



IISWC News



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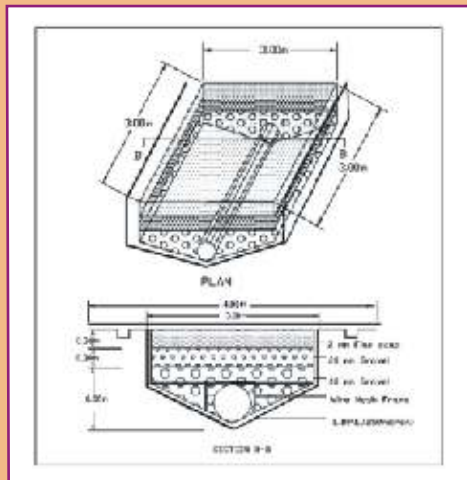
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The subject of soil and water conservation for controlling land degradation is very important in the context of tribal farmers and their livelihoods. The Indian Council of Agricultural Research (ICAR) is carrying out a large number of works in this area aiming at improving agricultural productivity of various agro-ecosystems that are largely managed by tribal communities. Development of tribal regions and the communities has become more relevant to India since the tribal communities and their habitats constitute a very significant part of the country. About half of the total tribal population of the world that constitute about 8.2% of India's population lives in its 18% land. The tribal regions are largely dominated by marginal and poor farmers with diversified land use systems, including agriculture and animal husbandry. Migration of farmers and youths, and malnutrition and poor health status are common problems in these areas. In spite of improvement in the present situation, the tribal dominated regions have still many farming related problems like lack of input supply, seed supply units, veterinary hospitals, assured irrigation, market facilities, etc.

Of late, the fund allocation through Tribal Sub-Plan (TSP) has come handy to upscale the doable farm technologies in the fields. The ICAR is operating the TSP projects in its constituent institutes all over the country for the integrated development of tribal areas. Providing minimum basic services like professional training, health services, irrigation and drinking water sources, nutritional support, forest (fuel, fodder, fiber) and agriculture produces, rural housing and urban-rural link roads has been prioritized in this initiative. Considering the prevailing farming situations and problems, many interventions for conservation of natural resources to improve agricultural production have been implemented by the ICAR Institutes like Indian Institute of Soil and Water Conservation (IISWC, formerly CSWCRTI), Dehradun to benefit tribal communities who largely depend on traditional farming and animal husbandry activities.

The ICAR-IISWC, Dehradun and its Centres are working in tribal areas located in different parts of the country for implementation of technologies developed by the Institute that would benefit tribal population. The institute has improved local farming systems with befitting Natural Resource Management (NRM) technologies for the sustainable development of tribal farmers under TSP projects in many tribal regions like Attal and Utpalta villages in Uttarakhand; Challanput, Patraput and Mukhibidei villages in Semiliguda block, Koraput, Odisha; Konasagara and Netranhalli villages in Karnataka; and, the Nilgiris in Tamil Nadu. Soil and water conservation measures like contour trenches, Gabion & katta-crate, check dams, brushwood check dam, landslide treatment by geo-textile layering, water harvesting for recycling and multiple water uses, and drip irrigation have improved natural resources and their efficient uses. Similarly, agronomical measures like inter-cropping, line sowing, mulching, use of high yielding & improved crop/plant varieties, crop management techniques, in-situ moisture conservation, rain water conservation, vegetative barriers, agro forestry, agri-horticulture, integrated farming systems, etc. have proven to be potential technologies and approaches for rural development. The Institute promotes provisioning of modern and improved agricultural tools and implements through custom-hiring, besides creation of awareness, demonstration and training. Also, livelihood support and income generating activities (cottage industries like mushroom cultivation, making of soaps, candles, dhoop sticks etc.) have contributed a lot for the welfare of tribal communities. Group farming by tribal communities, use of low cost micro-rainwater harvesting technology (Jalkund), adoption of suitable integrated farming avenues like duck rearing and fish farming in village ponds, vermi-composting and poultry (Banaraja breed) farming, goat farming, bee-keeping, plant nursery business etc. are found to be potential options for rural tribal youths. This may help mitigate specific problems of shifting cultivation, water scarcity and low agriculture productivity in tribal areas.

P.K. Mishra

NEW INITIATIVES

CSWCRTI Renamed as IISWC

The Central Soil & Water Conservation Research & Training Institute has been renamed as ICAR-Indian Institute of Soil & Water Conservation (IISWC) vide ICAR letter No. 1 (14)/2014-PIM dated May 13, 2014. In accordance with this change in the name of the Institute, the newsletter of the Institute namely 'CSWCRTI News' has also been renamed as 'IISWC News'.

NICRA Project Taken-up

The ICAR-IISWC, Dehradun has been identified for taking up ICAR-NICRA (National Innovation on Climate Resilient Agriculture) project approved under XII Plan EFC Scheme (at ICAR-CRIDA Hyderabad) in network mode with other ICAR Institutes for Integrated Systems Modelling involving Natural Resources Modelling (Climate Water and Carbon) with special emphasis on basin level impact studies for year 2015-16 and 2016-17. The ICAR-IISWC and its Regional Centres will apply SWAT model to representative basins for studying effect of projected climate scenario on hydrology and other natural resource stocks. The institute has received Rs. 31.46 lakhs for project year 2014-15.

Project on Blue and Green Water Harvesting Initiated

A Department of Science and Technology (DST) funded project on "Development of efficient and innovative blue and green water harvesting techniques for enhancing the land and water productivity of semi-arid districts of Gujarat" has been initiated at ICAR-IISWC Research Centre, Vasad for two years (2014-15 to 2015-16).

IISWC Signs MoU with Wadia Institute of Himalayan Geology

A Memorandum of Understanding (MoU) has been signed between ICAR-IISWC, Dehradun and Wadia Institute of Himalayan Geology (WIHG), Dehradun on January 20, 2015 at WIHG by the Directors of both the Institutes to strengthen bilateral collaboration and cooperation on emerging research issues on country's Himalayan region using geological, geo-hydrological, and soil and water conservation measures.



Consultancy Projects

- Consultancy project on "Assessment of sustainably extractable river bed material from river Kosi for the year 2014-15" for ₹3.82 lakhs under jurisdiction of Regional Manager, Uttarakhand Forest Development Corporation, Ramnagar (Uttarakhand).
- MoU for consultancy project "Assessment of permissible extraction of river bed material from river Gaula during 2014-15" for ₹3.30 lakh under jurisdiction of DFO, TEFD, Haldwani, Nainital.
- Consultancy project on "Monitoring and evaluation of wetlands in Punjab", sponsored by Punjab State Council for Science and Technology, Chandigarh.

Installation of Solar Pump Based Irrigation System

To harness perennial source of water through use of solar power is an alternate and viable option to enhance livelihood security of tribal community. During a visit to a remote village, Jogiput in Koraput district of Odisha, the poor farmers of the village expressed their desire for



cultivating vegetables during *rabi* and summer seasons. They highlighted their meager financial condition which makes them unable to tap and use water with the help of diesel pump and bear the recurring expense associated with it. Considering their needs and plight, and availability of perennial streams, it has been decided to install a solar pump based irrigation system in this village. Accordingly, a check dam has been constructed across the stream and water is being lifted using 5HP solar pump. The water is conveyed through underground pipe line to respective fields, thereby minimizing conveyance losses. The system is operational this year benefiting 20 households by irrigating about 8-10 ha area.

IMPORTANT EVENTS

World Water Day Celebrated



World Water Day 2015 was celebrated at IISWC, Dehradun on March 22, 2015. Dr. N.K. Sharma, In-charge Director, IISWC inaugurated the day long events of exhibition, technical interaction, show-casing of Institute's R&D on natural resource management for

bringing in understanding of sources, status, conservation needs, quality parameters and assessment techniques, etc. pertaining to various water resources using exhibits, posters and models placed in Institute Museum and the Day's exhibition on the theme of "Water and Conservation". Over 150 post-graduate students and faculty members from Dolphin University, Doon Agriculture College and BFIT, Dehradun, and scientists, technical officers and other staff of the Institute attended the programme. Dr. N.K. Sharma highlighted the needs and means of conserving water resources and various concerns of personal responsibilities of each citizen in light of increasing pollution and reduction in per capita water availability. He exhorted the gathering to use the precious resource used in most appropriate manner in every use as it is available in defined quantum. During the exhibition session, the students, faculty members and other participants were explained the status, sources and importance of water resources, prevailing conservation programs nationally and internationally, possible personalized solutions to conserve water resources, etc. using various pictorial exhibits displayed on the occasion.

