



## In this Issue

- NEW INITIATIVES
- IMPORTANT EVENTS
- HUMAN RESOURCE DEVELOPMENT
- OFFICIAL LANGUAGE ACTIVITIES
- AZADI KA AMRIT MAHOTSAV (AKAM)
- FARMERS OUTREACH ACTIVITIES
- DISTINGUISHED VISITORS
- SUCCESS STORIES
- PUBLICATIONS
- SALIENT RESEARCH FINDINGS
- AWARDS AND RECOGNITIONS



## From The Director's Desk



India being primarily an agrarian society since ages, agriculture remains the primary source of income for majority of the rural masses/households. In fact, in modern times as well the agricultural produce constitutes a major share of country's exports which accounts for a significant portion of its economy. At the same time, Indian agriculture suffers due to inadequate technological advancements and vagaries of weather/incessant attack of diseases, insect and pests. Therefore the quantity and quality of agricultural produce is hugely compromised in spite of hard efforts of

farmers. Fortunately, there is hope, of late usage of technology in agriculture has gained momentum but still a lot needs to be done. The application of Drones in agriculture has recently been introduced. Walking with the time, Institute organised training on "Drone operation and application in farm field mapping and monitoring" at ICAR-IISWC, Research Farm Selaqui. A total of sixteen (16) staff members were trained by the team from M/s Kambil System Pvt. Ltd. The three days training programme consisted of indoor and outdoor classes on basic drone operation followed by data interpretation. The trainees were sensitized about the flying missions of drone and software's for data calculation and analysis. Plans are afoot at the Institute level to use the technology in ongoing research projects at Research Farm Selaqui and the Research Centres.

With regards to academic engagements, the Institute has been regularly organising and involved in scientific and technical programmes for the advancement of NRM. One such programme was the International workshop on "Climate proofing of watershed development projects with special reference to soil and water conservation technologies in the context of climate smart agriculture" organised at ICAR-IISWC, R.C, Udthagamandalam in collaboration with KSCSTE-Centre for Water Resources Development and Management (CWRDM), Calicut, Kerala during 02-03<sup>rd</sup> May, 2022. The workshop was attended by about 480 participants involving world leading climatologists from India, USA, Germany, Egypt, Lebanon, etc, through virtual platform. During the proceedings, issues like nutrient management in production systems under changing climate scenario, development of location specific mitigation and adaptation strategies to conserve the natural resources and to ensure the food and nutritional security for the future generations were deliberated at length. During the period under report, a good number of farmer outreach programmes were organised under various ongoing programmes at the Institute Head Quarters and its Research Centers (viz. AKAM/TSP /SCSP /Farmer First etc.). This issue includes summary of the activities undertaken during four month period of May to August, 2022. Hope the content of the newsletter keeps you engaged, interested and motivated to wait for the next issue.

M. Madhu

## New Initiative

- Assessment of extractable river bed material from Jakhan 01 and river Swarna at Dehradun under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Dehradun (UK).
- Assessment of extractable river bed material from river Kosi, Ramnagar for the year 2022-23 under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Ramnagar, Uttarakhand.
- Assessment of extractable river bed material from river Sharda at Tankpur for the year 2022-23 under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Tanakpur, Uttarakhand.
- Assessment of extractable river bed material from river Gaula at Haldwani for the year 2022-23 under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Haldwani, Uttarakhand.
- Assessment of extractable river bed material from river Nandhaur and Kailash at Nandhaur for the year 2022-23 under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Nandhaur, Uttarakhand.
- Assessment of extractable river bed material from river Dabka at Ramnagar for the year 2022-23 under Jurisdiction of Divisional Logging Manger (Khanan), UKFDC, Ramnagar, Uttarakhand (UK).

## Important Events [Meetings/Seminars/Workshops etc.]

### ☆ International Workshop on “Climate Proofing of Watershed Development Projects with Special Reference to Soil & Water Conservation Technologies in the Context of Climate smart Agriculture” Organised

ICAR-IISWC, R.C, Udhagamandalam organised a NABARD funded International Workshop on “Climate Proofing of Watershed Development Projects with special reference to soil and water conservation technologies in the context of Climate Smart Agriculture” in collaboration with KSCSTE-Centre for Water Resources Development and Management (CWRDM), Calicut, Kerala during 02-03<sup>rd</sup> May, 2022 at Udhagamandalam in a hybrid mode.



The workshop was attended by about 480 participants involving world leading climatologists from India, USA, Germany, Egypt, Lebanon, etc. Shri A. Annadurai, IAS, Director of Agriculture, Government of Tamil Nadu, Prof P.V. Vara Prasad, Director, Sustainable Intensification Innovation Lab., Kansas State University (USA), Shri. T. Venkatakrishna, CGM, NABARD Chennai Region

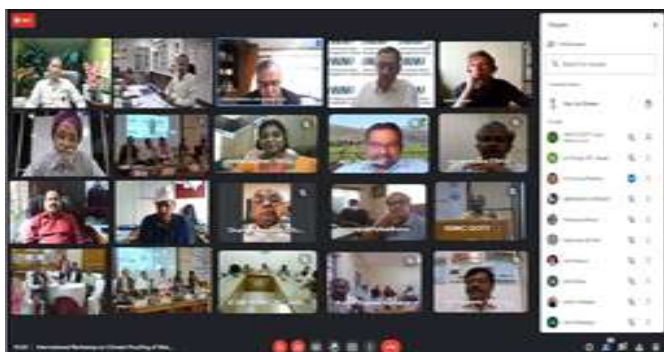


joined as special guests through virtual platform. Dr K Kannan, Head, ICAR-IISWC, Research Centre, Udhagamandalam welcomed all the delegates attended. The workshop started with a special guest address by Prof. P V Varapasad, who outlined the importance of various sustainable developmental approaches under climate change scenario to ensure food and nutritional security at global level. In his welcome address, Shri. T. Venkatakrishna, discussed about the NABARD initiatives both at regional level and national level to address the issues related to climate change. Shri A. Annadurai, IAS, discussed about the need for multi institutional approach for climate proofing the watershed projects in Tamil Nadu state for doubling the farmers' income. The Guest of Honour, Dr Monika Rana, IAS, Project Director, Special Area Development Programme, urged for harnessing the research advances made in soil and water conservation technologies to provide farmer centric solutions to the lingering agricultural problems in the Nilgiris region through SADP programme. Dr Pradip Dey, Project Coordinator, All India Co-ordinated Project (STCR) stressed to the need for proper nutrient management in different

production systems under changing climate scenario to achieve the sustainability. Dr M. Madhu, Director, ICAR-IISWC, Dehradun and convener in his presidential address accentuated the need for development of location specific mitigation and adaptation strategies to conserve the natural resources and to ensure the food and nutritional security to the future generations. Chief guest Dr A. K. Sikka, former DDG (NRM), ICAR and India representative IWMI, New Delhi., emphasized on the need to mitigate the impacts of climate change through Greenhouse Gas (GHG) mitigation, nutrient cycling and by promoting carbon credit policy.



Keynote addresses were delivered by Prof V Geetha Lakshmi, Vice-Chancellor, TNAU, Coimbatore; Dr J.S. Samra, Former DDG (NRM), ICAR & Sr. Consultant, CRRID, Chandigarh; Prof. Dirk Hölscher, Tropical Silviculture and Forest Ecology, Faculty of Forest Sciences and Forest Ecology, Georg-August-Universität, Göttingen, Germany; Dr Ajit Govind, Climatologist, ICARDA, Lebanon; Dr Karam A Elzopy, Professor, Alexandria University, EGYPT; Prof. R. Srinivasan Director, State Spatial Laboratory, USA, Er. Rathakrishnan, Executive engineer from Agricultural Engineering Department, Dr Chitra Devi, Joint Director (Agri.) and Dr Sibhila Mary, Joint Director of Horticulture and Dr U. Surendran and Dr Arun from CWRDM and many other scientists participated in the farmers-scientists interaction. The workshop ended with a plenary session and concluding remarks by the convenor Dr M. Madhu and vote of thanks by the Dr P. Raja,



### ☆ Training on “Drone operation and Application in Farm Field Mapping and Monitoring”

Three days training on “Drone Operation and Application in Farm Field Mapping and Monitoring” was conducted during 19<sup>th</sup> to 21<sup>st</sup> May, 2022 at ICAR-IISWC, Research Farm Selakui under AKAM. A total of sixteen (16) staff members were trained by the team from M/s Kambil System Pvt. Ltd.

