contrast between 1996-2000 and 2011-2015

(Fig.1) provides further evidence regarding the coherent pattern of decline, matching the intensely irrigated belt of northern and northwestern parts of the basin.

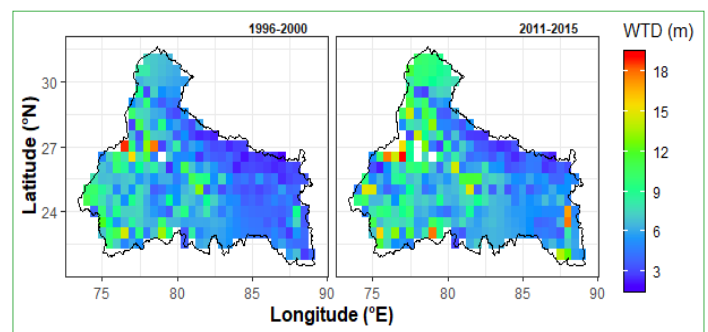


Fig. 1. Spatial difference of water table depth (WTD, m) between 1996-2000 and 2011-2015 across the Ganga River basin, indicating widespread declines over the western and northwestern parts of the basin.

(D. K. Panda, R.K. Jena, Ajit K. Nayak and B.S. Satapathy)

Trend analysis of groundwater storage in Baitarani River Basin

Season-wise groundwater storage trend was analyzed by using Innovative Trend Analysis (ITA). The analysis showed that precipitation and surface runoff followed a non-monotonic negative (– ve) trend in winter season and monotonic positive (+ ve) trend in all other season for all gauging stations. The groundwater storage followed increasing trend in winter and post-monsoon season. In the lower catchment areas, groundwater storage was more due to flat topography and good aquifer type, where groundwater use can be enhanced. But in upper catchment areas, groundwater storage capacity is comparatively less hence rain water conservation structures could be suggested to check the surface runoff and provide options for increasing groundwater recharge. This study will be helpful to focus on regional scale planning to address the water management issues within the basin, which will be ultimately helpful for agriculture, watershed development and environmental planning.

Adapted from Sethi, R.R., Dandapat, A.K., Sankalp, S., Jena, S.K., Panda, D.K. and Sahoo, D.C. 2023. Innovative trend analysis for evaluation of groundwater storage in Baitarani River Basin. *Environ Earth Sci*, 82, 605 (2023). <https://doi.org/10.1007/s12665-023-11283-6>



Alternate wetting and drying water management: Method to reduce phosphorus availability under lowland rice cultivation

The limited availability of phosphorus (P) in the soil, which is affected by soil moisture, has a significant impact on crop production. However, we still do not fully understand how water management and nitrogen (N) addition affect the availability of P in paddy soil. An evaluation of the effects of two water management strategies that is continuous flooding (CF) and alternate wetting and drying (AWD) irrigation along with various nitrogenous fertilizer addition rates (equivalent to 0, 100%, 133%, and 166% recommended dose of N addition) on P availability in paddy soil took place over the course of a 2-year field experiment. The results showed that water management had a significant influence on ferrous iron, microbial biomass P, and soil-available P. However, the addition of N did not affect the availability of P in the soil. When N was added at various rates, AWD consistently reduced the amount of soil-available P compared to CF. This was primarily because AWD increased microbial biomass, which immobilized P and decreased the content of ferrous iron. As a result, the soil's ability to absorb P increased, leading to a decrease in the amount of P available. In conclusion, AWD decreases the amount of available P in paddy soil compared to CF.

Adopted from Adhikary, P.P., Mohanty, S., Rautaray, S.K., Manikandan, N. and Mishra, A. 2023. Alternate wetting and drying water management can reduce phosphorus availability under low land rice cultivation irrespective of nitrogen level. *Environ Monit Assess* 195, 1420. <https://doi.org/10.1007/s10661-023-12052-5>



Hon'ble Secretary, DARE and DG, ICAR Visited ICAR-IIWM

ICAR-IIWM, Bhubaneswar organized an Interaction Meeting of ICAR Institutes located in Bhubaneswar and Cuttack with Hon'ble Secretary, DARE and Director General, ICAR, New Delhi, Dr. Himanshu Pathak on November 9, 2023. In the meeting, the progress of the ICAR Institutes on financial and administrative issues were discussed besides, other issues raised by Directors/ Heads/ AO/ FAOs of different Institutes in and around Bhubaneswar, Odisha.