World Fisheries Day Celebrated

The World Fisheries Day was celebrated at IISWC, Dehradun on November 21, 2014 at its Research Farm, Selakui. Dr. P.K. Mishra,

Director, IISWC inaugurated the day long events of exhibition, demonstration of laboratory/wet lab facilities, fishing and technical interaction on analysis of aquatic ecosystems, fish farming inputs etc. using exhibits, posters and models in the field. Over 200 participants, including graduate students and faculty members from Himgiri University, Dolphin University, Doon Agriculture College and BFIT, Dehradun, and scientists, technical officers and other staffs of the Institute attended the programme. The Chief Guest, Dr. P.K. Mishra highlighted the need of conserving water and fisheries resources as natural capital and life support systems to which the IISWC is mandated and working since over 5 decades. He informed the gathering that fish and fisheries resources need to be cared for many reasons, mainly as one the important natural resources and livelihood options. During the celebrations, importance of World Fisheries Day for conserving fish, fish resources and ecosystems to benefit nature and millions associated with fish resources; importance of fish resources in light of ecosystem conservation and human prosperity; water harvesting for sustenance of aquatic ecosystems and environmental improvement, and as recreational avenues; integrated uses of water resources through suitable integrated farming technologies for ensuring improved water productivity and rural livelihoods; interfaces of forest and fisheries resources and protection of fish as a non-forest produce; fisheries conservation with associated economic implications and livelihood support avenues; diversified values of fish and fisheries resources to rural people as food, medicine etc. were highlighted. The concepts and principles associated with various technologies refined at IISWC were explained with the help of posters and demonstration setups. Participants were exposed to fish identification, fish farming inputs, health assessment, fish healthcare measures, and fishing & sampling techniques. Relevant publications of the institute on fish farming and water conservation were distributed to the participants. On this occasion, under Swachh Bharat Abhiyan, the students were urged to maintain cleanliness of their premises for the benefit of environment and their own health.



IISWC Centre Agra Celebrated World Soil Day



On December 5, 2014, the World Soil Day was celebrated at IISWC Research Centre, Agra with a group of 58 agriculture undergraduate students from Shri Megh Degree College, Agra along with their faculty members Dr. D.D. Gupta, Er. Rohit Yadav and Dr. Ranjana. Dr. S.K. Dubey, Head of Centre welcomed the students and explained the need and importance of soil and water conservation. A short film was played to show the



activities and ongoing research and training programme of the Centre. Museum and lab visit was also conducted along with a lecture on conservation on natural resources. A field visit was also organised. On this occasion, under Swachh Bharat Abhiyan, the students were conveyed the need of cleanliness for one self and for the Nation. An oath ceremony was also organized and the message of Honbl'e Prime Minister for Swachh Bharat Abhiyan was spread. The students were urged to spread the importance of use of toilets by everyone for the benefit of environment and ones own health.

Cleanliness Drive under Swachh Bharat Abhiyan

Cleanliness drive was organized under *Swachh Bharat Abhiyan* by IISWC at its Headquarter at Dehradun and its eight Research Centres located in different parts of the country during exclusive functions for the Abhiyan as well as on the occasion of other celebrations. At village Pasauli, Dehradun, the students, teachers and staff of Junior High School, Pasauli actively participated in the cleanliness drive on February 24, 2015. The students and staff of the school moved around the school campus, village premises and along the road to clean the area and educate the villagers. On the occasion of New Year Day of 2015, the officers and staff of IISWC, Dehradun moved around the office and residential campus of the Institute and cleaned the premises around the residences and office building. The residents were educated about the benefits of cleanliness and its impact on health. At the end of celebrations of 66th Republic Day through various events on January 26, 2015, all the staffs and family members of the Institute went out of the campus for cleaning the main street.



At the IISWC Research Centres, all the scientists and staff members took part in *Shramdaan* Activities during Gandhi Jayanti on October 2, 2014 to keep premises of Office, Residential Campus and surroundings clean and tidy. Similar activities were also taken up at Research Farms where all staff members actively participated in the activity. All the scientists and staff ensured that they will take up such activities periodically so that they are also kept clean in future. At Bellary, puja was done on the occasion at the office, followed up by cleaning of the office premises, library, rooms, wings, gallery and lab. An office order was also issued to all occupants of staff quarters to keep household waste in dustbins which is collected from the doorstep by a municipal truck every alternate day. At Udhagamandalam, similar activities were especially undertaken on New Year Day of 2015.

Farm Innovators Day Celebrated at IISWC Centres

Farm Innovators Day was organized at Chandigarh, Udhagamandalam and Vasad on February 28, at Koraput on March 13, and at Kota on March 14, 2015 for acknowledging the role of



farmers in the Indian economy for which agriculture is the backbone. The objective of the celebration was to have an open interaction between farmers and scientists, and to honour deserving hard working farmers who contributed to the development of agriculture through adoption and dissemination of modern agricultural technologies. After brief introduction on implication of Farm Innovators Day celebration, need of diversified agriculture, adoption of innovative technologies, role of soil and water conservation measures in watershed management for sustainable agricultural productivity and livelihood support in a region, a formal welcome of a Chief Guest and farmers was given by the respective Head of Centre. At Chandigarh, Chief Guest Shri H.S. Lohan, Ex-Director of Agriculture, Haryana emphasised upon need for adoption of innovative agricultural technologies and also enlightened the farmers in different ways of overcoming field level constraints faced by them. At Koraput, Chief Guest Sh. B.K. Panda, DFO, Koraput explained about the depleting forest resources and urgent need of their restoration for better environment. He also released a study report published by the Centre based on Evaluation Report of OFSDP project. At Kota, the programme was inaugurated by Dr. S.S. Tomar, Professor and Director of Extension, Kota Agricultural University, Kota. At Udhagamandalam, Shri N. Chandran, Village Committee Leader of Gandhi Khadi was the Chief Guest. At Vasad, Chief Guest Dr. D.C. Joshi, Dean, Faculty of Food Processing, Anand Agricultural University said that farmers are the true researchers in agriculture and emphasized the importance of primary level processing to increase the overall income and profitability of cultivation. Progressive and other farmers, members of women SHGs, line department officials, and entrepreneurs participated in these events. At Koraput, the Odisha State Government line departments namely ATMA, Department of Agriculture, Department of Soil Conservation, Watershed Development Mission, Animal Resource Department, Horticulture Department, Krishi Vigyan Kendra (OUAT) and Forest Department, Regional Sericulture Research Station (Gol), and BILT Tree Tech Private Limited had put their stalls to exhibit their technologies to the farmers. In the open farmer scientist interaction session different aspects of water management, horticulture, agroforestry, soil health and agronomy were discussed by the team of scientists. Important technologies developed at a Centre relevant to the area were also presented and discussed with the farmers. The farmers got opportunity to interact and learn on soil and water conservation measures, watershed development, improved agricultural technologies, farm mechanisation, modern agricultural tools, forest resources conservation, commercial plantation, sericulture etc, which ultimately can help them in skill development and augmentation of income. The progressive farmers spoke about the various watershed activities and shared their innovations / experiences. A detail feedback was taken from

the farmers regarding their needs to develop a more improved production system. The Chief Guests distributed the Farm Innovator Awards 2015 to farmers belonging to different villages for showing remarkable attitude in adoption and dissemination of modern agricultural technologies and practices. The awardees shared their experiences of using these technologies in their field and the benefits realized thereafter.

IISWC Centres Celebrated Agricultural Education Day

Agricultural Education Day was celebrated at IISWC Research Centre at Vasad on October 15, and Research Centres at Koraput, Kota and Udhagamandalam on October 16, 2015 on the occasion of World Food Day. At



Udhagamandalam, the Chief Guest Mr. M. Murugan, Joint Registrar, Cooperatives Societies, Nilgiris Region, Ooty insisted that students in higher secondary should study well and get good score to get admission in agriculture courses. He also explained that agricultural graduates are performing better in competitive examinations like UPSC and TNPSC exams. Private companies of fertilizers, pesticides and seeds are offering fabulous jobs for agriculture graduates with high salary. Therefore, agriculture field is providing employment next to medical field in professional courses. Keeping all the above opportunities, he insisted all the school students to opt agriculture courses for their carrier. Dr. Anitha, Professor and Head, Horticultural Research Station, TNAU, Ooty, who graced the occasion as Guest of Honour, informed the gathering about green revolution, self sufficiency in food production and importance of agriculture in Indian economy. She informed the students about the agriculture education opportunity in state agricultural university and central institutes and job opportunities in government and private sectors. Many of the agricultural graduates are securing IAS, IPS and IFS every year. Graduates with bachelor degree are getting jobs in state departments as agricultural and horticultural officers and agricultural engineers. Post graduates in agriculture get jobs as Scientists in ICAR and Assistant Professors in Agricultural Universities. At Koraput, Chief Guest Dr Bibekananda Behura, Principal, Aeronautics College, HAL, Sunabeda expressed his view that with shrinking of agricultural land and feeding the burgeoning population, the time has come to conserve the natural resources and the message should be embodied to each and every citizen of India. Many students from different schools participated in the celebrations. At Koraput, 30 deaf & dumb school children of Sunabeda, Koraput participated. During this occasion a drawing competition on the theme "Natural Resource Management" was organized. The winners were facilitated and complimentary prizes were distributed to all the participating students. The students participating at the Centres were educated regarding importance of soil and water conservation in agriculture and in our lives. The message was communicated to the deaf & dumb school children through sign language by the teacher of the school.

Foundation Days Celebrated at Kota and Udhagamandalam

IISWC Research Centres Kota and Udhagamandalam celebrated their respective 61st Foundation Day on October 19 and 20, 2014. Retired and serving personals attended the celebration.



Retired personals who attended the function were welcomed by the Heads of the Centre. Retired personals shared their experience as well expressed expectations that are to be achieved in future. At Udhagamandalam, scientists / officials from IARI, Wellington; CPRS, Muthorai; UPASI KVK, Coonoor; and HRS, TNAU, Ooty also participated. Dr. M. Sivasamy, Head, IARI, Wellington inaugurated the programme by lighting the lamp. He appreciated the research as well as outreach activities of the Centre since its beginning and at present also. He further said that even with limited staff, the Centre has proved its existence in this region through its research, training and field activities. Dr. O.P.S. Khola, Head of the Centre briefed about the works of predecessors and appreciated their efforts in building the base structure for research and other activities over which we are working for the further development. He told that the mandate and objectives of the Centre are open ended and all the staff should work hard to meet out the changing needs and expectations. Various sports and cultural events like running race, musical chair, tug of war, lemon in spoon, dance, singing etc. for gents, ladies and children were organised and prizes were distributed to the winners. At Kota, Shri Kanhya Lalji (senior most in retired personal) presided the ceremony. Retired personals shared their experience as well expressed expectations that are to be achieved in future.