The training programme was coordinated by Dr Gopal Kumar (Pr. Scientist); Dr M. Sankar (Sr. scientist and OIC farm) and Sh. Rakesh Kumar (CTO and Farm Superintendent).



While inaugurating the training, Dr M. Madhu, Director, IISWC underlined the need for drone training in the Institute. Er. S. S. Shrimali, Sr. Scientist also discussed the importance of this training.

The three days training programme consisted of basic drone operation followed by data interpretation class. The trainees were sensitized about the flying missions of drone and software's for data calculation and analysis. Every participant was given chance to try their hand at drone flying as well. The training concluded with the feedback session of the trainees.



### ☆ 8<sup>th</sup> International Yoga Day celebrated

The eighth International Yoga Day was celebrated on 21st June 2022 at ICAR-IISWC, Dehradun and its Research Centres. A variety of

programmes viz. motivational talks, yoga sessions etc were organised on the occasion. At Head Quarters Dehradun, the practice sessions of Yoga were held under the guidance of Swami Prem Tirth Ji, Devbhoomi Yog Peeth Haridwar for 5 days at headquarters.

The yoga session was followed by knowledge sharing session on various aspects of yoga and life style for physical and mental wellbeing by Swami Prem Tirth. As part of the IDY-2022 events, a talk on Art of Devine Balance for happy family Life was delivered by Er. Rajesh Dave, Co-founder of Team FARM Bridge

Foundation for CSR in Farmers & Rural Women empowerment on 20<sup>th</sup> June 2022. Three members from local Brahamakumari Sansthan also visited and guided the staffs for happy living. Dr Dave highlighted the need of balance between family, social, financial and spiritual pillars of happy and peaceful life.

The various events at the Institute level in the Festival of Yoga and wellbeing were coordinated by the nodal officer Dr Gopal Kumar under the guidance of Dr M. Madhu, Director. About 163 participants attended the various events organized to celebrate the International Yoga day at the Institute Head Quarters.



D. Dun



Agra



Ballari



Koraput



Kota



Udhagamandalam

Glimpses of programmes organised at Head Quarters and Research Centres on the occasion of IYD-2022

## ☆ Training on “Soil and Water Conservation Technologies for Erosion Control”

ICAR-IISWC, R.C, Udthagamandalam organised a two days training programme on the theme “Soil and Water conservation Technologies for Erosion Control” during 27-28<sup>th</sup> May 2022. The programme was sponsored by Agricultural Department, Govt. of Tamil Nadu under ATMA Scheme. Mrs. Shibila Mary, Joint Director of Horticulture, The Nilgiris, Govt. of Tamil Nadu chaired the inaugural session. The chief guest in her address discussed the scope and importance of organic farming to achieve the sustainability under climate change scenario. Dr K. Kannan, Pr. Scientist and Head of the Centre in his presidential address reiterated the necessity of adopting proper soil and water conservation practices to face the changes of climate change implications which is the burning issue faced all over the world. Dr P. Sundarambal, Pr. Scientist and the Course Director, welcomed the gathering and elaborated upon the course content of the programme.



The programme was attended by 40 farmers from the Ambasamudram Block, Trunelveli district, Tamil Nadu. A wide range of topics such as agronomic measures for erosion control and improved practices for higher crop productivity, soil and water conservation practices and rain water harvesting, integrated nutrient management for soil quality improvement and higher crop productivity *etc.*



were discussed during technical session. Also, to provide exposure on various soil & water conservation technologies a field visit to Research Farm, Udthagamandalam and Iduhatti model watershed was organised

## ☆ Training on “Effective Water Management for Precision Agriculture”

The four weeks [09<sup>th</sup> May, 2022 - 04<sup>th</sup> June, 2022] training programme on “Effective water management for precision agriculture” organised for under graduate students of ANGRAU, Guntur, Andhra Pradesh concluded on 04<sup>th</sup> June, 2022. Forty (40) students (32 girls and 8 boys) from 6 constituent colleges of ANGRAU, Guntur participated in the training programme.

The training programme covered various aspects of effective water management *viz.* water budgeting, rainfall analysis, water harvesting structures, multiple use of water, losses from water bodies and control measures, crop water requirement and irrigation scheduling, water quality assessment, ground water recharge methods, rain water harvesting, hydrograph analysis, micro irrigations, map reading and delineation of watershed *etc.* Lectures and practicals were conducted by Scientists, Technical Officers and faculties from Headquarters and Research Centres.



Dr D.V. Singh, Head (actg.), HRD&SS Division and Course Director apprised about the coverage of training and its course curriculum. Dr D. Mandal, National fellow congratulated the students for completing the training programme and explained about the self-help way of learning.

During Valedictory function, Dr M. Madhu, Director of the Institute emphasized on need of the effective water management both in agriculture and in day to day life.



### ☆ World Environment Day

ICAR-IISWC, Dehradun celebrated World Environment Day celebrated on 05<sup>th</sup> June, 2022 at village Rani Pokhari, district Dehradun. On the occasion, Shri Kailash Choudhary, Union Minister of State for Agriculture and Farmers Welfare, graced the occasion as Chief Guest. Dr M. Madhu, Director, ICAR-IISWC extended warm welcome to the Hon'ble minister. The programme commenced with planting of different trees like Kalpvriksh, Muolshree, Amaltas and Gulmohar on community land in Rani Pokhari village.



Dr M. Madhu urged the farmers to adopt Integrated Farming System for higher profitability and restoration of proper ecosystem services. He also advocated adoption of cow in the agriculture production system for better crops, soil fertility and family health. Farmers from Thano, Bhogpur, Rani Pokhari and Doiwala villages of Dehradun address encouraged the farmers to restrict the use of single use plastic, adoption of solar energy, scientific composting and management of crop residues and crop diversification. He further underlined the threats to ecosystem, disturbed water cycle, reduced rainy days, uneven and uncertain weather conditions resulting into reduction of agriculture production and degrading health of soils and ecosystem.

Hon'ble minister touched upon a wide range of topics and schemes initiated by the State as well as Central Government for the welfare of farmers and had a fruitful interaction with the farmers on vital issues and their day to day problems in farming. Farmers shared problems related to scarcity of irrigation water, crop damage by wild animals and stray cattle. Farmers also expressed their views on need of technology backstopping on the issue of use of insecticides, pesticides and other agrochemicals in agriculture. Dr Charan Singh Head (actg.), Division of plant Science, Dr D.V. Singh, Head (actg.) Division of HRD&SS and Dr Lekh Chand, Pr. Scientist also interacted with the farmers



### ☆ Training on “IWM for Strengthening PMKSY”

ICAR-IISWC, R.C, Udhagamandalam organised four days online training programme entitled “Integrated Watershed Management for Strengthening PMKSY” during 11-14<sup>th</sup> July, 2022 in collaboration with MANAGE, Hyderabad. Dr K. Kannan, Pr. Scientist & Head of the Center and the Course Director, welcomed the gathering and explained about the course content of the training programme. Dr Renuka Rani, Deputy Director, MANAGE, Hyderabad discussed about the MANAGE initiatives in strengthening the extension network associated with watershed development programmes. Dr Shakeela, V, Director, MS Swaminathan Research Foundation, Wayanad, Kerala was the guest of honor for the inaugural session. In her address, she discussed about the activities taken up by MSSRF for building a sustainable water security systems in Southern India.