ICAR-IIWM Conducted Campaign on 'Micro-irrigation' and 'Conjunctive water use'

ICAR-IIWM, Bhubaneswar conducted campaign on micro-irrigation on July 11, 2023 as a part of celebration of *Azadi ka Amrit Mahostav*. Under this campaign, two training



programs on awareness of micro-irrigation were conducted, one in Brahmanabati village in Cuttack district and other at Darpanarayanpur MIP project site in Nayagarh district. In Darpanarayanpur, 60 farmers participated in the program. Dr. A. Sarangi, Director of the Institute, Dr. R. K. Panda and Dr. P. Panigrahi, Principal Scientists acted as key speakers. In Brahmanabati village, 52 farmers participated. Dr. S. K. Rauataray and Dr. S. Mohanty, Principal Scientists and Dr. P. P. Adhikary, Sr. Scientist were the resource persons. Again, campaign on 'Conjunctive water use' under theme 'Water' was conducted on August 8, 2023 at Budhabudhiani canal command area of Odagaon block of Nayagarh district. Dr R. K. Panda, Dr. S. K. Jena, Dr. R. K. Mohanty, Dr S. Mohanty and Dr. R. R. Sethi, Principal Scientists organized the program.

ICAR-IIWM Showcased Technologies in the 95th Foundation Day of ICAR

The ICAR-IIWM, Bhubaneswar participated in the 95th Foundation Day and exhibited its technologies at National Agriculture Science Complex, Pusa, New Delhi from July 16-18, 2023. ICAR-IIWM, Bhubaneswar showcased two innovative technologies, i.e. 'IoT-enabled irrigation automation system for AWD in transplanted rice' and 'Solar tree-based micro-irrigation system'. Dr. D. Sethi, Dr. D. Ghosh, Scientists, Dr. S. K. Karna and Mr. K. K. Sharma, Technical Assistant and Mr. Kali Prasad Mishra, YP-II organized the technology demonstration successfully. Large number of farmers, students, industry representatives



and start-up firms attended the event and interacted with scientists and staff of ICAR-IIWM.

ICAR - IIWM Organized Expert Lecture

An expert lecture on 'Hydrological analysis methods and techniques for Mahanadi basin' was organized on July 21, 2023 at ICAR-IIWM, Bhubaneswar under the chairmanship of Dr. Arjamadutta Sarangi, Director. The lecture was delivered by

Dr. Chandranath Chatterjee, Professor, Dept. of Agriculture and Food Engineering, IIT, Kharagpur and the PI of the CRP-Water theme of IIT, Kharagpur. He talked about sustainable surface water resources plan for Mahanadi and upper Krishna basins using high resolution geo-spatial database.

ICAR - IIWM Organized Interface Meetings

ICAR-IIWM organized Interface meeting of ICAR-IIWM and Water resource Department, Govt of Odisha on August 1, 2023 under the chairmanship of Director, ICAR-IIWM. In this meeting discussion was held on possible future collaborative pilot research project as per the proceedings of the State Level

Monitoring Committee on CAD & WM. Dr. R. K. Panda coordinated the meeting.

ICAR - IIWM Organized Interface meeting of ICAR-IIWM and Department of Extension Education, OUAT on August 11, 2023 at, Bhubaneswar for upscaling of the ICAR-IIWM

technologies through KVKs. ICAR-IIWM technology were presented in details and interacted with the University officials to identify suitable areas for upscaling of the technologies. Dr. M. Raychaudhuri, Principal Scientist and Program Leader



(On-Farm Technology Dissemination) organized the program. Dr. S.K. Rautaray and Dr. R. K. Jena, Scientist attended the meeting.



ICAR-IIWM Celebrated Independence Day

The 76th Independence Day was celebrated on August 15, 2023 with patriotic fervor and gaiety. On this occasion, the national flag was hoisted by Dr. A. Sarangi, Director of the institute. He addressed the staff and family members of the

institute with encouraging words and urged upon the need for hard work and dedication by the staff for the welfare of the farming community and to make the institute as well as the country proud.