RAC Meeting - 2015 of IISWC Held at Udhagamandalam

The Research Advisory Committee (RAC) meeting of the Institute was held during March 18-19, 2015 at Research Centre Udhagamandalam under the Chairmanship of Dr. B.C. Mal, Professor & Former Head,



Department of Agriculture & Food Engineering, IIT Khargpur. Dr. Ranjoodh Singh, Ex-Director (Research) HPKV, Palampur; Dr. S.K. Sharma, Ex-Director, IIFSR, Modipuram; Dr. K.K. Satpathy, Ex-Director, NIRJAFT, Kolkata; Dr. P.S. Pathak, Ex-Director, IGFRI, Jhansi; Dr. Ram Babu, Ex-Head, Economics & Project Planning Division, IISWC, Dehradun; Dr. S.K. Chaudhari, Assistant Director General (S&WM), ICAR, New Delhi also attended the meeting as RAC members. Dr. P.K. Mishra, Director, IISWC briefed the RAC Chairman and Members about achievements of the Institute during 2014-15. The RAC members expressed their happiness over the sincere efforts made by the Institute in undertaking new initiatives and implementing the recommendations during 2014-15.

Four - Months Regular Training Course Concluded

Valedictory function of 111th batch of four-months regular training programme "Certificate Course on Soil & Water Conservation & Watershed Management" was organized at IISWC, Dehradun on February 7,



2015. The programme was organized during October 8, 2014 to February 7, 2015 at Dehradun. Eighteen officers from different states (Jammu & Kashmir-3, Punjab-5, Asom-6, Odisha-1 and Madhya Pradesh-3) participated in the course. Mrs Neena Grewal, IFS, Director, Rajaji National Park was the Chief Guest. Eight merit certificates for outstanding performances were awarded to the participants by her. She expressed that capacity building is one of the most important element of watershed management and for empowering all types of watershed stakeholders. Besides transparency, participation is also important for planning management of a watershed. The function was presided over by Dr. P.K. Mishra, Director, IISWC. He emphasized upon use of learnt skills by the participants in real field situations in their respective states and expressed that skill of operation and use of new tools and techniques, particularly RS & GIS, GPS and total survey station, are the basic needs for survey and planning within a short period.

IISWC Centre Koraput Participated in EZR Agricultural Fair

The Eastern Zone Regional Agriculture Fair 2015 was organized by CPRS, Patna during February 19-21, 2015. In this fair ICAR-IISWC was represented by its Research Centre at Koraput. Technologies developed



and various developmental activities pertaining to the Institute were displayed. Ten thousand farmers of Eastern region of India thronged to the fair. About forty-five ICAR Institutions and agro-entrepreneurs working in Eastern India participated in this fair. Shri Radha Mohan Singh, Honorable Agriculture Minister (GoI), and Shri Ramkripal Yadav, Union Minister of State for Drinking Water & Sanitation (GoI) graced this occasion and highlighted various initiatives taken by the Government and urged the farmers to reap the benefits of various schemes launched in the field of agriculture. Dignitaries from ICAR, New Delhi included Secretary (ICAR), Deputy Director General (Horticulture) and Deputy Director General (Education) attended this fair. During the visit Secretary (ICAR) and Deputy Director General (Education) interacted and appreciated the efforts of ICAR-IISWC. Various pamphlets / leaflets / technical bulletins published by the Institute were distributed to the dignitaries and farmers, who also interacted about the activities being done by the Institute. The fair provided a platform to showcase the technological innovations and developmental activities being implemented by the Institute.

State Minister of Agriculture Converses with IISWC at *Kissan Gosthi*

The Institute participated in a *Kissan Gosthi-cum-Exhibition* organized at villages Rasulpur Jatan and Barwala, District Muzafarnagar, Uttar Pradesh. The event was organized by PDFSR, Modipuram in association with DWM, Bhubaneswar on December 13 & 14, 2014. In both villages, major issue of the discussion was "Efficient Water Management for Higher Sugarcane Productivity". About 15 ICAR Institutes participated in the event. Variety of technologies related to groundwater recharge, irrigation water management, and soil health improvement, and improved sugarcane varieties were showcased in the exhibition. Dr. Sanjay Baliyan, Hon'ble State Minister of Agriculture, Govt. of India; Dr. A.K. Sikka, Deputy Director General (NRM); Dr. A.K. Singh, Deputy Director General (AE); Dr. P.K. Mishra, Director, ICAR-IISWC; Dr. B. Gangwar, Director, ICAR-IIFSR; and Dr. Birham Prakash, Director, CIRC graced the occasion.



IISWC Exhibited Technologies in National Seminar on Fisheries

The IISWC, Dehradun exhibited concepts, technologies and achievements in fisheries development, natural resource management (NRM), soil & water conservation etc. to over 600 delegates and participants of the 10th Indian Fisheries and Aquaculture Forum held during November 12 to 15, 2014 at Lucknow. The Forum was organized by Asian Fisheries Society - Indian Branch (AFSIB), Mangalore and ICAR-National Bureau of Fish Genetic Resources (NBFGR), Lucknow with support from over 40 ICAR Institutes, national level premier intuitions, universities, colleges and international organizations like Network of Aquaculture Centre in Asia-Pacific (NACA), Bangkok and World Fish Centre, Malaysia. The Forum and the exhibition were inaugurated by Honorable Governor of Uttar Pradesh, Shri Ram Naik in presence of Dr. S. Ayyappan, Secretary (DARE) & Director General (ICAR), New Delhi. Dr. S. Ayyappan in his presidential address briefed R&D and achievements of country's fisheries sector and thanked seniors for taking fisheries to new heights from its insignificant status as street business. He welcomed young professionals and entrepreneurs to proceed further towards realizing new strides for the sector. The IISWC through a stall exhibited a wide spectrum of technologies. Principles and practices of Watershed-based Fisheries Development Plans (WFDP), soil & water conservation technologies, water harvesting, multiple use of water, integrated fish farming, outputs of on-farm research, achievements of capacity building, traditional fishing &



farming, fishing festivals of Himalayas etc. were displayed and discussed. Technological details, brochures, stickers and publications of IISWC were distributed to visitors and delegates of the Forum for trickling down of available information far and wide. Considering the importance of WFDP, a lead paper on WFDP by IISWC was included in the Souvenir of the Forum by the organizers. Dr. S. Ayyappan, Director General, ICAR; Dr. C. Virapat, Director General, NACA, Bangkok; Dr. B. Meenakumari, Deputy Director General (Fisheries), ICAR; former and present Directors of various ICAR-Fisheries institutes, delegates and participants vehemently appreciated the IISWC Stall and the concept of fisheries development by watershed management being promoted by the Institute as a virgin area that needs to be explored.

IISWC Centre Chandigarh Participated in AgroTech-2014 Fair

IISWC Research Centre, Chandigarh actively participated in AgroTech-2014 organized by Confederation of Indian Industries (CII) during November 22-25, 2014 at Chandigarh. Major research activities pertaining to watershed management and water harvesting along with scientific technologies developed by the Centre were exhibited through digital posters at the venue. The Centre got wide publicity as a Govt. organization engaged in development of degraded/wasteland through plantation of hardy fruit species. Farmers, orchardists and various agro-entrepreneurs showed keen interest in aonla, bael, and other hardy plant species. Displays were used to emphasize effect of soil erosion and excessive use of fertilizers and agrochemicals on gradual decline of soil health and other factors affecting productivity, which has become a grave cause of concern today. Organic farming technologies combined with scientific soil and water conservation technologies were projected for sustainable crop production while maintaining soil health and long term fertility. Pamphlets containing relevant material were distributed and technologies were thoroughly discussed with interested visitors. A lot of interest was shown by farmers, women and visitors from Chandigarh and adjoining states.



IISWC Joins Hands with State Fisheries Department

The IISWC, Dehradun participated in a *Kissan Mela* organized by Uttarakhand State Fisheries Department at Dhakrani Fish Farm, Dhakrani, Dehradun District on December 22, 2014. Dr M. Muruganandam, Senior Scientist (Fisheries), IISWC sensitized farmers on abundant but deteriorating fishery resources, increasing demand for fish and fish products, and the needs of fish farming in the region. He highlighted growing need for increasing fish production and potentials of fish farming in various culture systems like water harvesting, off-stream and community ponds that are available in the region. He briefed the participants about farming techniques, importance of proper feeds & feeding, identification of water quality problems and precautions required for successful farming. Details on various fish farming technologies, fisheries management concepts and status of fisheries were exhibited through user-friendly posters. The

participants had live demonstrations on specifications of fishponds and water quality requirements. Shri Purohit, Assistant Director (Fisheries), State Fisheries Department narrated the scope of fish farming in the district to the farmers. The farmers were briefed regarding on-going government activities and schemes available for various sections of farmers. About 45 farmers from Chakrata, Vikasnagar, Kalsi, Langha and Sahaspur, and local social workers benefitted and received first-hand information from the fair. Brochures on fish farming technologies published by IISWC were distributed to State Fisheries Inspectors and needy farmers for the trickle down benefits.