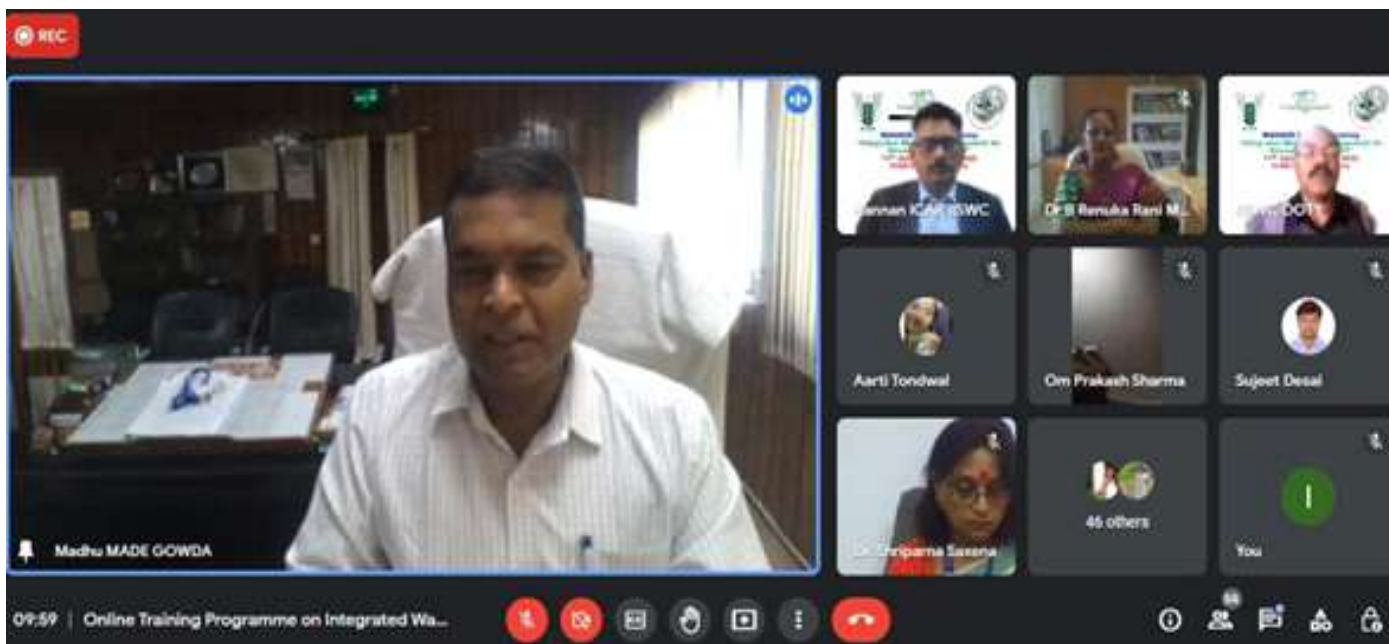
Dr M. Madhu, Director, ICAR-IISWC, Dehradun in his presidential address stressed the need for convergence of programmes under ministries of rural development, panchyati raj, environment and forests, waters resources, agriculture and allied sectors

and other state programmes with PMKSY for sustainable development of watershed projects. The programme was attended by 40 Group-A officers from ICAR institutes, SAUs, KVKs and also extension workers from other state government departments.

During the technical sessions, the topics such as Watersheds in the new paradigm of development: IWMP to PMKSY; Socio economic aspects, people participation in watershed programme; Land Resource Inventory (LRI) for watershed planning and development. DLT measures, ground water development and artificial recharge components under PMKSY; Remote sensing and GIS in watershed delineation and Management; Remote sensing and GIS in watershed delineation and management;

Climate smart agriculture in integrated watershed management; Water Policy: Issues, Opportunities with reference to Climate Smart Agriculture; Agronomical measures for resource in conservation in watersheds; Integrated Watershed Management for Resource Conservation and for Rural Livelihood security; Innovations in Agriculture Extension and other topics pertaining to the theme area were discussed by eminent speakers.

The programme was coordinated by Dr K. Kannan, Principal Scientist and Head; Dr P. Raja, Principal Scientist; Dr Sudheer Kumar Annepu, Scientist from the Research Centre, Udhagamandalam and Dr Renuka Rani, Deputy Director from MANAGE, Hyderabad.



## ☆ International Year of Millets -2023

ICAR- IISWC, R.C, Udthagamandalam organised one day training cum awareness programme on “Importance of millets in nutritional security and increased farmer's income” under AKAM for celebration of International Year of Millets -2023 at TSP adopted tribal village Boothanatham, Gudalur Taluk, The Nilgiris District, Tamil Nadu on 13<sup>th</sup> July, 2022. Dr S. M. Vanitha, Scientist, extended warm welcome to the participants and discussed the nutritional benefits of millets in human diet and increasing demand for the nutritive millets in the market. Dr S. Manivannan, Pr. Scientist, briefed about the importance of cultivating millets, nature of the crop and its environmental suitability. Dr H.C.Hombegowda, Sr. Scientist, discussed the package of practices and crop sequences suitable for its cultivation. Participants had fruitful discussion with the scientists regarding the cultivation aspects of different millets, its suitability and availability of markets. Amongst the participating farmer's 25 farmers, interested in cultivation of millets, were identified and seed of improved variety of Finger millet (Ragi) distributed for cultivation. The participating farm women discussed different types of value added products that can be prepared from Ragi and consumed.



## ☆ National Workshop cum Stakeholders Meet on “Climate Resilient Natural Farming for Sustainable Agriculture”

ICAR- IISWC, R.C, Udthagamandalam and Centre for Natural Farming and Sustainable Agriculture (CNFSA), Annamalai University, Chidambaram, Tamilnadu jointly organised National Workshop cum Stakeholders Meet on “Climate Resilient Natural Farming for Sustainable Agriculture” during 22-23<sup>rd</sup> July, 2022 at Udthagamandalam. Dr K. Kannan, Head(actg.) and Convener welcomed the august gathering and Dr R.

Raman, Director (CNFSA) and organizing secretary, briefed about the workshop. Prof. Dr R. M. Kathiresan, Honorable Vice Chancellor, Annamalai University, Chidambaram was the chief guest of the function. Prof. Dr R.M. Kathiresan, in his address discussed about the natural farming principles and ways to revive the ancient practices of Indian agriculture. He further emphasized the significance soil and water conservation and also incorporation of animal components in the domain of agriculture for the sound natural farming practices for increasing the farmers' income. Dr M. Madhu, Director, ICAR-IISWC, Dehradun in his presidential address stressed the need for Natural Farming practices for the improvement of soil health and for the conservation of natural resources. He also envisioned the need of initiating a national level project on climate resilient natural farming for improved natural resource management towards achieving the dream of our Honourable Prime Minister. Shri Ravindra Kumar, Regional Director, Regional Centre for Organic and Natural Farming, South Zone, Bengaluru and Dr K Jayabalan, Former DDG, Geological Survey of India, Kolkata were the guest of honours. Dr K. Jayabalan in his address emphasized the need for site-specific and crop specific Natural Farming practices for improving soil health and farmer's livelihood security.



The inaugural function was followed by the technical sessions in which experts viz., Dr N. Ravisankar, Principal Scientist & National PI (NPOF) ICAR-IIFSR, Modipuram; Prof. E. Somasundaram, Director, ABD, TNAU, Coimbatore; Prof. R. Raman, Director, CNFSA Annamalai University, Chidambaram; Dr P. Kumaravadivelu, Head ICAR-KVK, Coimbatore discussed about emerging trends and challenges with more focussed on crop diversification, soil health and fertility management in natural farming under changing climate conditions for the benefit of all the stakeholders. In continuation to the technical session, stakeholders – scientists' panel interaction was organized in which farmers from



Tamilnadu, Kerala, Andhra Pradesh and Karnataka participated along with their co-ordinators both in online and offline mode and shared their experiences in Natural Farming. The programme was attended by more than 250 research scholars, students, farmers, and subject matter specialists from KVKs and other extension workers from the state government departments across the nation. The panel discussion was moderated by Prof. E. Somasundaram, Director, TNAU, Coimbatore. As a part of the workshop, exposure visit to Natural Farming field near Kothagiri was also arranged for the benefit of participating farmers. The programme was co-ordinated by Dr P. Raja, principal scientist & organizing secretary. Dr K. Rajamohan, associated scientist (CNFSA) and Joint organizing secretary & all other dignitaries and panellists also graced the occasion. The vote of thanks was proposed by Dr P. Sivasakthivelan, Associated Scientist (CNFSA) and Joint organizing secretary.



### ☆ Training Programme for IFS Probationers

The valedictory Function of twelve day training programme (18-29<sup>th</sup> July, 2022) on Soil and Water Conservation and Watershed Management organised by ICAR-IISWC, Dehradun for Indian Forest Service (IFS) Probationers Batch 2021-23 and sponsored by Indira Gandhi National Forest Academy (IGNFA), Dehradun, was organized at IGNFA, Dehradun on 29<sup>th</sup> July, 2022.

The occasion was graced by Hon'ble Union Cabinet Minister, Govt. of Uttarakhand, Shri Satpal Ji Maharaj, as Chief Guest. Shri Satpal Ji Maharaj in his address lauded both the institutions for joining hands in organising the Training Program which was indeed the need of the hour. He stressed on the importance of soil and water conservation at the present times when the entire world is facing the challenge of land degradation. Hon'ble Minister urged the young probationers to work full throttle with spirit and energy for the Nirman of "New Bharat" while tackling the social issues and environmental causes.