ICAR - IIWM Organized 18th Parthenium Awareness Week

ICAR-IIWM observed the 18th Parthenium Awareness Week during August 16-22, 2023. A campaign was organized at Vivekananda Shiksha Kendra, BDA colony, Bhubaneswar where, Dr. D. Ghosh, Scientist addressed the students about the harmful impacts of *Parthenium* weed on human and animal health. On August 18, 2023, a campaign was organized at ICAR - IIWM Research Farm, Medhasal. Dr. S.K. Rautaray, Dr. P.K. Panda and Dr. D. Ghosh talked about the *Parthenium* infestation and its management in the farmer's field. Scientists and staff of ICAR-IIWM got engaged in uprooting *Parthenium* in the office premises on August 21, 2023. On the final day, an awareness drive was organized at Haridamada, Farmers FIRST adopted village, Khorda. Dr. S.K. Mishra, Dr. D. Ghosh and Dr. P. Sahu interacted with farmers. Dr. Dibakar Ghosh, Scientist and Dr. Subodh Karna Technical Assistant of ICAR-IIWM coordinated this program.



ICAR-IIWM Organized Review Meeting of Raj Bhasha Hindi



ICAR - IIWM organized review meeting related to the implementation of official language in all ICAR Institutes located in Bhubaneswar on August 17, 2023 in the presence of Shri Sanjay Bokolia, Director, Official Language/GAC, Shri Girish Bhatt, Director, Crop Science and Shri Ram Dayal Sharma, Deputy Director, Official Language, ICAR, New Delhi. In this review meeting, Dr. Arjamadutta Sarangi, Director of the Institute welcomed the dignitaries on behalf of ICAR-IIWM whereas, officials nominated by their respective institutes were present. Dr. O.P. Verma presented the Hindi progress report in detail.

ICAR - IIWM Organized a Training Program

ICAR - IIWM, Bhubaneswar organized a training program on 'Sustainable Agricultural Water Management Options under Changing Climate' in collaboration with National Institute of Agricultural Extension Management (MANAGE), Hyderabad, Telangana from August 21-24, 2023 through virtual mode. Dr. S.K. Chaudhari, DDG (NRM), ICAR, New Delhi was the Chief Guest of the inaugural program. Dr. A. Sarangi, Director, of the Institute and Program Director emphasized on the relevance of water measuring devices, soil moisture sensors,

and integration of different models for scheduling irrigation in different crops. A total of 35 trainees from 20 different states of India were participated in this training program. Scientists, Assistant Professors, Agricultural Extension Officers, SMS, Students, Research Scholars, and Business Managers participated in the training program. Dr. B. Renuka Rani, Deputy Director (NRM), MANAGE, Hyderabad, Dr. Ankita Jha and Dr. Dibakar Ghosh, Scientists, ICAR-IIWM, Bhubaneswar acted as coordinators of this training program.

ICAR-IIWM Celebrated Hindi Pakhwada

ICAR - IIWM, Bhubaneswar celebrated *Hindi Pakhwada* during September 14 -29, 2023. Dr. Arjamadutta Sarangi, Director emphasized the importance of official language Hindi and its implementation in official works. Dr. Rabindra Prasad Singh, Director, ICAR-National Institute of Foot and Mouth Disease, Bhubaneswar addressed the officers and employees present in the function and highlighted his views on importance of Hindi Language, history of Hindi day and need for use of Hindi in Government offices. Dr. Man Singh, former Project Director, WTC, ICAR-IARI, New Delhi presented his lecture as a special guest on the topic 'Innovation and policy making for water harvesting' on September 25, 2023. A Hindi workshop was organized on September 20, 2023. Dr. O. P. Verma, Senior Scientist and Sh. K. K. Sharma, Hindi Translator organized this *Pakhwada*.



ICAR - IIWM Organized Participatory Plantation Drive in Tribal Areas

A participatory plantation drive was conducted on September 20, 2023 at the tribal dominated Dandakhumba village (Gopalpur, Badamba, Cuttack, Odisha), under the Government of India's flagship project 'National Initiative on Climate Resilient Agriculture (NICRA)'. In this program, Divisional

Forest Officer, Athgarh, Dr. Jagyandutt Pati, was the Chief Guest and Director, ICAR-IIWM, Dr. Arjamadutta Sarangi was the Guest of Honor. Around 200 tribal farmers from the five adjacent hamlets were participated. About 600 coconut plants were distributed and the use of bamboo to conserve moisture around the coconut pit was also demonstrated. Dr. D.K. Panda and Dr. R. K. Jena, Scientist coordinated the program.



ICAR – IIWM Conducted Student Attachment Training Program

Four final year B.Tech (Agril Engg.) students from Siksha O Anusandhan University (SoA) Bhubaneswar have been successfully completed two-month attachment training programme at ICAR-IIWM, Bhubaneswar during September 29 to November 28, 2023. The program was coordinated by Dr. M. Raychaudhuri, Dr. Dibakar Ghosh, Dr. Roomesh Ku. Jena, Dr. Ankita Jha and Dr. Ankhila R.H. of the Institute.