Agriculture Exhibitions Organized by IISWC

Agriculture exhibition was organized during 9th Uttarakhand Science & Technology Congress at Jhajra, Dehradun during February 26-28, 2015. Shri Harish Rawat, Chief Minister of Uttarakhand visited the stall and appreciated the efforts of IISWC for educating the farmers and extension workers of the State. In the exhibition soil and water conservation technologies, water harvesting and recycling experiences, torrent control management, mine spoil rehabilitation technologies for mass erosion control and landslides were displayed for creating awareness. Display of soil and water conservation technologies was done during *Resham Krishi Mela-2015* on March 15, 2015 at Sahaspur, Dehradun. Farmers and extension workers of the district visited the exhibition and got benefited with displayed exhibits and interaction with the experts of the Institute. Extension literature was also distributed among visitors for awareness.



IISWC Centre Udhagamandalam Participated in National Science Day Exhibition

IISWC Research Centre, Udhagamandalam participated in the National Science Day celebration organized at Radio Astronomy Centre, Tata Institute of Fundamental Research, Ooty on February 28, 2015. On the occasion, the Centre displayed various technologies of soil and water conservation, models on watershed development, demonstration on application of jute geo-textiles for slope stabilization, various types of trenches, and integrated nutrient management. The efforts of Institute were appreciated by Dr. Sirag Hassan, former Director, Indian Institute of Astrophysics; Dr B. Sekar, Director, Pasteur Institute of India; and other dignitaries. Overall, 1095 visitors from other scientific research organisations, including 64 educational institutions in and around Ooty, visited these exhibits and gained knowledge about soil and water conservation technologies and environmental issues. The exhibition provided a platform to disseminate knowledge and to attract young students towards soil and water conservation research.



IISWC Centre Koraput Participated in ICAR Institutes-SAU-State Department Meet

The IISWC Research Centre, Koraput participated in the ICAR Institutes-SAU-State Department Interface Meeting held at CRRRI, Cuttack during October 21-22, 2014. The meeting was chaired by Dr. (Prof.) M. Kar, Vice Chancellor, OUAT in presence of the Dr. T. Mohapatra, Director, CRRRI as Convener of the program. After presentation on technologies developed by the University, gaps in extension and adoption among farmers and other constraints facing by them due to lack of awareness, representatives from different ICAR Institutes presented about their technologies. Dr. D.C. Sahoo, Senior Scientist at IISWC Research Centre, Koraput presented different soil and water conservation technologies, the training and demonstration activities being conducted for different stakeholders at the Centre, and the linkages with the University, other ICAR Institutes, and state departments in the region, particularly with OWDM and State Forest Departments, MSSRF, Jeypore etc. After all the presentations, discussion was held on different researchable issues. Later, the exhibition stalls were inaugurated by the Dr (Prof.) M. Kar, Vice Chancellor, OUAT and the dignitaries visited all the stalls. The VC, OUAT appreciated the IISWC exhibition stall after witnessing different technologies and publication of IISWC Centre Koraput. Dr. T. Mohapatra, Director, CRRRI advised to publish the technologies in local languages for benefit of the farmers of the region. On October 22, there was interaction meeting among farmers with financial organizations and NGOs. Banks like SBI, NABARD etc. presented different schemes available for farmers. The farmers also expressed their practical difficulties in availing these facilities. After the meeting, the farmers visited the IISWC stall and interacted about different soil and water conservation measures and technologies.

Exposure Visit of Tribal Farmers of Uttarakhand Conducted

Attal, a remote tribal village situated in Tuni block of Dehradun district was selected by IISWC, Dehradun for implementing Tribal Sub-Plan (TSP). Half out of about 300 households in the village are engaged in agriculture i.e. cultivation of cereals, pulses, vegetables and fruit crops. Existence of huge potential of agricultural development by addressing water scarcity problem was identified. Therefore, water resource development by harvesting water from a perennial source (discharge 15 lps) through a 6.0 km length HDPE pipe line in a non-functional water tank. Now 300 cum water is available to 125 farmers who are now cultivating vegetables under assured irrigated conditions developed in the village. For capacity and skill development, an exposure visit of 20 farmers during December 3-10, 2014 to Gujarat including Gambhira Cooperative Farming Society (one of the oldest and successful cooperative society in India), Anand Agricultural University, Amul Dairy and IISWC Research Centre, Vasad was undertaken. By this farmers learnt



about cooperative farming and new agricultural techniques for making hill agriculture of Uttarakhand more remunerative. On its successful completion, a press conference was organised for farmers to share their experiences. In the press conference, farmers expressed their happiness about the work being done by the Institute and were motivated for developing a cooperative society in their village. They were also confident in developing their village as a model under the guidance and technical support from the Institute. Dr P.K. Mishra explained about the initiative being taken up by the Institute under TSP programme and the process of effective transfer of soil and water conservation technologies in a participatory mode across the country. He also said that the intervention of creating a cooperative society in Attal village which can manage soil and water in an efficient manner, arrange quality inputs, provide technical back stopping and develop market linkages will be unique in Uttarakhand if intended purpose of social capital investment is achieved. Sh. Prem Chand Sharma who led this group of the farmers said that the way in which IISWC is implementing the TSP programme in Attal village, it will pave the way for others in developing model villages in other parts of Uttarakhand.

Stakeholders' Meet of Tribal Farmers in The Nilgiris

Baniyas, Kurumbas and Kattunaikas are primitive and resource poor tribal farmers located in the western part of the Nilgiris. To harness resources, especially natural resources for development of these tribes, IISWC Research



Centre, Udthagamandalam is working with NGOs, namely Centre for Tribal and Rural Development Trust (CTRD) and CARE India in the Nilgiris. Dr. K. Kannan, Senior Scientist of the Centre attended a stakeholders meet for tribal development and addressed 500 tribal farmers about the climate resilient farming for small tea growers. Stakeholders meet was organized by CTRD on December 23, 2014 at Gudalur for climate resilient small scale tea and plantation crop production with technical support from the IISWC Centre. While inaugurating the meet, Mr. M. Diravidamani, Member of Legislative Assembly, Gudalur appreciated the work done by the Centre for tribal farmers in the Nilgiris. Dr. K. Kannan explained to the gathering about the various demonstration activities taken up by the Centre under TSP, viz; soil and water conservation measures in tea plantation, multi-storey farming, organic production system, trainings, water harvesting systems etc. in this region for the benefit of tribal farmers. Line department officials; Programme Co-coordinator, KVK, The Nilgiris; and officials from Tea Board, Horticultural Department were present during the meet.

Interaction Workshop at Koraput for SHGs under Tribal Sub Plan

One day interaction workshop for SHGs was organized on November 11, 2014 under Tribal Sub Plan (TSP) - 2014-15 by IISWC Research Centre, Koraput at its Research Farm. A total of 27 women SHGs consisting



about 220 members from TSP adopted villages Mukhibidai, Patraput, Chalanput and Podagarh under Semiliguda Bloc of Koraput district participated. Various relevant issues of SHGs like existing activities run by them, different problems faced by them, probable viable options for their development, adoption of new promising livelihood/ income generating activities, scientific way of management of those activities for optimal return, marketing opportunities for agricultural produce, and linking with banking facilities etc., were discussed. Dr. M. Madhu, Head of Centre in his opening remarks expressed the important role played by women at household level and at society level for overall development of community. Group wise information were collected and discussed. Hand tools were distributed to all the participants. The general feedback of the SHGs members were problem in transportation and marketing of produce; non-availability of common meeting hall for SHGs; non-availability of timely financial support to the groups; non-availability of quality mushroom spawns; requirement of support for additional activities to strengthen their groups; need of some implements and tools; and, water resource development, pumping and micro irrigation.

Animal Health Camp Organized under TSP at Bellary Centre

A two day animal health camp was organized in two villages, Konasagara and Netranhalli, during December 29-30, 2014 under Tribal Sub Plan in collaboration with Department of Veterinary Sciences and Animal Health, Govt. of



Karnataka. During this camp, owners of a total of 5221 sheep and goats were provided with medicines for de-worming the animals, which were administered to the animals by the farmers themselves. Another lot of 54 cows (heifers and local breeds) were treated for various ailments, including foot and mouth disease (FMD), cough, and de-worming. AI was also carried out on three she-buffaloes which were in heat with frozen semen from *Murra* bulls. Sixteen sheep were also treated for scabies which is a contagious disease in this region and spreads quickly. Twelve pairs of bullocks (Mysore & Ongole breeds) were also treated for various ailments. Farmers were also provided with a mineral nutrient mixture (NutriMin) developed by an ICAR Institute under NAIP.