Dr M. Madhu, Director, ICAR-IISWC urged the IFS probationers to understand the importance of the natural resources and incorporate the concepts and techniques learnt during the training. Sh. Bharat Jaoti, Director, IGNFA, Dehradun expressed gratitude towards Chief Guest for his gracious presence. He congratulated the probationers on successful completion of the module and wished that they apply the knowledge gained during the course in their practical field. IGNFA, the sponsoring agency of this training, felicitated Chief Guest on this occasion and also felicitated the faculty members from ICAR-IISWC, Dehradun who were a part of this training. The programme concluded with a formal Vote of Thanks by Sh. Amit Kumar, Course Director, IGNFA, Dehradun.



### ☆ 123<sup>rd</sup> Batch of Four Month Regular Training Programme

The four month regular training programme (123<sup>rd</sup> batch) "Certificate Course on Soil & Water Conservation & Watershed Management" was organised during 22<sup>nd</sup> April, 2022 to 21<sup>st</sup> August, 2022 at the Institute Hqrs., Dehradun. A total of 27 Officers including seven women Officers representing six states (Punjab-9; Madhya Pradesh-5; Meghalaya-4; Chattisgarh-4; Nagaland-2 and Kerala-1) and two Scientists from ICAR-IISWC participated in the programme. The valedictory function was organised at ICAR-IISWC, Dehradun on 20<sup>th</sup> August, 2022.

Dr Subash Singh, Director Soil Conservation, Jharkhand graced the occasion as Chief Guest and gave away the merit certificates to the merit holders for their outstanding performance during the training. The overall merit certificate of 123<sup>rd</sup> batch was bagged by Ms. Deepika from Punjab for her excellent performance who was also awarded merit certificate for her performance in Conservation Engineering. The Certificate of Merit for Integrated Watershed Management, Conservation Agronomy and Soil Management for Controlling Land Degradation was awarded to Dr Abhimanyu Jhahria, Scientist ICAR-IISWC Dehradun.

Dr Matber Singh, Sr. Scientist, ICAR-IISWC, Dehradun was awarded Merit certificate for Conservation Forestry while the Merit for Study Tour was bagged by Mr. Prince T. Kurian from Kerala. Hon'ble Chief Guest, Dr Subhash Singh in his address highlighted the importance and enormity of the problem of soil and water conservation and urged the trainees to be the real ambassadors of the Institute. He expressed his gratitude to ICAR-IISWC, Dehradun

for making him a part of the Valedictory Programme. Dr M. Madhu, Director, ICAR-IISWC, Dehradun in his address urged that the trainees must understand the need of the people for whom the work is targeted. This would ensure better success in the management of watershed and ensure inclusive growth of the farming community.

Dr D. V. Singh, Head Division of HRD&SS presented the overall training report of the four months Certificate Course. Experts in different fields were invited from esteemed Institutes to cover the subjects on the basis of feedback of earlier batches. The module of this training programme consisted of 47 % practical and 53% theory.

During the feedback session, the participants acknowledged and appreciated the efforts made by the IISWC, Dehradun in successful organization of the training programme. Dr Indu Rawat, Sr. Scientist, coordinator, proposed a formal vote of thanks. The programme was attended by all the Heads of Divisions and other Scientific and Technical staff members.



## Human Resource Development

### Capacity Building (in-house employees)

- Attended International Workshop on “Climate Proofing of Watershed Development Projects with special reference to Soil and Water Conservation Technologies during 02-03<sup>rd</sup> May, 2022 organized by ICAR-IISWC, R. C, Udhagamandalam, Tamil Nadu.
- All the scientists participated in Managing soil for food and climate security and advances SDGs of the UN by Dr Rattan Lal on 10<sup>th</sup> May under AKMA by ICAR.
- Participated in an International webinar on Scaling Effects on Runoff Assessment /Monitoring” organized by ICAR-IISWC, R.C, Udhagamandalam on 31<sup>st</sup> May, 2022.
- Attended training programme on “*Prakartik krishi Vishay per ek Divasiya Prashishan*” at KVK Datia.
- ICAR-IISWC, R.C, Chandigarh organised webinar entitled “Horticulture: A Potential Sector for Livelihood Security in Hilly Regions”.
- ICAR-IISWC, R.C, Vasad organised webinar entitled “Natural Farming – A Comparative Assessment” on 30<sup>th</sup> June, 2022. Participation: 67.

## Capacity Development (Programmes organised for stake holders)

- ICAR-IISWC, R.C, Koraput organised three weeks In-plant training On “Soil and Water Conservation & Watershed Management” during 23<sup>rd</sup> May, 2022 to 11<sup>th</sup> June, 2022 .A total of 18 students of B.Tech. Agril. Engg participated.
- ICAR-IISWC, R.C, Ballari organised one month summer training programme for B. Tech (Agril. Engg.) students on “Soil & Water Conservation and Watershed Management" inaugurated at ICAR-IISWC, RC, Ballari during 13<sup>th</sup> June to 12<sup>th</sup> July, 2022. A total of 12 B.Tech students participated.
- ICAR-IISWC, R .C, Kota organised One Month Training Programme on "Soil and Water Conservation Engineering and Watershed Management" during 01<sup>st</sup> to 30<sup>th</sup> June , 2022
- ICAR-IISWC, R.C, Udhagamandalam organised one month Institutional Training Programme on “Soil & Water Conservation and Watershed Management” during 01<sup>st</sup> -to 30<sup>th</sup> June, 2022. Total 38 B.Tech students participated.
- CAR- IISWC, R.C, Chandigarh organised one month In Plant Training on “Soil and Water Conservation and Watershed Management” for B. Tech. students during 01<sup>st</sup> to 30<sup>th</sup> June,2022. Total 33 numbers of students participated.
- ICAR-IISWC, R.C, Ballari organized one month summer practical training programme on “Soil & Water Conservation and Watershed Management” for B.Tech (Agril.Engg) students during 13<sup>th</sup> June, 2022 to 12<sup>th</sup> July,2022. A total of 12 B.Tech students including 7 girls Participated.
- ICAR-IISWC, R.C, Udhagamandalam ICAR-IISWC, RC, Kota, organised 35 days training programme under RAWE [Rural Agricultural Work Experience] during 01<sup>st</sup> July, 2022 to 04<sup>th</sup> August, 2022. 29 Under Graduates (Agriculture) from Career Point University, Kota participated in the programme.
- organized one month Institutional training programme on “Soil & Water Conservation and Watershed Management” during 18<sup>th</sup> July,2022 to 17<sup>th</sup> August,2022. Total of 20 students Participated.
- ICAR-IISWC, R.C, Koraput organized one month Inplant training programme on “Soil & Water Conservation and Watershed Management” during 25<sup>th</sup> July,2022 to 24<sup>th</sup> August,2022. Total 14 students from Swami Vivekananda College of Agricultural Engineering and Technology and Research Station, Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh participated in the training programme.
- ICAR-IISWC, R.C, Kota, organised one month training for B.Tech (Agri. Eng.) on “Soil and Water Conservation and Watershed Management” during 25<sup>th</sup> July,2022 to 24<sup>th</sup> August,2022.
- ICAR-IISWC, R.C, Udhagamandalam in collaboration with MANAGE, Hyderabad organised a training programme on “Community based Climate Risk Management through Watershed Development” in online mode, during 02-04<sup>th</sup> May, 2022. Dr M. Madhu, Director, ICAR-IISWC in his inaugural address elaborated upon the importance of community and local institutions for development and management of watershed under the climate change scenario. A total of 64 participants across 21 states from SAUs, KVKs and other research organizations, SAMETIs and NGOs working in the field of agriculture and watershed management *etc.*, senior and middle level extension functionaries from the department of agriculture, IWMP, irrigation and other line departments attended the programme. In all, 12 lectures covering different topics such as climate change, community watershed management, ecosystem services, water harvesting, agroforestry, common property resources and some of the case studies were discussed. Dr K. Kannan, Head, ICAR-IISWC, R.C, Udhagamandalam expressed his views during the valedictory session; the programme was co-ordinated by Dr S.M. Vanitha, Scientist ICAR-IISWC, RC, Udhagamandalam and Dr B. Renuka Rani, Deputy Director (NRM), MANAGE, Hyderabad.