ICAR- IIWM Participated in Exhibitions

ICAR - IIWM, Bhubaneswar participated in an exhibition held at ICAR - National Rice Research Institute, Cuttack on October 6, 2023, Dr. B. S. Satapathy, Senior Scientist and Dr. Debabrata Sethi, Scientist attended the National Millet Expo 2023 and displayed ICAR-IIWM technologies to the stakeholders. Dr. S.K. Mishra, Dr. B.K. Sethy, Dr. P. Panigrahi, Principal Scientists, Dr. Sanatan Pradhan, Senior Scientist and Dr. R.K. Jena, Dr. Ankita Jha, Dr. Debabrata Sethi, Scientists, Mr. P. Barda and Mr. S. Lenka, Technical Officers demonstrated the technologies in the exhibition.



ICAR - IIWM, Bhubaneswar also participated in an exhibition organized by the National Academy of Agricultural Sciences, New Delhi, hosted by the ICAR-Central Marine Fisheries Research Institute, Kochi during October 10-13, 2023. Dr. R.K. Mohanty, Dr. S.K. Routaray, Dr. Ashok K. Nayak and Dr. D. Sethi attended the exhibition and demonstrated the technologies to the stake holders.

ICAR - IIWM Coordinated Exposure Visit

Agricultural Technology Management Agency (ATMA) facilitated visit of 14 farmers and 6 Agriculture Department Officers Visakhapatnam, Andhra Pradesh at ICAR-IIWM on

November 07, 2023. Dr. Arjamadutta Sarangi, Director, Dr. M. Raychaudhuri, Dr. Pravukalyan Panigrahi and Dr. Debabrata Sethi briefed about the activities of the Institute.

ICAR-IIWM Observed Vigilance Awareness Week

ICAR - IIWM, Bhubaneswar observed vigilance awareness week on the theme 'Public Interest Disclosure & Protection of Informer (PIDPI)' during October 30 to November 06, 2023. Various activities like display of poster in *Hindi, Odia* and English languages, sensitization/interaction meet, awareness *gram sabha* were organized during the week. The program was organized by Dr. S.K. Rautaray, Dr. D. Sethi, Dr. R.K. Jena and Dr. A. Handral of the Institute.



ICAR - IIWM Celebrated 'World Soil Day'

World Soil Day was celebrated at ICAR-IIWM, Bhubaneswar on December 5, 2023. Farmers associated with ICAR-IIWM and students from two different schools viz. *Saraswati Shisu Vidya Mandir* and *Vivekanand Shiksha Kendra*, Bhubaneswar and total 150 participants including 20 farmers and 13 students attended this program. Dr. A. Sarangi, Director, highlighted the significant achievements

of the Institute on agricultural water management. A farmer-scientist's interaction meeting was organized. Debate and painting competitions were held among the students on the World Soil Day theme. The progressive farmers and the students were provided with certificates on this occasion. Dr. K.K. Bandyopadhyay, Principal Scientist coordinated the program.



ICAR-IIWM Celebrated Farmers Day

ICAR-IIWM celebrated National Farmers' Day (*Kisan Diwas*) on December 23, 2023 in Viligram village of Nimapara block of Puri district, Odisha. More than 150 farmers and farmwomen participated in the programme. Dr. S. K. Pattnaik, Ex-professor (Soil Science), College of Agriculture, OUAT was the invited as an expert on the occasion. 500 coconut saplings (var. *Chowghat orange dwarf*) were distributed to about 150 farmers in Nimapara block.

Lecture on Patenting and copyright

ICAR-IIWM organized a lecture in hybrid mode on 'Patenting and copyrights in agricultural' on December 27, 2023. Dr. Amaresh Panda, Professor, KIIT, Bhubaneswar delivered the lecture. Dr S. Mohanty coordinated the program.



Online meeting of AICRP on IWM

ICAR-IIWM organized series of online AICRP on IWM meeting on 'Water resources budgeting of prioritized states' on July 24, 2023. Dr. P. K. Singh, Chief Scientist, AICRP on IWM Udaipur Centre discussed about the water resources budgeting in the state of Rajasthan. 2nd Online AICRP on IWM meeting regarding new proposals on 'Use Wastewater in Agriculture' and 'Use of AI/ML and Sensors in agriculture' was conducted on October 17, 2023. Three research projects were approved.