Agricultural Implements Distributed under TSP at RC Koraput

Under Tribal Sub Plan (TSP), a gathering was organized by IISWC Research Centre, Koraput at village Chalanput, Gram Panchayat Rajput, Block Semiliguda on January 20, 2015. About 400 farmers from four adopted villages



under TSP i.e., Chalanput, Patraput, Podagad and Mukhibidei attended the event. Besides, members of 27 Self Help Groups (SHGs) from the four villages also participated in the event. The function was presided by Dr. M. Madhu, Head of Centre and Mrs. Malati Majhi, Chairman, Zila Parisad, Koraput district was the Chief Guest of the

programme. During the programme, the Chief Guest expressed her concern about the poor economic conditions of the women farmers of the district. She briefed about the different developmental schemes implemented by the State Government for improvement of agricultural production and called upon the farming community to take benefits from different programmes and schemes of Government. She extolled IISWC Centre for working in tribal district for natural resource conservation. Dr. M. Madhu briefed about the objective of the programme and need of soil of water conservation and watershed management for livelihood support of tribal farmers. The Chief Guest distributed agricultural implements (paddy thresher, winnower, marker, potato digger, transplanter, *khurpi*, spade, sickle etc.) provided under TSP by the Centre to farmers and SHGs on this occasion. Farmers of the villages expressed various problems of their villages to the Chief Guest, and sought out her help.

Training and Capacity Building Done under TSP at Attal & Sainji

Farmers of Attal and Sainji villages were trained on various aspects of soil and water conservation and watershed management. Under these initiatives, the Institute conducted five training and capacity building programmes through which 145 farmers were trained. Specialized training on Horticulture planting techniques and soil & water conservation practices; HDPE pipe welding, air release mechanism and maintenance; and simple engineering surveying for laying water pipe line in hilly terrain were given to selected local people. It yielded better sustainability of water resource interventions taken up in this area.

संसदीय राजभाषा समिति द्वारा संस्थान के अनुसंधान केन्द्र, ऊधगमंडलम् का राजभाषा संबंधी निरीक्षण

संस्थान के अनुसंधान केन्द्र, ऊधगमंडलम् का राजभाषा संबंधी निरीक्षण संसदीय राजभाषा समिति की दूसरी उप समिति द्वारा दिनांक 1.1.2015 को किया गया। निरीक्षण दूसरी उप समिति के उपाध्यक्ष मा. डा. सत्यनारायण जटिया जी की अध्यक्षता में नई दिल्ली में संपन्न हुआ। भारतीय कृषि अनुसंधान परिषद् की ओर से डा. एस.के. चौधरी, उपमहानिदेशक, श्री हरीश चन्द्र जोशी, निदेशक (राजभाषा) तथा संस्थान से डा. प्रशांत कुमार मिश्रा, निदेशक, डा. ओ.पी.एस. खोला, केन्द्राध्यक्ष, ऊधगमंडलम् तथा श्री अनिल कुमार सिंह, मुख्य प्रशासनिक अधिकारी समिति के समक्ष प्रस्तुत हुए। निरीक्षण के दौरान समिति के सचिव श्री सूरज भान, अवर सचिव, डा. श्रीप्रकाश शुक्ल भी उपस्थित थे। समिति ने 'ग' क्षेत्र में स्थित अनुसंधान केन्द्र, ऊधगमंडलम् द्वारा कार्यालय के कामकाज में हिन्दी के प्रचार-प्रसार के लिए किए गए कार्य की सराहना की और इस कार्य को आगे बढ़ाने के लिए कुछ सुझाव भी दिए। जिसके अनुपालन के लिए संस्थान द्वारा समिति को आश्वासन दिया गया।



भाकृअनुप-भा.मू.ज.सं.सं., अनुसंधान केन्द्र, कोटा में 'हिन्दी चेतना माह' का आयोजन

कोटा केन्द्र पर दिनांक 15 सितम्बर, 2014 को हिन्दी चेतना माह का विधिवत शुभारम्भ किया गया एवम् हिन्दी गोष्ठी का आयोजन किया गया। जिसमें केन्द्र के सभी अधिकारियों एवं कर्मचारियों ने भाग लिया एवं कार्यक्रम की अध्यक्षता केन्द्राध्यक्ष डा. आर. के. सिंह ने की। केन्द्र के हिन्दी अधिकारी डा. बी. एल. मीना ने हिन्दी में किये जा रहे कार्यों का विवरण प्रस्तुत की एवं राजभाषा विभाग द्वारा समय समय पर जारी किये जाने वाले निर्देशों का उल्लेख कर इससे सम्बद्ध अपेक्षाओं से सहभागियों को अवगत कराया। डा. मीना ने

भारतीय कृषि अनुसंधान परिषद के महानिदेशक का संदेश पढ़कर सुनाया साथ ही साथ सभी से अपील की कि अधिक से अधिक पत्राचार हिन्दी में किया जाये। केन्द्र के कर्मचारियों को हिन्दी टंकण एवं आशुलिपि आदि में प्रशिक्षण की आवश्यकता पर जोर दिया ताकि कर्मचारियों को हिन्दी में कार्य करने की कार्यक्षमता बढ़े।



केन्द्र के पूर्व हिन्दी अधिकारी डा. ए. के. परन्दियाल ने हिन्दी चेतना मास के महत्व पर प्रकाश डालते हुए हिन्दी को राजभाषा बनाये जाने के संवैधानिक पक्ष की जानकारी दी। उन्होंने हिन्दी भाषा के प्रचार प्रसार में अहिन्दी भाषियों के योगदान का स्मरण करते हुए, फादर कमलि बुल्के के हिन्दी प्रसार में योगदान की चर्चा की। केन्द्राध्यक्ष डा. आर. के. सिंह ने हिन्दी भाषा को राष्ट्र के चिन्तन का प्रतीक बताते हुए कहा कि हिन्दी एक तकनीकी रूप से समृद्ध भाषा है तथा विचारों के स्तर पर मौलिक चिन्तन को बढ़ावा देती है। केन्द्र के अन्य अधिकारियों एवं कर्मचारियों ने भी अपने अपने विचार प्रस्तुत किये। दिनांक 26.09.2014 को निबंध प्रतियोगिता का आयोजन किया गया। जिसका विषय था 'राष्ट्र की प्रगति में कृषि का महत्व'।

हिन्दी चेतना मास समापन समारोह का आयोजन डा. आर. के. सिंह की अध्यक्षता में 14 अक्टूबर, 2014 को किया गया जिसमें केन्द्र के सभी वैज्ञानिकों, अधिकारियों एवं कर्मचारियों के अलावा विभिन्न स्कूल के विद्यार्थियों, शिक्षकों एवं गणमान्य हिन्दी के कवियों ने भाग लिया। कार्यक्रम का संचालन डा. बी. एल. मीना द्वारा किया गया। डा. आर. के. सिंह ने सभी को कार्यालय एवं वैज्ञानिक कार्यकलापों में हिन्दी का अधिक से अधिक कार्य करने की प्रेरणा दी। साथ ही साथ उन्होंने निबन्ध प्रतियोगिता के प्रतिभागियों को उनके उत्तम प्रयास के लिये सराहा। कार्यक्रम के मुख्य अतिथि श्री संजय शुक्ला एवं केन्द्राध्यक्ष डा. आर. के. सिंह ने निबन्ध प्रतियोगिता में प्रथम, द्वितीय एवं तृतीय स्थान पर रहे विद्यार्थियों को पुरस्कार एवं प्रमाण पत्र एवं सहभागिता करने वालों को सात्वना पुरस्कार प्रदान किये गये। इस दौरान हिन्दी दिवस से सम्बन्धित कविताओं एवं लेखों पर भी विस्तृत चर्चा की गयी। वर्तमान में हमारे केन्द्र पर लगभग 85 प्रतिशत पत्राचार एवम् 90 प्रतिशत दैनिक कार्य हिन्दी में किये जाते हैं। फिर भी इस कार्य को शतप्रतिशत हिन्दी में करने हेतु संकल्प लिया गया। जिसमें विभिन्न निर्णय लिये गये हैं। समापन समारोह में सरस काव्य गोष्ठी का आयोजन किया गया एवं गोष्ठी का संचालन कमलेश चौधरी ने किया। देश के विख्यात वीर रस के कवि श्री संजय शुक्ला ने अपनी स्वरचित रचना वन्देवातरम का स्वस्वर गायन करके श्रोताओं को रोमांचित कर दिया। कोटा के हास्य रस के प्रख्यात कवि श्री हलीम आईना ने भ्रष्टाचार पर अपनी स्वरचित कविता सुनाकर श्रोताओं को गुदगुदाया। केन्द्र के तकनीकी अधिकारी एवं कवि श्री कमलेश कुमार चौधरी ने हिन्दी मातृभाषा के सम्मान में स्वरचित कविता पाठ किया। कार्यक्रम के अन्त में डॉ. अशोक कुमार के द्वारा केन्द्राध्यक्ष महोदय, विभिन्न स्कूलों के विद्यार्थियों, शिक्षकों, गणमान्य कवियों एवं सभी प्रतिभागियों को धन्यवाद दिया गया एवं गोष्ठी सम्पन्न हुई।

भा.मू.ज.सं.सं., अनुसंधान केन्द्र, उदगमण्डलम में 'हिन्दी चेतना माह' का आयोजन

विगत वर्षों की भाँति इस वर्ष भी केन्द्र पर हिन्दी चेतनामास का आयोजन दिनांक 16-09-2014 से 15-10-2014 के दौरान किया गया। हिन्दी चेतनामास का उद्घाटन समारोह दिनांक 16-09-2014 को डा. पी.के. मिश्रा, निदेशक, केन्द्रीय मृदा एवं जल संरक्षण अनुसंधान एवं प्रशिक्षण संस्थान, देहरादून की अध्यक्षता में संपन्न हुआ। हिन्दी चेतना मास के दौरान केन्द्र पर विभिन्न प्रतियोगिताओं (शब्द लेखन, त्वरित वक्तव्य/भाषण, वाद-विवाद प्रतियोगिता एवं हिन्दी ज्ञान प्रश्नोत्तरी) का आयोजन किया गया।