## Official Language Activities

- ICAR-IISWC, R.C, Koraput, organised Hindi Workshop to promote the progressive use of official language Hindi and related acts, rules etc on 29<sup>th</sup> June, 2022. All the officers and employees working in the center participated in the workshop. Mrs. Meena Naraj (Hindi teacher, Sunabeda) was the guest speaker. Dr D.C. Sahu, Pr. Scientist and Head (act) Presided over the function. Mrs. Meena Naraj in her address underline constitutional obligation to work in the official language and emphasized on the usefulness of such programmes while stressing on doing maximum work through the medium of Hindi language. Official Language Officer Dr Rajesh Bishnoi discussed the Official Language Policy, various forms of correspondence such as office notes, circulars, office memorandums, office orders, terminologies and practical grammatical problems and their solutions and discussed the main points of the Official Language Policy. The workshop proved to be very useful and purposeful.



- The Quarterly Workshop was organised at ICAR-IISWC, R.C, Udhagamandalam, Nilgiris, Tamil Nadu on 27<sup>th</sup> June, 2022. The programme was inaugurated by Dr SM Vanitha, Scientific and Hindi Officer, ICAR-IISWC, R.C, Udhagamandalam. Dr K. Kannan Pradhan, Scientist and Center Head, Research Centre, Udhagamandalam informed about the importance of usage official language in the office and introduced the guest of honour Mrs. Jayakumari Pal, Principal, Dakshina Bharat Hindi Prachar Sabha, Udhagamandalam, Tamil Nadu. Mrs. Jayakumari Pal delivered a special lecture on Hindi sentence formation and grammar and also gave practical exercises on Hindi sentence

formation. All the scientific, technical, administrative officers and other employees of the center participated in the workshop.



- ICAR-IISWC, R.C, Kota organised a workshop on "Strong Possibilities of Development of Hindi in Future" on 20<sup>th</sup> August, 2022. Speaking on the occasion, Dr Ashok Kumar, Pr. Scientist & Head (actg.) said that for the development of Hindi, we need to create mindset to accept the popular words of any language. The Oxford Dictionaries also add many words of common usage to its repository every year. He further stressed on the need to speed- up the efforts of Hindi-friendly technical development. Dr Shashi Prakash Chowdhary, Retired, Associate Professor, Arts College, Kota delivered the Keynote Address.



Dr Chowdhary underlined the importance /usefulness of Hindi in future, as Hindi is the fastest growing ideological and commercial language of the world. Official language In-charge Shri Kamlesh Kumar also expressed his views on the occasion and said that one must feel pride in working in Hindi and need not to have any

inferiority complex.

- ICAR-IISWC, R.C, Kota organised one day workshop entitled “*Hindi Karyashala-Karyalayeen prakriya me hindi Tippan*” on 25<sup>th</sup> June,2022. The workshop was attended by Scientists/ Professionals (22), Students/ Scholars (23) and farmers (05).

## Azadi Ka Amrit Mahotsav (AKAM)

- ICAR-IISWC, R.C, Kota, organized an interface meeting with all the stakeholders on 27<sup>th</sup> May, 2022 to share the recommendations of the research projects completed at the centre. Speaking on the occasion, the chief guest, Dr Pratap Singh, Director of Research, Agriculture University, Kota, appreciated the work done at the center and underlined the importance of such interactions as this type of meeting helps in disseminating important information to the farmers and other departments. Also, gets the right guidance for future research work. Special guest and Joint Director Agriculture, Dr Ramavtar Sharma remarked that the research and extension departments together have to overcome the challenges of the coming times and increase the income of the farmers and make inclusive development of agriculture. Dr Ashok Kumar, Principal Scientist and Head (acting) of the Research Centre presented briefly the achievements made during last five years and enlisted the research, training and extension activities of the Centre. The recommendations of three recent research projects completed at the center were presented by project in-charge Dr I, Rashmi, Dr Gopal Lal Meena and D. Kuldeep Kumar. In this meeting, Dean (Agriculture), Career Point University, Dr S.K. Trivedi, Project Manager, Watershed Development, District Banra and Jhalawar, Dr. Mahendra Singh, in-charge of Krishi Vigyan Kendra Kota, Dr D.K. Singh, in-charge of Krishi Vigyan Kendra, Antar, Dr S., In-charge of Sant National Center of Excellence Nantak. .Ale. Jangid, Deputy Director Agriculture, Kota Dr Khemraj Sharma, Deputy Director Horticulture Dr A.L. Meena, NABARD District Development Manager Shri RP Sharma, Kshatriya Manager Shri L.R. Chaudhary and Akashvani Kota Kshatriya Extension Officer Shri Hari Om Meena and others including progressive farmers of village

Pali and Kaririya gave their presence and discussed the research recommendations.



- ICAR-IISWC, R.C, Koraput and MSSRF, Jeypore jointly celebrated “Azadi ka Amrit Mahotsav (AKAM)” by organising one day training programme on Bio-Input production (Vermicompost) and its uses cum distribution of vermibed and micronutrients kit to tribal farmers on 20<sup>th</sup> May,2022. On this occasion, Dr M. M. Hossain, Director, MSSRF, Jeypore graced the occasion as chief guest and urged the farmers to adopt low cost vermin-composting and its benefits to the farmers. Dr D.C. Sahoo, Head (actg.), highlighted the importance of vermin-compost in improving soil health and practicing natural farming for sustainable agriculture. Dr J. Dash, Scientist advised the farmers on the technical aspects of establishing composting units.



Address the gathering, Dr J. Lenka, Scientist focused on the different essential and ideal conditions of worm growth, reproduction, and health. Low cost vermin-bed preparation was demonstrated as well as arranged video presentation on installation of vermi-bed and filling of bedding material. Do's and don'ts related to vermin-compost preparation and care of earthworms were shared with the farmers. Farmers. A total of twenty one farmers (15 male and 6 women farmers) from different villages of Koraput were participated in the programme. During interaction session farmers query were clarified by Scientists and Technical Officers.



■ ICAR-IISWC, R.C, Koraput organised a training cum input distribution programme on 05<sup>th</sup> May, 2022 at main office building, Sunabeda, Koraput district under TSP & SCSP celebrated “Azadi ka Amrit Mahotsav (AKAM)”. A total of 32 (12-SC & 20- ST) farmers participated in the training programme. Dr D. C. Sahoo, Head of the Centre, interacted with the farmers and briefed about the use of vermibed and their impact on their livelihood income. He also highlighted the importance of the micronutrient fertilizer in maintaining soil health.



Dr Jotirmayee Lenka, Scientist and Coordinator of the training programme, explained the vermin-compost and their uses on different crops and also briefly

explained how to install the bed and preparation of the vermin-compost as well as vermi-wash collection, their uses on different crop spp. And marketing of the vermin-compost and earthworm. Portable vermin-bed and micronutrient fertilizer kit were distributed to the 20 ST farmers and 24 kg Earthworm were distributed to 12 SC farmers. During the interaction session, the farmers were made aware about the management of different disease pest on vegetable crops and maintenance of the vermibed. Success story with videos on use of portable vermin-bed in odia and hindi language were shown to the farmers.



■ ICAR-IISWC, Dehradun organised three days (08<sup>th</sup>-10<sup>th</sup> June, 2022) training programme on “Scientific Goat Farming” under the “Azadi Ka Amrit Mahotsav” in collaboration with ICAR-Central Institute of Goat Research (CIRG), Makhdoom for Boxa tribal farmers from Juldi, Shahpur - Kalyanpur villages, Vikasnagar, Dehradun under the Tribal Sub-Plan. In this programme, 150 tribal farmers were trained for advanced goat farming techniques. During the closing ceremony, the items *viz.* grain storage bins, torch lights, umbrellas, *etc.* useful for goat farming along with the relevant pamphlets were also distributed to the participating farmers.



■ ICAR-IISWC, Research Centre, Ballari organized a “Kissan Goshti” as a part of the Azadi Ka Amrit

Mahotsav on 12<sup>th</sup> August, 2022 at its Research Farm, Near Laskminagar Camp, Ballari. About 25 farmers from Lakshminagar Camp and Sridharagadda villages participated in the programme. The programme was presided over by Dr B.S. Naik Head (actg.) of the centre, and Shri. Basavaraju, President of Sridharagadda Grama Panchayat attended the programme as special guest. Shri. Basavaraju, in his address appealed to the scientist to have greater interactions with the farmers for better dissemination of information to the farming community. Dr M. Prabhavathi discussed the importance of soil and new concept of natural farming for miniatous of soil fertility and productivity. Dr Ravi Dupdal Scientist discussed economics of crops cultivation and market. Mr K.N. Ravi Scientist explained the importance of extension exposure to the farmers and modes available for acquiring knowledge about farming practices. Dr B.S. Naik underlined the importance of soil and its conservation to the farmers, plantations and dryland horticulture for income security and significance of Har Ghar Tiranga Programme. The “Kissan Goshti” concluded with handing over a national flag to the participating farmers. Staff member's contributory “Shravan pooja seva” was also organized at the Kalya Basaveshwara temple. The event was attended by about 108 members.