3rd Online AICRP on IWM meeting on 'Protocols of irrigation scheduling' was organized on November 13, 2023. Dr. S. D. Gorantiwar, Director of Research, MPKV, Rahuri delivered the expert talk in this meeting. 4th online AICRP on IWM meeting on 'Sensor based automated irrigation' was conducted on November 16, 2023 on which Dr. S. D. Gorantiwar delivered an expert talk. All the meetings were coordinated by Dr S. Mohanty, Principal Scientist of the Institute.

Meeting for Scientist of Other ICAR Organizations

On recommendation of RAC, ICAR-IIWM organized series of online meeting with scientists of other ICAR organization to develop synergy and avoid duplication of research. These

meetings were coordinated by Dr. S. Mohanty, Dr. P. K. Panda, Dr. P. P. Adhikary and Dr. B. K. Sethi of Institute.

Details	Date
Meeting with Scientists of ICAR-IIWM and ICAR-CCARI, Goa	August 7, 2023
Scientists of ICAR-IIWM and ICAR-IISWC, Dehradun	August 17, 2023
Scientists of ICAR-IIWM and ICAR Research Complex for NEH region, Barapani	August 25, 2023
Scientists of ICAR-IIWM and ICAR Research Complex Eastern Region, Patna	September 13, 2023

Visit of dignitaries to ICAR-IIWM

Dignitaries	Date
Dr. S.P. Datta, Director, ICAR – IISS, Bhopal	July 27, 2023
Dr. S. K. Ambast, Chairman, CGWB and former Director, ICAR-IIWM	November 2, 2023
Dr. Himanshu Pathak, Secretary DARE and DG, ICAR, New Delhi	November 9, 2023
Dr N.K. Tyagi, former ASRB, Chairman and Dr. S. K. Gupta,	December 12, 2023
Sh Vijay Amruta Kulange, IAS, Commissioner, BMC	December 27, 2023



Activities Under SCSP Project

Under SCSP, 150 mango saplings of variety *Amrapalli* and *Dusheri* were distributed for planting in homestead land, and about 80kg of vegetable seeds including tomato, chilli, french bean, cowpea and okra were distributed to farmers for growing in *rabi* season. About 145 farmers attended the programme.



Activities Under Farmers' FIRST Project

The Farmers' FIRST project has been implemented in three villages i.e. Haridamada, Jamujhari and Giringaput of



Khordha district. For conducting field demonstrations, critical inputs like quality paddy seeds, finger millet seeds, *dhanicha* seeds, vegetable seeds and seedlings, fruit saplings, polythene mulch, pro-trays, coco peats, fertilizers, paddy straw & oyster mushroom spawns, polythene for mushroom farming, vermibeds with earthworm, *Trichoderma viridi* bio-agent and pesticides etc. were provided to the farmers under the project. Various farm implements, viz., 5 HP pump set (2 nos.), 3.2 HP pump sets (3 nos.), Cono weeders (10 nos.), power weeders (2 nos.) and power sprayers (12 nos.) were distributed to the beneficiary farmers in groups for facilitating the farm operations at the new adopted cluster.

Activities Under TSP

On farm trials (2 nos.) and Frontline demonstrations (4 nos.) were organized in two villages (Khaira village, Rayagada dist. and Phatachanchada village, Gajapati dist.) in presence of officials from KVK, Gunupur, and KVK, Gajapati. Institute developed technology on 'Adoption of SRI technique in paddy crop' was introduced in both the villages. Front line demonstrations on 'Paired row bed planting of Maize / vegetables and mushroom cultivation' were exhibited in Khaira village under the aegis of 'Viksit Bharat Sankalp Yatra'

in association with KVK, Gunupur. Emphasis was given on agricultural water management, crop production for higher productivity, profitability and water use efficiency. Total 186 nos. of tribal farmers from both the villages participated and actively interacted on various aspects of the live demonstrations.



ICAR- IIWM Conducted 'Kisan Sampark Sutra' Program

ICAR-Indian Institute of Water Management, Bhubaneswar, Odisha continued 'Kisan Sampark Sutra' with the objective to connect and interact with farmers in virtual mode from different States of India on fortnight basis (7.00 PM onwards). During this period, five programs was conducted in Hindi language

for the farmers across the country and five programs in Odiya language for the farmers of Odisha. A total of 18 topics on water management aspects and popularization of millet crops were discussed and about 395 farmers participated. Dr. M. Raychaudhuri, Principal Scientist coordinated the programme.