सभी प्रतियोगिताओं में केन्द्र के अधिकारियों एवं कर्मचारियों ने बढ़-चढ़ कर प्रतिभाग किया। सभी में हिन्दी सीखने के प्रति उत्साह देखा गया। हिन्दी चेतनामास का समापन समारोह दिनांक 15-10-2014 को केन्द्र के सभागार में सायं 3-00 बजे संपन्न हुआ। समारोह के मुख्य अतिथि डा. अतुल जैन, प्रभारी अधिकारी, कॉस्मिक रे लैबोरेटरी, उद्गमण्डलम थे। कार्यक्रम के प्रारंभ में श्री एन.पी. शर्मा, प्रभारी अधिकारी (राजभाषा) ने सभागार में उपस्थित सभी अधिकारियों एवं कर्मचारियों का स्वागत संबोधन किया। तत्पश्चात् दीप प्रज्वलन एवं साथ ही वन्दना गीत प्रस्तुत किया गया तथा प्रभारी केन्द्राध्यक्ष डा. (श्रीमती) पी. सुन्दरबाल ने मुख्य अतिथि, डा. जैन को पुष्पगुच्छ भेंट कर सम्मान किया। इसके बाद श्री एन.पी. शर्मा ने संक्षेप में केन्द्र पर हिन्दी की गतिविधियों पर प्रकाश डाला तथा साथ ही वर्ष भर के निर्धारित लक्ष्यों के बारे में भी बताया। उन्होंने मा. केन्द्रीय कृषि मंत्री, श्री राधामोहन सिंह के हिन्दी सन्देश को सभी को पढ़कर सुनाया। मुख्य अतिथि महोदय, डा. अतुल जैन द्वारा उपरोक्त प्रतियोगिताओं के विजयी प्रतिभागियों को प्रथम, द्वितीय एवं तृतीय पुरस्कार प्रदान किये। तत्पश्चात् केन्द्र की प्रभारी केन्द्राध्यक्ष ने इस अवसर पर अपने उद्गार प्रस्तुत करते हुए कहा कि केन्द्र पर हिन्दी की काफी प्रगति हुई है उन्होंने बताया कि केन्द्र पर प्रत्येक त्रैमास में एक हिन्दी बैठक व एक हिन्दी कार्यशाला का आयोजन विधिवत किया जा रहा है तथा विगत वर्ष में तीन अधिकारी एवं कर्मचारी हिन्दी में प्रशिक्षित भी किये गये। हिन्दी संबंधी सभी प्रतिवेदन समय पर प्रस्तुत हो रहे हैं। उन्होंने कहा कि वर्तमान प्रयास आने वाले समय में और रंग लायेंगे तथा केन्द्र हिन्दी के निर्धारित लक्ष्यों को प्राप्त करने में सक्षम हो सकेगा। इसके बाद मुख्य अतिथि महोदय, डा. अतुल जैन ने अपने उद्बोधन में कहा कि सभी देशों की अपनी राजभाषाएं हैं लेकिन भारत को अपनी राजभाषा को पहचान दिलाने के लिए संघर्ष करना पड़ रहा है। सभी देशों के किसान विज्ञान को अपनी भाषा में समझते हैं लेकिन भारत में अभी ऐसा संभव नहीं हो पाया है। किसान विज्ञान की भाषा को अंग्रेजी में समझने में असमर्थ हैं। उन्होंने लैब टू लैण्ड का उदाहरण देते हुए कहा कि हमारी प्रयोगशाला में जो अनुसंधान किये जा रहे हैं वे तभी किसान तक पहुँच सकेंगे जब उनके वार्तालाप की भाषा हिन्दी होगी। उन्होंने सभी से अधिक से अधिक हिन्दी सीखने का आग्रह किया। इसके बाद प्रभारी केन्द्राध्यक्ष ने मुख्य अतिथि महोदय को समृति चिन्ह भेंट किया। अंत में श्री एन.पी. शर्मा, प्रभारी राजभाषा अधिकारी ने आभार व्यक्त किया।

ICAR NEWS/WEBSITE REPORTING

- Community-based water storage structures in the Central Plateau Hill region of Rajasthan. ICAR News, 20 (4): 18.
- Vegetative filter strips for preventing soil and nutrient losses from the fields. ICAR News, 20 (4): 19.
- Reclamation of shallow ravines for agriculture at Kota. ICAR News, 20 (4): 19.
- Sorghum and chickpea energy utilization under poor rainfall conditions in semi-arid tropics. ICAR News. 20 (4): 22.
- ICAR-CSWCRTI celebrated World Fisheries Day. ICAR website. November 21, 2014.
- World Water Day Celebrated. ICAR website, March 22, 2015.
- Tribal farmers of Uttarakhand visit Gujarat. ICAR Reporter, October-December: 14.
- Irrigation and Green Water Conservation Techniques. ICAR Mail. January 2015. 5 (11): 2.
- World Water Day 2015. ICAR Mail, 6(1) March 2015 :1-2.

AWARDS AND RECOGNITIONS

- Dr. N.K. Sharma, Head, Soil Science & Agronomy: ISA Fellowship by Indian Society of Agronomy, IARI, New Delhi.
- Dr. O.P.S. Khola, Pr. Scientist & Head: Fellow of the Indian Association of Soil and Water Conservationists (IASWC) in the year 2013; Fellow, Indian Society of Agronomy for the Year 2011 by Indian Society of Agronomy, New Delhi on Nov. 18 2014.

- Dr. S.K. Dubey, Pr. Scientist & Head: Gold Medal Award 2014 by Soil Conservation Society of India (SCSI); Fellowship Award-2014 by Indian Association of Soil & water Conservation; Fellowship Award-2015 by Bioved Research Society of India.
- Dr M. Madhu, Pr. Scientist & Head: Fellow of Indian Association of Soil and Water Conservationist (IASWC) - 2014
- Dr Ambrish Kumar, Pr. Scientist (SWCE): Received Eminent Engineers Award of Institute of Engineers, UKSC.
- Dr. V.K. Bhatt, Pr. Scientist (SWCE): Dr. K.G. Tejwani Award for biennium 2012-13 by IASWC on February 13, 2015.
- Dr. S.P. Tiwari, Pr. Scientist & Head: Nominated by the District Collector Datia as a special invitee member/Technical expert (Watershed Development) in District level committee of National Sustainable Agriculture Mission (NSMA).
- Dr. G.L. Bagdi, Pr. Scientist (Agri. Extn.): ISEE Fellow Award in recognition of outstanding contributions in the fields of Extension Education.
- Dr. D.R. Sena, Pr. Scientist (SWCE): Leadership Award 2014 by Soil Conservation Society of India.
- Dr. B.K. Rao, Sr. Scientist (SWCE) & Dr. Gopal Kumar, Scientist (Soils): Young Scientist Award by Indian association of Soil and Water Conservationists.
- Dr. A. Raizada, Pr. Scientist and Head: Best Research Paper Award from Indian Association of Soil and Water Conservation in the category of Forestry and Agroforestry.
- Dr. B.N. Ghosh, Pr. Scientist (Soils) and Dr N.M. Alam, Scientist (Agril. Stat): Second and third prize respectively in Hindi *Sulekh Pratiyogita* in Hindi *Saptah*.
- Dr. H. Biswas, Sr. Scientist (Soils): Commendation certificate for the best participating trainee in a short course on "Advance Technologies in Land & Water Remediation and Management" held at ICAR-CSSRI, Karnal from September 15- 24, 2014.
- Mr. Manish Kumar, Scientist (Agroforestry): "Best trainee" award along with five merit certificates during four months certificate course on "SWC & WM" organized by ICAR-IISWC, Dehradun.
- Er. (Mrs.) Monalisha Pramanik, Scientist (SWCE): Merit certificate in the Engineering subject during four month certificate course on "SWC & WM" organized by ICAR-IISWC, Dehradun.
- Dr. M. Muruganandam, Sr. Scientist: Recognized as external examiner for evaluation of M.Sc. and Ph.D. thesis by the Madurai Kamraj University (MKU), Madurai, Tamil Nadu.
- Dr(s). A.K. Sikka, M. Madhu, Subhash Chand, D.V. Singh, V. Selvi, K. Jeevarathanam and M. Murgaiyah: Best Paper Award from Indian Association of Soil and Water Conservationists.
- Dr(s). R.S. Kurothe, A.K. Vishwakarma, D.R. Sena, Gopal Kumar, B.K. Rao and V.C. Pande: Best Paper Award by Indian Association of Soil and Water Conservation.
- Dr(s). Pankaj Panwar, Sharmistha Pal, V.K. Bhatt, Ram Prasad, Rajesh Kaushal and N.M. Alam: Second Best Research Paper Award from International Journal of Bioresource and Stress Management.
- Dr(s) Sharmistha Pal, Pankaj Panwar and Mr. Anand Kr. Gupta: Best Poster Award in International Conference on "Natural Resource Management for Food Security and Rural Livelihoods held at New Delhi.

SOFTWARE DEVELOPMENT

- Dr(s). Pankaj Panwar, Chayna Jana, Mehru Alam, R. Kaushal and P.K. Mishra: Software on DBMS for Project Monitoring and Evaluation (PME) has been developed and sent for copy right:

- Dr(s). R.P. Yadav, Pankaj Panwar, Chayna Jana and P.K. Mishra: Software on Project Management Information System Software (PMIS) on Preparation of Detailed Project Report (DPR) for Watershed Management has been developed and sent for copy right.