- ICAR-IISWC, R.C, Chandigarh organised one day awareness camp and plantation drive under Azadi Ka Amrit Mahotsav. All the staff members along with the Head of the centre actively participated in the plantation drive in which more than 100 number of fruit and forestry species were planted. Before plantation drive a demonstration of plantation was also given by Dr Pankaj Panwar, Principal Scientist to the participants.

- ICAR-IISWC, R.C, Datia organised a programme on 15<sup>th</sup> May, 2022, under 'Azadi Ka Amrit Mahotsav', to enlighten the students of classes 11<sup>th</sup> and 12<sup>th</sup> at Government Inter College, Badoni, Datia. The students were sensitized about the vast opportunities in agriculture education, employment and entrepreneurship for livelihood security. Twenty eight students including 17 girl students participated in the interaction.
- ICAR-IISWC, R.C, Koraput and MSSRF, Jeypore jointly celebrated “Azadi ka Amrit Mahotsav” by organising one day training on Bio-Input production (Vermi-compost) and its uses cum distribution of vermin-bed and micronutrients kit to tribal farmers on 20<sup>th</sup> May, 2022. On this occasion, Dr M. M. Hossain, Director, MSSRF, Jeypore graced the occasion as chief guest and urged the farmers to adopt low cost vermin-composting and discussed its benefits to the farmers. A total of twenty one farmers (15 male and 6 women farmers) from different villages of Koraput were participated in the programme.
- ICAR-IISWC, R.C, Agra organised Farmers' Awareness Campaign on 'Efficient and Balanced Use of Fertilizers (SCSP villages) at Vill. Mudhera 63 farmer attended the programme.
- As a part of AKAM, programme for demonstration and distribution of biofertilizers to farmers

of TSP and SCSP villages was organized for improving crop yields and soil fertility.

- ICAR-IISWC, R.C, Koraput organised one day Kisan Gosthi cum National Level Campaign on

“Efficient and Balanced use of Fertilizers (including nano fertilizers)” under Azadi ka Amrut Mahotsav on 21<sup>st</sup> June, 2022 at Bagraguda village of Koraput district.

## Farmers Outreach Activities {extension (TSP/SCSP)}

- ICAR-IISWC, Dehradun SCSP team organised a Kisan Gosthi on “Efficient and Balanced Use of Fertilizers (including Nano-Fertilizers)” in village Lal Wala Khalsa, Buggawala, Haridwar District Uttarakhand on 21<sup>st</sup> June, 2022. Total 60 farmers attended the programme

“Efficient and Balanced use of Fertilizers (including nano fertilizers)” under Azadi ka Amrut Mahotsav on 21<sup>st</sup> June, 2022 at Bagraguda village of Koraput district. Around 85 Farmers including women, participated in the programme. An interaction session with farmers was also organised



- ICAR-IISWC, R.C, Udhagamandalam organised training programme cum awareness campaign on “Efficient and Balanced use of Fertilizers (including Nano-Fertilizers)” at Ganganagar village, Iduhatty Watershed, Udhagamandalam, The Nilgirs, Tamil Nadu on 21<sup>st</sup> June, 2022 under SCSP. The programme was attended by 59 farmers from Ganganagar and Doddani villages from the Iduhatty watershed region.



- ICAR-IISWC, R.C, Koraput organised one day Kisan Gosthi cum National Level Campaign on



- ICAR-IISWC R.C, Udhagamandalam organised training on Natural Farming to the farmers during



22 -23<sup>rd</sup> July, 2022 Under SCSP programme at Ganga Nagar and Doddani villages. The programme was attended 40 beneficiaries.

- ICAR-IISWC, R.C, Koraput organized two days training cum field visit of Watershed Development Team members from Devbhog Block, Gariyaband District, Chhattisgarh under PMKSY – WDC 2.0, New Generation Watershed Development Programme (NGWDP) during 17 – 18<sup>th</sup> August, 2022. Watershed Development Team members including micro watershed chairman's, progressive farmers and technical officials who are working in the project. Total 26 Watershed Development Team members from Devbhog Block, Gariyaband District Chhattisgarh participated in the training programme. During inauguration programme, Dr Rajesh Bishnoi, Scientist and Coordinator of the training programme welcomed all the dignitaries. He highlighted the mandates of the Research Centre and ongoing activities of the centre. Dr D. C. Sahoo, Head(actg.) and Course Director, interacted with the farmers and discussed various soil and water conservation measures for effective watershed management.



- Dr J. Dash, Scientist, highlighted the importance of hydrological aspects of the watershed management. Dr Jotirmayee Lenka Scientist explained different horticultural and agronomical interventions for soil and water conservation.



Dr Rajesh Bishnoi elaborated upon participatory rural appraisal and data monitoring for impact evaluation of watershed. Visit to meteorological observatory, soil lab, research farm of the centre and LPG watershed was also conducted on 18<sup>th</sup> August, 2022.

- ICAR-IISWC, R.C, Datia Organised Farmers' Awareness Campaign on 'Efficient and Balanced Use of Fertilizers (including Nano fertilizers) on 21<sup>st</sup> June, 2022 at Sunar and Samruli 27 farmer attended the proceedings
- Dr P. Sundarbal, Pr. Scientist delivered a lecture on Soil and Water Conservation: Field Experiences in the Training Programme on Natural Resource Management Initiative of ESAF Foundation on 17<sup>th</sup> June, 2022 organised by Participatory Actions and Learning Methodologies (PALM 2) for Gudalur Farmers Producer Company during 16 – 17<sup>th</sup> June, 2022 at Gudalur
- Dr P. Sundarbal, Pr. Scientist delivered a lecture on Efficient and Balanced Use of Fertilizers (including Nano-Fertilizers) on 21<sup>st</sup> June, 2022 in the training cum awareness camp conducted at Ganganagar village, Udhagamandalam, The Nilgiris, Tamil Nadu under SCSP in the programme organized under Azadi ka Amrit Mahotsav
- Dr P. Sundarbal, Pr. Scientist, Dr Sudheer Kumar Annepu, Scientist and Mrs. Poonam Khatri, Technical Assistant conducted a field demonstration on the application of nano urea in the potato crop on 21<sup>st</sup> June, 2022 at Ganganagar village, Udhagamandalam, The Nilgiris, Tamil Nadu
- Dr S.M. Vanitha, Scientist delivered a lecture on the topic “Maximizing net profit by various enterprises” for farmers in a training programme organized by PALM 2 FNGO for Gudalur Farmers Producer Company at Gudalur on 17<sup>th</sup> June, 2022.
- Dr P. Raja, Pr. Scientist delivered a talk (online) on the topic “Healthy soil, water and atmosphere for healthy environment under climate change conditions” on the theme "#Only One Earth" on the occasion of World Environmental Day on 06<sup>th</sup> June, 2022 at ICAR-IIHR, Bangalore

- ICAR-IISWC, R.C, Udhagamandalam, organised Training programme cum awareness campaign on Efficient and Balanced Use of Fertilizers (including Nano-Fertilizers) on 21<sup>st</sup> June, 2022 at Ganganagar village, Udhagamandalam, The Nilgiris, Tamil Nadu under SCSP programme.
- ICAR- IISWC, R.C, Kota organised farmers' awareness campaign on efficient use of fertilizers including nano-fertilisers on 21<sup>st</sup> June, 2022.
- ICAR- IISWC, R.C, Vasad organized Farmers meeting and performs distribution of Mineral mixture in MGMG village – Mandvapura, District – Anand, Gujarat on 28<sup>th</sup> June,2022. Total 15 Farmers get benefited from the programme.
- ICAR-IISWC, R.C ,Ballari made arrangements for farmers to attend the virtual International workshop on “Climate Proofing of watershed development project with special reference to Soil & Water Conservation Technologies in context of Smart Agriculture organised by ICAR-IISWC, RC, Udhagamandalam on 02<sup>nd</sup> May, 2022. The programme was attended by 33 beneficiaries.