CAPACITY BUILDING & TRAININGS

Training and Capacity Building of ICAR- Employees

Official & Designation	Subject	Organization	Period
Dr. P. Sahu Scientist	Data science in agriculture	ICAR-IASRI, New Delhi	September 4-15, 2023
Dr. B. S. Satapathy Senior Scientist	Millets (<i>Shree Anna</i>) - Model crops for sustainable farming, value addition, entrepreneurship development and nutritional security (RCSA 2023)	Society for Millet Research and ICAR-Indian Institute of Millet Research, Hyderabad	September 7-27, 2023

Training/Program Organized for the Farmers by ICAR-IIWM

Subject	Place	Period	Participants
Training cum demonstration programme on 'Generating employment opportunities and enhancing farm income through horticultural enterprises' for farmers from Haridamada, Jamujhari and Barapita villages	Haridamada, Khordha	July 12-14, 2023	76
Farmers Field Day	Khuntapingu, Keonjhar	August 16, 2023	33
Five 'Van Mahotsav' programme cum distribution of 250 grafted mango and guava fruit saplings to adopted farmers	Haridamada and Jamujhari, Khordha	July -August, 2023	182
Training cum demonstration programme on 'Integrated crop and water management in Kharif paddy and rainy season vegetables' for farmers	Khuntapingu, Keonjhar	August 17, 2023	57
Training cum demonstration programme on 'Integrated crop and water management in Kharif paddy and rainy season vegetables' for farmers	Jamuda, Keonjhar	August 18, 2023	51
Orientation workshop cum training programme on 'Crop and water management strategies for enhancing yield and income from rabi season crops' under SCSP Project	Goradapal, Dhenkanal	September 20-21, 2023	110
Training cum demonstration programme on 'Integrated weed management in rice, finger millet and rainy season vegetables'	Haridamada, Khordha	September 29, 2023	54
Swachhta awareness cum cleanliness drive under the 'Special campaign 3.0'	Barapita, Khordha	October 13, 2023	59
Ten 'Rice and millet field days, crop cutting experiments and feedback sharing' under Farmer FIRST Project	Keonjhar and Khordha FFP-adopted clusters	November -December, 2023	145
Swachhta awareness cum cleanliness drive under 'Swachhta Pakhwada'	Jamujhari, Khordha	December 22, 2023	53
Training cum demonstration programme on 'Oyster mushroom farming for additional family income and nutritional security' for farmers	Haridamada, Khordha	December 28, 2023	105

Webinar / Programs / Virtual Meetings Attended by Scientists

Official	Name of the conference/ meetings/ workshop/ symposium/ seminar	Organized by	Period
Dr Dibakar Ghosh	Crop weather watch group committee meeting	Krushi Bhawan, Bhubaneswar	July 31, 2023
Dr. S.K. Rautaray	Workshop on 'Agrotain incorporated urea produces with N-Tegration™ Technology for improving NUE in major cropping systems of India'	ICAR-IISS, Bhopal	August 26-27, 2023
Dr. S.K. Mishra	Virtual consultation meeting on 'Training need assessment of extension functionaries and community cadres'	IMAGE, Govt. of Odisha, Bhubaneswar	September 27, 2023
Dr. Mausumi Raychaudhuri	87th Annual convention of the Indian Society of Soil Science (ISSS)	ICAR-IISS, Bhopal	October 3-5, 2023
Dr. S.K. Rautaray Dr. R.K. Mohanty Dr. Ashok K.Nayak Dr. D. Sethi	XVI Agricultural Science Congress 2023	CMFRI, Kochin	October 09 -13, 2023
Dr. S.K. Mishra Dr. B.S. Satapathy	Zonal review workshop of Farmer FIRST programme at ICAR-ATARI, Kolkata	ICAR-ATARI, Kolkata	October 31, 2023
Dr Dibakar Ghosh	5 th International conference on 'Sustainable natural resource management under global climate change'	Soil Conservation Society of India, New Delhi	November 07-10, 2023
Dr. S.K. Rautaray	2 nd Technical advisory committee meeting & 4 th steering committee meeting of ICAR-NePPA	CIFE, Mumbai	November 16-17, 2023
Dr. S.K. Rautaray	22 nd Biennial National Symposium of Indian Society of Agronomy	ICAR-CCARI, Goa	November 22-24, 2023
Dr. P.K.Panda Dr. Ashis Maity Dr Dibakar Ghosh	XXII Biennial National symposium on 'Climate smart agronomy for resilient production systems and livelihood Security'	Indian Society of Agronomy, ICAR-IARI, New Delhi	November 22-24, 2023
Dr. S.K. Mishra	National review workshop 2022-23 of Farmer FIRST Programme	CSK HPKV, Palampur, Himachal Pradesh	November 28-30, 2023