IMPORTANT PUBLICATIONS

Research Papers

- Adhikary, P.P., Tiwari, S.P., Mandal, D., Lakaria, B. and Madhu, M. (2015). Geo spatial comparison of four models to predict soil erodibility in a semi-arid region of central India. *Environ Earth Sci.*, 72(12):5049-5062.
- Bhattacharyya, R., Pandey, A.K., Gopinath, K.A., Mina, B.L., Bisht, J.K. and Bhatt, J.C. (2014). Fertilization and crop residue addition impacts on yield sustainability under a rain fed maize-wheat system in the Himalayas. Proceeding of *National Academy of Science. Sect. B. Biol. Sci.* DOI10.1007/s40011-014-0394-8.
- Bhattacharyya, T., Ray, S.K., Maurya, U.K., Chandran, P., Pal, D.K., Durge, S.L., Nimkar, A.M., Sheikh, S.M., Kuchankar, H.W., Telpande, B., Dongare, V. and Kolhe, A. (2015). Carbon and nitrogen estimation in soils : Standardizing methods and internal standards for C/N analyzer. *J. Indian Chem. Soc.*, 92: 263-269.
- Das, A., Ghosh, P.K., Verma, M.R., Munda, G.C., Ngachan, S.V. and Mandal, D. (2015). Tillage and residue mulching effect on productivity of maize (*Zea mays*) toria (*Brassica campestris*) cropping system in fragile ecosystem of northeast Indian Himalayas. *Experimental Agriculture*, 51(1):107-125.
- Dotaniya, M.L., Datta, S.C., Biswas, D.R., Meena, H.M. and Kumar, K. (2014). Production of oxalic acid as influenced by the application of organic residue and its effect on phosphorus uptake by wheat (*Triticum aestivum* L.) in an Inceptisol of North India. *National Academy Science Letter*, DOI 10.1007/s40009-014-0254-3.
- Ghosh, B.N., Dogra, P., Sharma, N.K., Alam, N.M., Singh, R. and Mishra, P.K. (2015). Effects of resource conservation practices on productivity, profitability and energy budgeting in maize-wheat system of Indian sub-Himalayas. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, DOI: 10.1007/s40011-015-0492-2.
- Hedau, N.K., Tuti, M.D., Stanley, J., Mina, B.L., Agrawal, P.K., Bisht, J.K. and Bhatt, J.C. (2014). Energy-use efficiency and economic analysis of vegetable cropping sequences under greenhouse condition. *Energy Efficiency*, 7(3): 507-515.
- Lal, B., Rana, K.S., Rana, D.S., Gautam, P., Shivay, Y.S., Ansari, M.A., Meena, B.P. and Kumar, K. (2014). Influence of intercropping, moisture conservation practice and P and S levels on growth, nodulation and yield of chickpea (*Cicer arietinum* L.) under rainfed condition. *Legume Research*, 37 (3): 300-305.
- Mahanta, D., Bhattacharyya, R., Sahoo, D.C., Tuti, M.D., Gopinath, K.A., Arunkumar. R., Mina, B.L., Pandey, B.M., Bisht, J.K., Srivastva, A.K. and Bhatt, J.C. (2015). Optimization of farmyard manure to substitute mineral fertilizer for sustainable productivity and higher carbon sequestration potential and profitability under garden pea-french bean cropping system in the Indian Himalayas. *Journal of Plant Nutrition*, DOI: 10.1080/01904167.2015.1009096.
- Meena, R.K., Mahawer, L.N., Saroj, P.L., Sarolia, D.K., Meena, H.R. and Kanwat, M. (2014). Integrated nutrient management in rejuvenated guava (*Psidium guajava*) orchard under semiarid conditions of Eastern Rajasthan. *The Indian Journal of Agricultural Sciences*, 84: 1457-63.

- Patil, S.L., Mishra, P.K., Loganandhan, N., Ramesha, M.N. and Math, S.K.N. (2014). Energy, economics, and water use efficiency of chickpea (*Cicer arietinum* L.) cultivars in Vertisols of semi-arid tropics, India. *Current Science*, 107 (4): 656-664.
- Rao, B.K., Kurothe, R.S., Mishra, P.K., Kumar, G., Pande, V.C. (2015). Climate change impact on design & costing of soil & water conservation structures in watersheds. *Current Science*, 108(5):960-966.
- Sharma, S.D., Kumar Pramod and Yadav, S.K. (2014). Glomus-Azotobacter Association Affects Phenology of Mango Seedlings Under Reduced Soil Nutrient Supply. *Scientia Horticulturae*, 173: 86-91.
- Verma, R.K., Verma, S.K., Umesh Pankaj, Gupta, A.K., Khan, K. and Shankar, K. (2014). Improvement in the yield and quality of kalmegh (*Andrographis paniculata* Nees) under the sustainable production system. *Natural Product Research*, DOI: 10.1080/14786419.2014.971791..

Books

- Mishra, P.K., Dadhwal, K.S., Juyal, G.P., Tiwari, A.K., Khola, O.P.S., Dubey, S.K., Kurothe, R.S., Tiwari, S.P., Chaturvedi, O.P., Raizada, A., Singh, R.K., Madhu, M., Sharma, N.K., Dhyani, B.L., Mehta, H. and Singh C. (2014). किसानों के लिए अधिक और टिकाऊ पैदावार हेतु मृदा एवं जल संरक्षण तकनीकें। CSWCRTI, Dehradun. pp. 1-200.
- Prasad, R., Chary, G.R., Rao, K.V., Prasad, Y.G., Ch. Srinivasarao, Ramanana, D.B.V., Sharma, N.K., Rao, V.U.M. and Venkateswarlu, B. (2013). District level contingency plans for weather aberrations in Himachal Pradesh. CSK HPKV, Palampur and CRIDA, Hyderabad: 222p.
- Raizada, A., Patil, S.L., Biswas, H., Reddy, K.K., Khola, O.P.S., Mandal, D., Chaturvedi, O.P. and Mishra, P.K. (2015) Managing Natural Resources in the Drylands Constraints and Opportunities. Satish Serial Publishing House, Delhi: 395 p.
- Sundarambal, P. (2014). Role performance of formal and Informal leaders - A comparative Study in Agricultural Production. Lambert Academic publishing company, Germany ISBN. No. 978-3-659--15678-6: 154 p.

Technical Reports/ Brochures

- Bihari, Bankey, Dhyani, B.L., Kumar, A., Kumar, S., Singh, C., Mandal, D., Muruganandam, M., Madhu, M., Sharma, S.K., Kumar, Rakesh, Kumar, A. (2014). Participatory Irrigation Resource Development and Management in North-Western Himalayan Region. CSWCRTI, Dehradun, India (In Hindi): 34p.
- Madhu, M., Naik, B.S., Jakhar, P., H.C. Hombe Gowda, Adhikary, P.P., Gore, K.P. (2014). *Impact assessment of watershed development in Lacha Putra Ghati Watershed, Koraput, Odisha*. Technical Bulletin. CSWCRTI, Dehradun, India: 49 p.
- Naidu, L.G.K., Sikka, A.K., Srinivas, S., Selvi, V., Krishnan, P., Singh, D.V., Dipak, Sarkar, Singh, S.K., Madhu, M. and Mishra, P.K. (2014). Soil Erosion of Kerala. NBSS&LUP Publ. No. 163: 36 p.
- Narayan, D. and Tiwari, S.P. (2014). Contour bunds for resource conservation and sustainable production in red soils of Bundelkhand. Tech. Brochure, CSWCRTI, Research Centre, Datia: 7p.
- Ramamurthy, V., Nalatwadmath, S.K., Srinivas, S. Rama Mohan Rao, M.S., Shivaprasad, C.R., Adhikari, R.N., Naidu, L.G.K., Patil, S.L., Raizada, A., Sarkar, Dipak, Singh, S.K. and Mishra, P.K. (2014). Soil Erosion in Karnataka. Publication of the NBSS&LUP & CSWCRTI, NBSS&LUP Publ. No.162: 70p.
- Singh, C., Dhyani, B.L., Bihari, Bankey, Murganandam, M., Mandal, D., Madhu, M., Kumar, Ambrish, Kumar, Suresh, Kumar, Ashok,



Kumar, Rakesh and Sharma, S.K. (2014). Hybrid Napier - A Better Option for Fodder and Resource Conservation, CSWCRTI, Dehradun, India: 36p.

Radio Talks

- Dr. G.L. Meena, Scientist (Soil Science) delivered a radio talk on “*Mrada Parkshan: Kab, Kyon aur Kaise*” at AIR Kota on Oct. 7, 2014.
- Sh. H.R. Meena, Scientist (Horticulture) delivered a radio talk on the topic “*Dhaniya ki unnat kheti aur udyaniki me krishi karya*” at AIR, Kota on November 4, 2014.
- Dr. B.L. Mina, Senior Scientist (Soil Science) delivered a radio talk on the topic “*Rabi faslon se adhik utpadan hetu vegyanik sujhav*” at AIR, Kota on November 17, 2014.
- Sh. H.R. Meena, Scientist (Horticulture) delivered a radio talk on the topic “*Phal sabjiyon me hormones avam paushak tatvon ki upyogita*” at AIR, Kota on February 12, 2015.
- Sh. S. Kindal delivered Radio talk on “*Nalore Mrutika Samrakhyano pain Taro Jail Adi - bandharo Gurutwa*” aired on Oct. 7, 2014 at AIR, Jeypore.