- ICAR-IISWC, R.C, Udhagamandalam, organised Training programme cum awareness campaign on Efficient and Balanced Use of Fertilizers (including Nano-Fertilizers) on 21<sup>st</sup> June, 2022 at

Ganganagar village, Udhagamandalam, The Nilgiris, Tamil Nadu under SCSP programme.

- ICAR- IISWC, R.C, Kota organized farmers' awareness campaign on efficient use of fertilizers including nano-fertilisers on 21<sup>st</sup> June, 2022.
- ICAR- IISWC, R.C, Vasad organised Farmers meeting and performs distribution of Mineral mixture in MGMG village – Mandvapura, District – Anand, Gujarat on 28<sup>th</sup> June, 2022. Total 15 Farmers get benefited from the program.
- ICAR- IISWC, R.C, Vasad organised Farmer's meeting and perform demonstration and distribution of Maize seeds , Red gram and Plants of Mango (Rajapuri, Kesar variety) to farmers of village – Bhadroli Khurdkarada Watershed, Vejalpur, District - Godhra,Gujarat on 11<sup>th</sup> July,2022, under TSP scheme . Total 35 farmers got benefited by the programme.
- ICAR-IISWC, R.C, Koraput demonstrated to distribution of micronutrients (zinc high) Under SCSP and TSP programme at Chindrijodi, Nargachh, Tikarpada villages. The programme was attended by 107 beneficiaries.
- ICAR-IISWC, R.C, Vasad demonstrated to distribution of Red gram and maize seeds to farmers Under SCSP and TSP programme at Bhadroli-Khurd-Karada watershed villages. The programme was attended 40 beneficiaries.
- ICAR-IISWC, R.C, Datia demonstrated to distribution of saplings of high yielding fruit plants for bund plantation and bamboo species for bio-fence under SCSP programme at Sunar and Samrauli villages. The programme was attended 30 beneficiaries.
- ICAR-IISWC, R.C, Datia demonstrated to distribution of vegetable seed kits for establishment of kitchen gardens under SCSP programme at Sunar and Samrauli villages. The programme was attended 24 beneficiaries.
- ICAR-IISWC, R.C, Kota demonstrated and arranged distribution of Seed, fertilizers, PP chemical under SCSP and TSP programme at Pali village district Bundi. The programme was attended 20 beneficiaries.

- ICAR-IISWC, R.C, Kota demonstrated and arranged distribution of CA technology and Contour furrow under SCSP and TSP



programme at, Kareriya village, district Bundi. The programme was attended 10 beneficiaries.



Conservation technology demonstration at farmer's field

## Distinguished Visitors

- Shri. Om Prakash Yadav, Hon'ble Minister of State (Independent Charge) Social Justice & Empowerment and Sanik & Ardh Sanik Welfare, Govt. of Haryana visited ICAR-IISWC,RC Chandigarh on 01<sup>st</sup> June,2022.



- 30 Forest Range Officials from Gujarat College of Forest Rangers visited ICAR-IISWC, R.C, Vasad.



- B.Sc (Ag) students of Career Point University, Kota under RAWE programme during 01<sup>st</sup> July, 2022 to 04<sup>th</sup> August,2022
- Dr V. Sridhar, Associate Professor, Virginia Polytechnic Institute and State Institute, USA on 13<sup>th</sup> July, 2022
- Dr S. K. Chaudhari, DDG (NRM) visited ICAR-IISWC, RC, Chandigarh on 01<sup>st</sup>&02<sup>nd</sup> July, 2022. He was apprised about how the concept of participatory watershed management was evolved by the Research Centre during the watershed project, which played a major role, along with the technological interventions, for successful implementation of the watershed management project.

During his visit to the iconic watershed management project, Sukhomajri (Haryana) Dr S.K. Chaudhari interacted with local residents, and beneficiaries in the presence of Dr M. Madhu, Dr O.P.S. Khola, and other scientists. He was glad to know the important role played by the institute through the Sukhomajri project in bringing about a sea-change in the approach to watershed management in the country. He also visited the Mandhala watershed management project (Himachal Pradesh), executed by the Centre, and interacted with the Secretary of the Water Users Association and discussed in depth the various aspects of the project. A visit to the command area of the water harvesting structure and first sediment monitoring station site, installed in the year 1964, and its pond, the genesis of the watershed management concept leading to the Sukhomajri project was also arranged. The DDG (NRM) expressed his

appreciation for the work done by the ICAR-IISWC, R.C.



Dr S. K. Chaudhari, DDG (NRM), ICAR, New Delhi, Planting a sapling during the visit to IISWC, R.C, Chandigarh.

## Success Stories

### ☆ Hatching Black Gold :Kadakhnath Poultry Rearing

#### Challenges

Koraput a schedule district in Odisha state is predominantly inhabited by tribal population. Financially, they are not at par with their counter parts in other parts of state. Among the backward block, Dasmantpur block is the most backward block in Koraput district. Though the farmers belong to medium category, prevalence of rain fed agriculture is limiting factors for diversification intensification and the farmers are languishing. Due to this reason farmers are migrating in search of employment during lean season. Considering this as a challenge, various options were discussed with the farmers. Rearing of *Kadakhnath* chicks tops the choices, considering the quick rotation, higher returns, less prone to disease and adaptability to wider climatic range.

#### Initiatives

Sensing the scope, considering local market potential and furthering the government initiatives of rural development through TSP (Tribal Sub-plan), as an income avenue, promoted *Kadakhnath* poultry rearing as group activity on commercial basis.

A wide range of support in the form of technical guidance, start-up assistance and facilitation

in the form of liaisoning with CPDO, financial aid in purchase of inputs, marketing linkages with prospective buyers with a condition to rotate the earnings was extended. With constant guidance and technical support from ICAR- IISWC, R.C, Sunabeda, the initiative flourishes on sustained basis.

#### Impact

Earlier, average earning of farmers was around Rs. 0.6-0.75 lakh from available land, by adopting traditional method of cultivating local low yielding crops under subsistence management with B: C ratio of about 1.69. Attending training, constant persuasion brings about a change in morale and leniency towards diversified agriculture. Presently, 4 groups (40 farmers) of villages namely; Nargacha, Chindorjodi, Dandabada and Tikrapada of Block Dasmantpur, District Koraput, Odisha have adopted this activity and gaining financially.

As these activities provides self-employment and income round the year, non adopters are also sowing keen interest. The farmers are earning a net return of around Rs.5.78 lakh per annum by selling the chicks in local market from the small rearing unit with alteration, incorporation/integration of income generating activities with input to output ratio of 2.79. Increased income help farmers for adoption of farm

mechanization and now they own assets like pump set, sprinkler set by investing part of their income. The farmers are gaining confidence that there is enough scope for development in rural areas provided one has the zeal and interest for

development albeit income avenues to generate revenues follows.

### Key results/insights/interesting facts

*Kadaknath* poultry are newly introduced in this region, hence perceived as new by the social system.

<b>A. Expenditure</b>			
Particulars	Quantity	Rate	Amount (Rs.)
One day old <i>kadaknath</i> chicks	200h nos.	Rs.37/- + Transportation cost	74000/-
Feeds @ 3.8kg/chicks	7600kg	Rs30/-kg	228000/-
Vaccination	2000	Rs3/-chicks	6000/-
Electricity bill	2000	Rs. 5/-chicks	10000/-
Litter management	2000	Rs2/-Chicks	4000/-
<b>Total expenditure (95 days of rearing)</b>			<b>322000/-</b>
<b>B. Receipt</b>			
Selling of birds	1800 (considering 10% mortality)	Rs. 500/- per bird	<b>900000/-</b>
<b>Net returns</b>			<b>578000/-</b>
<b>Output/Input ratio = 2.79</b>			

### Lesson learnt

- 1 *Kadaknath* chicks adapt to climatic situations prevailing in Dasmantpur Block of Koraput district.
- 2 Meat quality is priced for its particular flavor and sold like hot cake in local market.
- 3 Particularly among tribals (Adivasi) the word is used as religious offering to God because of its color (black).

- 4 Tribal of this region use egg of *kadaknath* chicks in treatment of headache asthma and kidney disorder.