ICAR-IIWM Participated in ICAR East Zonal Sports Meet

The sports contingent of 20 participants of ICAR-IIWM participated in ICAR Tournament for Eastern Zone (TEZ) at ICAR-NRRI, Cuttack during December 13-16, 2023. Mrs. Subhashree Satapathy, LDC, got 1st prize in Table Tennis (W) singles, 3rd prize in shot put (W) events. Dr. O. P. Verma and Mrs. Subhashree Satapathy got second prize (Silver medal) in mixed table tennis event. Dr. Rajeeb K. Mohanty, Principal Scientist, was Chief-de-Mission and Mr. Rajib K. Dalei, AAO acted as Team Manager.



Swachha Bharat Abhiyan

Three major *Swachh Bharat Abhiyan* programmes, namely, (i) ‘*Swachhta Hi Sewa*’ during September, 15 – October 02, 2023, (ii) ‘*Special Campaign 3.0*’ during October 2-31, 2023 and (iii) ‘*Swachhta Pakhwada*’ during December 16-31, 2023 were organized. Off-campus *swachhta* awareness campaign and sanitation drives were organized in eight villages involving over thousand farmers, farm women and village youths of Balanga, Hansapada, Viligram, Bhilideuli and Sana Nuaharakiri villages in Puri district, and Jamujhari, Haridamada and Barapita villages in Khordha district during October-December, 2023. In addition, *swachhta* drives were also organized in Birbasa urban slum of Salia Sahi, Bhubaneswar; local market and religious places in Rail Vihar NALCO and Shailashree Vihar colony.

On December 27, 2023, Shri Vijay Amruta Kulange, IAS, Commissioner, Bhubaneswar Municipal Corporation (BMC) delivered an Expert Talk on the topic ‘Making Bhubaneswar Clean and Green: Initiatives and Activities’ as the Special Guest for the benefit of all staff, scholars and family members and planted a sapling inside the campus. Ms. Pallavi Behera, Assistant Commissioner, BMC and Mr. Achyutananda Swain, Local Corporator (Ward-16) attended the inaugural programme of the ‘Special Campaign 3.0’ and planted saplings in the Institute campus on October 2, 2023 as a joint venture with the BMC. On the concluding day of ‘*Swachhta Hi Sewa*’ programme, i.e. October 2, 2023, Gandhi Jayanti was celebrated as a mark of respect to the Father of Nation ‘Mahatma Gandhi’ on his 154th Birth Anniversary by starting a special campaign to express our gratitude to the sanitary workers in the name of ‘*Thank You Safai Mitra*’ campaign. Ten ‘*Safai Mitras*’ of the BMC and ICAR-IIWM were felicitated on the occasion by Dr. Arjamadutta Sarangi, Director of the Institute.

An awareness campaign on ‘Mission LiFE’ cum a special ‘Plantation Drive’ was organized on the ‘World Environment Day’ on June 05, 2023 inside the main campus, Mendhasal research farm and in the adopted village of Haridamada with the participation of the Director, staff, farmers and farm women emphasizing on the theme of the Day, i.e., ‘*Beat Plastic Pollution*’. Over 300 saplings of fruit plant (grafted mango,

grafted guava) and timber wood plant (like, Sunari, Kadamba, Australian Teak) were planted inside the campus as well as distributed to the participating villagers. One Farmers’ Day - ‘*Kisan Diwas cum Swachhta Workshop*’ was organized at village Viligram in Nimapada block of Puri district on December 23, 2023, where over 150 farmers and farm women participated. An exposure visit was organized on December 29, 2023 for adopted farmers and staff to the BMC micro-composting centre of Hatiasuni, Bhubaneswar to learn the ‘*Waste-to-Wealth*’ management system. During the year, several drawing and speech competitions on *swachhta* were organized, in which over two hundred staff, scholars and school children actively participated. Two drawing competitions were organized on the topic ‘*Swachh Gaon, Swachh Paribesa ‘O’ Aamara Swasthya*’ for students of Government Ashram School, Haridamada, Khordha on Oct 17, 2023 and on the topic ‘*Swachh Bharat Abhiyan for Clean and Green India*’ for students of Gopabandhu Sikshya Kendra, Chandrasekharpur, Bhubaneswar on Dec 28, 2023. Three speech competitions were organized on the topic ‘*Swachh Bharat Abhiyan: Implications for health, environment and economy*’ for students of Saraswati Shishu Vidya Mandir, Adimata Colony, Mancheswar, Bhubaneswar and IWM staff October 30, 2023. A topic on ‘Importance of *Swachh Bharat Mission* on achieving Clean, Green and Healthy India’ for students of Saraswati Shishu Vidya Mandir, Niladri Vihar, Bhubaneswar and St. Xavier’s High School, Chandrasekharpur, Bhubaneswar was organized on December 29, 2022. The winners were awarded during the concluding function of each programme. In order to inculcate the habit of maintaining cleanliness, six special *swachhta* awards were also given to the staff for ‘*Swachh room*’, ‘*Swachh laboratory*’ and ‘*Swachh quarters*’ (Type-I, II, III & IV quarters) during the *Swachhta Pakhwada* celebration. Shri Radhashyam Mahapatro, Director (HR), NALCO, Bhubaneswar graced as the Chief Guest during the special ‘*Swachhta* programme cum award giving Ceremony’ on December 30, 2023 and distributed awards to all winners.

Dr. S. K. Mishra, Chairman & Nodal Officer, Dr. H.K. Dash, Member, Dr. A.K. Nayak, Co-Nodal Officer, Dr. Prativa Sahu, Member and other members of the SBA Committee coordinated all *swachhta* activities during the year.



For its remarkable *swachhta* activities and initiatives, ICAR-IIWM bagged the 2nd Rank in the ‘*ICAR Swachhta Pakhwada Rank Award for the year 2022*’.

AWARDS, HONOURS & RECOGNITIONS

- Dr. Dibakar Ghosh received ISA Associates Fellow Award at ICAR-CCARI, Goa during XXII Biennial National symposium on 'Climate smart agronomy' during November 22-24, 2023.
- Dr. S.K. Rautaray presented the lead paper on 'Eco-friendly plant health management through agronomic practices' in the National conference on novel strategies and advances in crop health management: Towards technology-driven eco-friendly solutions on December 13, 2023.
- Dr. D. K. Panda was nominated as member of the NGP-DST 'Screening committee on shortlisting of proposals in geospatial science development' by DST.
- Dr. P. K. Panda was invited as Chief speaker in the valedictory function of Hindi *Pakhwada* on September 14, 2023 at CHES, Bhubaneswar.
- Dr. P. K. Panda was invited as Chief speaker in the annual function of *Paribesa Surakhya Abhiyan* on September 29, 2023 at Lohia Academy, Bhubaneswar.
- Dr. A.K. Thakur, Principal Scientist of the Institute visited on a foreign deputation to attend and present an oral paper at the 6th International Rice Congress (16-19 October, 2023) and to attend a consultation meeting and field trip (20-21 October, 2023) at Manila, Philippines. His title of presentation was "Rice Physiology, Yield and Water Productivity Improvements through Modifying Cultivation Practices and Water Management".



TV/Radio programmes

- Dr. A. Sarangi and Dr. P. K. Panda acted as resource person in the TV programme on 'Water productivity enhancement through use of digital agriculture' in DD Odia on August 10, 2023.
- Dr. P. K. Panda acted as resource person in the discussion on 'Need for catch the rain programme of PM' at All India Radio, Cuttack on August 16, 2023.

Joining, Promotion and Superannuation

- Dr. Om Prakash Verma, Sr. Scientist promoted to next higher scale RGP 9000 w.e.f. 07.01.2020.
- Dr. Sanatan Pradhan, Sr. Scientist promoted to next higher scale RGP 9000 w.e.f. 26.06.2020.
- Dr. Dibakar Ghosh, Scientist promoted to Senior Scientist w.e.f. 15.09.2021.
- Dr. Roomesh Kumar Jena, Scientist promoted to Senior Scientist w.e.f. 01.01.2022.
- Dr. Partha Deb Roy, Scientist promoted to next higher scale RGP 7000 w.e.f. 01.01.2020.
- Shri Laxman Singh Tiyu, Technical Officer retired from ICAR service on August 31, 2023 under VRS.