### Supporting quotes and images

- 1 This is not ordinary word - this is **Kadaknath**
- 2 The superhero of all chicken – **Kadaknath**
- 3 The king of all chickens – **Kadaknath**



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- Gupta, G., Kumar, A., Choudhary, A.K., Dass, A., Sharma, V.K., Shukla, L., Upadhyay, P.K., Das, A., Jinger, D., Rajpoot, S.K. 2022. *Microbes-Mediated Integrated Nutrient*

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- Moharana, P.C., Meena, R. L., Nogiya, M., Jena, R. K., Sharma, G. K., Sahoo, S., Jha, P. K., Aditi, K.; Vara Prasad, P.V. 2022. Impacts of Land Use on Pools and Indices of Soil Organic Carbon and Nitrogen in the Ghaggar Flood Plains of Arid India. *Land* 2021, 11:180. <https://doi.org/10.3390/land11081180> (NAAS Rating: 9.90).
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### Popular Articles:

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## Salient Research Findings

### ☆ Jholakundi Based Vegetable Farming With Soil Moisture Conservation Practices for Increasing Profitability of Tribal Farmers in Eastern Ghats High Land Region

Eastern Ghats region constitutes 1.5% of the country's total geographical area with hills. The low lands, which are locally called as Jhola land, constitute about 5% of the *Eastern Ghats* High Land area and are highly productive due to presence of perennial water sources. Cultivation of vegetables has been found more remunerative in this tribal belt compared to cereal crops like finger millet and paddy. While there is ample scope for utilizing the *Jhola* (stream) water as a source of irrigation for medium slopping lands, a cost effective suitable water harvesting technology is *Jholakundi* which can be effectively utilised by the tribal farmers to meet the water requirements of vegetable cultivation. Farmers in *Eastern Ghats* High Land Region mostly cultivate the crops only during monsoon season and during post monsoon season the fields are left as fallow. Hence, if *Jholakundi* is constructed and harvested water is judiciously utilised for growing the vegetable crops in post monsoon

season, then it will improve the cropping intensity and socio economic status of the tribal farmers to a great extent. Study was conducted in Rajput Block Semiliguda, Koraput Odisha.

Ten *Jholakundi* in different reaches (*i.e.* upper, middle and lower) were selected. The recuperation test was conducted on monthly basis and *Jholakundi* water level monitored.

### Research Highlights

- 1 In longitudinal section of *Jhola* maximum recuperation rate was found in lower reach followed by upper and middle.
- 2 In cross section of *Jholakundi*, recuperation rate was found to depict similar pattern as in the case of longitudinal section.
- 3 Average Recuperation rate was found to be in the range of (1.44 to 3.90 m<sup>3</sup> Day<sup>-1</sup>) in longitudinal Section and (1.23 to 3.47 m<sup>3</sup>Day<sup>-1</sup>) in CrossSection.
- 4 Monthly average Recuperation rate(m<sup>3</sup>Day<sup>-1</sup>) of LS and CS follows similar trend.
- 5 Maximum recuperation rate was recorded in the month of July after that it follows the declining phase till June.



Mulching- Straw Mulch, Leaf Mulch, Geo- Jute, Plastic (Bio-degradable) and Crops- Tomato and Brinjal grown in areas irrigated by using *Jholakundi*.

## Awards & Recognition

- ❖ Dr S. Kala, Sr. Scientist, R.C, Kota awarded best Agroforestry Women Scientist Award-2022.
- ❖ Dr Dinesh Jinger, Scientist, R.C, Vasad, awarded associated editor on Indian Society of Agronomy, New Delhi.
- ❖ Dr P. Raja, Pr. Scientist, R.C. Udhagamandalam, organised and moderated Inter-institutional Project discussion meeting on 7<sup>th</sup> June, 2022 and 16<sup>th</sup> June, 2022 with KSCSTE- CWRDM, Calicut and NRSC-ISRO, Hyderabad
- ❖ Dr G. K. Sharma, Scientist, was invited as an expert to discuss findings and exploration of wastewater treatment with algae by Claire Adair, Founder & CEO, Te Renova, California, on 22<sup>nd</sup> June, 2022 (on zoom platform).
- ❖ Dr Kuldeep Kumar, Scientist, delivered a radio talk “Mrida Swasthya evam Fasal Utpadan” on 24<sup>th</sup> June, 2022 AIR, Kota.

## In News



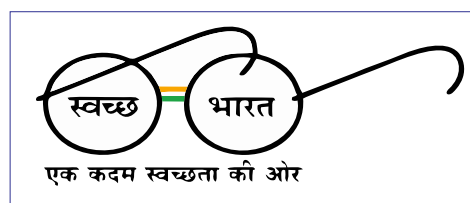
**प्राकृतिक खेती पर्यावरण संरक्षण में मददगार**

संवाद सहयोगी, खेड़वाला: केंद्रीय कृषि राज्यमंत्री कैलाश चौधरी ने कहा कि प्रधानमंत्री नरेन्द्र मोदी के नेतृत्व में किसानों को समृद्ध करने के साथ ही पर्यावरण व मिट्टी को बचाने के लिए भी सरकार कार्य कर रही है। आठ वर्षों में देश को कृषि क्षेत्र में आगे बढ़ाने वाली तमाम योजनाओं पर लगातार काम हुआ है। पर्यावरण के बदलते स्वरूप को लेकर आज विश्व चिंतित है। इसको लेकर सभी को काम करने की आवश्यकता है। खेड़वाला पहुंचे केंद्रीय राज्य मंत्री ने विश्व पर्यावरण दिवस पर रानीपोखरी के भोगपुर मार्ग पर स्थित प्राचीन सिद्ध महादेव मंदिर के प्रांगण में कल्पवृक्ष का पौधा रोपित कर पर्यावरण संरक्षण का भी संदेश दिया। साथ ही उन्होंने कहा कि कृषि क्षेत्र में अर्थव्यवस्था कोटिनाशकों का बेतहाशा प्रयोग भी पर्यावरण को प्रदूषित कर रहा है। इस कारण प्रधानमंत्री मोदी के नेतृत्व में प्राकृतिक खेती को बढ़ावा देने के लिए विशेष प्रयास किया जा रहा है। प्राकृतिक खेती के माध्यम से पर्यावरण को दूषित होने से बचाया जा सकता है। उन्होंने कहा कि हम सभी को आगे आकर अधिक से अधिक पौधारोपण कर पर्यावरण को बचाने के लिए कार्य करना चाहिए। इस अवसर पर भाजपा कार्यकर्ताओं ने केंद्रीय राज्य मंत्री का स्वागत भी किया। इस अवसर पर भारतीय मृदा एवं जल संरक्षण संस्थान के निदेशक डा. एम मधु, प्रधान सुधोर राजू, संपूर्ण सिंह रावत, विक्रम सिंह नेगी, आनंद सिंह पवार, ईश्वर रौथान, दिनेश सजवान, महिपाल सिंह कुशाली, सतीश सेमवाल, राजकुमार आदि मौजूद रहे।



**किसानों की आय दोगुना करने को बढ़ाया कृषि बजट: चौधरी**

संवाद सहयोगी, खेड़वाला: विश्व पर्यावरण दिवस पर केंद्रीय कृषि व किसान कल्याण मंत्री कैलाश चौधरी ने रानीपोखरी में आयोजित किसान संवाद कार्यक्रम में भाग लिया। कार्यक्रम में उन्होंने किसानों की समस्या व उनके सुझावों को भी सुना। किसानों को संबोधित करते हुए उन्होंने कहा कि मोदी सरकार किसानों की आय को दोगुना करने के लिए पूरी मेहनत से कार्य कर रही है। भारतीयों की थाली में शुद्ध भोजन हो इसके लिए सरकार पोस्टिहाइड का काम से काम प्रयोग करने की दिशा में काम कर रही है। कृषि क्षेत्र में कई गुना बजट बढ़ाया गया है। किसानों की खुशहाली के लिए अनेकों योजनाएं चलायी जा रही हैं। उन्होंने आधुनिक तकनीक के साथ-साथ प्राकृतिक रूप से भी खेती करने, जल संवय करने और फल्यक किसान को नाय पालन करने पर भी जोर दिया। इससे पहले केंद्रीय कृषि व किसान कल्याण राज्यमंत्री कैलाश चौधरी के देहरादून पहुंचने पर भाजपाइयों द्वारा जौलीघाट एयरपोर्ट पर उनका जोरदार स्वागत किया गया। इस मौके पर जिला मोडिया प्रभारी संपूर्ण सिंह रावत, मंडल महामंत्री मनबर नेगी, सभासद संदीप नेगी, ईश्वर रौथान, मनीष यादव, नितिन वर्धवाल, सुरेश सेनी व चंद्र बल्लभ लखेड़ा आदि उपस्थित थे।



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