DISTINGUISHED VISITORS

Agra: Dr. Dhiraj Singh, Director, Directorate of Rapeseed Mustard Research, Bharatpur; Dr. S.K. Agrawal, Director, Central Institute of Research on Goats, Makhdoom, Mathura; Dr. Mrs. B. Geeetha Singh, Head, Department of Botany, St. John's College, Agra; Dr. V.K. Dwivedi, Director, Bioved Foundation, Allahabad; Dr. A.K. Singh, VC, RKVV, Gwalior; Dr. D.K. Sharma, Director, CSSRI, Karnal.

Bellary: Dr. Anand. S. Kamble, Asst. Prof. (Agronomy), Agricultural Research Station, Hagari, Ballari; Students from C.A.E.T (JAU), Junagadh; C.A.E.T. Dapoli, Dist: Ratnagiri, Maharashtra; Pupil Tree school, Talur road, Bellary; Students from UAS, Bengaluru; Mr. Kaleel, Jain Public School, Bellary; Veerashaiva Collage, Bellary; Nandi School, Bellary; Basavarajeshwari Public School and College, Anantapur, Bellary.

Chandigarh: Dr. J.S. Samra, CEO, NRAA, New Delhi; Dr. A.K. Sikka, DDG(NRM), ICAR; Sh. R. Rajagopal, Addl. Secretary (DARE) & Secretary (ICAR); Sh. V.D. Naniwadekar, Deputy Secretary (Vigilance), ICAR; Dr. K.K. Singh, (A.D.G.P E), ICAR; Sh. S.P. Mittal, Retd. PS (Agronomy) along with a team of Japanese Scientists; Dr. D.K. Sharma, Director, CSSRI, Karnal; Sh. A.K. Sondhi, Retd. Chief Conservator of Soils, Punjab.

Dehradun: Prof. Andreas Klik, Dr. Josef Rosner and Dr. Gernot Bordner, Institute of Hydraulics and Rural Water Management BOKU - University of Natural Resources and Life Sciences Vienna; Dr. C.K. Karidayal, Deputy Director, UFTA; Sh. Praveen Kr. Sharma, Deputy Director, UFTA; Dr. Narhari Mishra, M.D. (OTG), Puri; J. Jacob, Assistant Director, Kerala; Block Project Manager, HPCDJICA, H.P.; Dr. Virender Singh, Chief Scientist and Dr. R.K. Sud, Sr. Principal Scientist, IHBT (CSIR), Palampur, H.P.; Dr. S.C. Saxena and Dr. V.P. Singh, Professor (Agronomy); Dr. S.S. Adivar, Professor, UAS Dharwad; Dr. A.R. Upadhyay, Institute of Forestry, Nepal; Dr. M.S. Mane and Dr. S.K. Jain, Prof. & Heads, College of Engineering & Technology, Dapoli; Dr. B.C. Oram, BAU, Ranchi; Dr. S.S. Sharma and Dr. P.K. Baweja, UHF, Solan, H.P.; N. Luikham, Principal I/C Burnihat, Assam.

Datia: Dr. P.R. Rajput, Guest Professor (Agronomy) RSKVV, Gwalior (MP); Dr. B. Mohan Kumar, Asstt Director General, ICAR New Delhi; Dr. D.K. Sharma, Director, ICAR- CSSRI, Karnal (Haryana); Mr. M.P. Sharma, ADO, Block-Pohari Distt- Shivpuri; Mr HS Chauhan,

Dy Project Director, ATMA, Distt Shivpuri; Mr. B.K. Agnihotri, Tech. Expert, Irrigation and Water Resource Department, Distt Hathras (UP); Sh. A.N. Sharma and Sh. N.D. Prajapati, ADO, Soil Conservation Office, Guna; Sh Harendra Singh, Dy. Project Director, ATMA, Distt Sheopur; Mr. Raghuvver Singh Yadav, Block Technical Manager, (BTM) ATMA, Distt Shivpuri; Mr. Surendra Tiwari, Block Technical Manager, ATMA, Distt Sagar; Sh. A.K. Pandey, Sr. Horticulture Development Officer, Block Seondha Distt- Datia (MP).

Koraput: Naresh Chandra Patro, Sci.(SS) M.S. Swaminathan Research Foundation, Jeypore; Sh. B.K. Panda, DFO. Koraput; Ms Monalisha Tripathy, WMT(S) IWMP-1 Dist- Khurda, Odisha; Smt. Indera Priyadarshini Pattnaik, Prof.(Eng) Women College, Sunabeda; Sh. Pancham Lal, DC COBRA Battalion, Sunabeda; Sh. B.S. Kalo, PD, Sh. B.B. Pal, TE Watershed Koraput; Mr. B.K. Samantray Mrs. Renubala Swain Programme Coordinator (FAAR); Smt. Puspanjali Ningi, IIC Police Station, Sunabeda.

Kota: Dr. D.P. Shah, Scientist, Bihar Agril. University, Bhagalpur; Dr. Hemant Kumar, I.I.P.R., Kanpur; Dr. V. Dwevedi, P.C., KV.K., Buxar; Dr. Hemchand, Head, IGFRI, Jhansi; Er. I. Bhaskaran Rao, C.A.E., Bhopal; Dr. S.K. Verma, Dean, R.V.K.V. Gwalior; Dr. Y.K. Sharma, N.R.C.S. Ajmer; Dr. N.N. Pandey, Sr. Scientist, ICAR-DLFR, Bhimtal (Uttarakhand); Dr. A.K. Dubey, R.A.E.O., S.A.D.O., Mulati, Distt. Betul; Mr. S.C. Rathore, RAEO, Athriar, Distt Betul (M.P.); Mr. Dharmendra Dubey, Satpura Science Kendra, Hata, Distt. Damoh (M.P.); Dr. M.S. Meena, Pr. Scientist, ZPD, Jodhpur.

Udhagamandalam: Dr. B.C. Mal, IIT Kharagpur, former Vice Chancellor, CSVTU, Bhilai; M.Tech., (Environmental Engineering) students from Pondicherry University, Pondicherry; Dr. Ranjoodh Singh, Ex-Director (Research) HPKV, Palampur, Dr. P.S. Pathak, Ex Director, IGFRI, Jhansi; Dr. S.K. Sharma, Ex. Director, IIFSR, Modipuram; Dr. K.K. Satpathy, Ex-Director, NIRJAF; Dr. Ram Babu, Ex Head, Economics & Project Planning, IISWC, Dehradun; Dr. S.K. Chaudhari, ADG (S&WM), ICAR, New Delhi; Dr. Vijayakumar, UAS, Raichur; Dr. B. Anita, Professor & Head, HRS, Ooty; Dr. Tushar, Goa; Sh. A. Muzhar, Wood Side School, Ooty; Students from J.S.S. Public School, CSI, CMM Hr. Sec. School; Farmers from IWMP-VI, Krishnagiri District (TN); Students from UAS, Dharwad; Farmers from IWMP-IV, Madurai (TN); Dr. S.P. Sonawane, Dr. BSKKV, Dapoli (MS); Dr. N. Samivel, Asstt. Director of Agriculture, Kerala; Dr. B.P. Yadav, New Delhi; Sh. P. Devaprakash, Prof. A.V. Iyengar, Director, Kotagiri Agricultural Management Centre; FRO-Trainees Batch 2014-15, CASFOS, Coimbatore; Dr. T.S. Ashokekumar, IFS, Principal, CASFOS, Coimbatore.

Vasad: Dr. A.K. Sikka, DDG(NRM), ICAR, New Delhi; Sh. S.R. Jageri, DDM, NABARD, Vadodara, Gujarat; Sh. M.B. Khandare, Taluka Agricultural Officer, Chikhodara, Amradi (MS); Dr. Pradipkumar M. Bhatt, Director, Institute of Distance Education, AAU, Anand; Prof. Neha Chauhan, Dept. of Civil Engineering, Charuset, Changa, Gujarat; Sh. Pankaj M. Vaidya, MDT Agri. DWDU, Vadodara, Gujarat; Sh. Ajay V. Narwade, Asstt. Professor, N.M. College of Agriculture, NAU, Navsari, Gujarat; Dr. N.H. Brahmabhatt, V.P. Science College, VV Nagar, Gujarat.

FOREIGN VISITS

- Dr. D. Mandal, Sr. Scientist (Soils) and Er. S. Patra, Scientist (SWCE) and attended a joint Workshop in BOKU University, Vienna, Austria under Indo-Austria project from Nov. 30 to Dec. 2014.
- Dr. J.M.S. Tomar, Sr. Scientist (Forestry) attended training on “Geo-Informatics Mapping in Agroforestry” organized by ICRAF at Nairobi, Kenya from December 1-5, 2014.

WORKSHOPS/TRAININGS/VISITS/MELAS/DAYS/WEEKS ORGANIZED

- Four Months Regular Training Course on “Soil and Water Conservation and Watershed Management” from October 8, 2014 - February 7, 2015 by HRD&SS Division, Dehradun.
- Hindi *Kavya Goshthi* organized on Oct. 13, 2014 at Res. Centre, Kota.
- Two On-farm Trainings on “Soil and Water Conservation Measures in Tea and Plantation Crops for Climate Resilient Agriculture” on Oct. 13 and 28, 2014 sponsored by Centre for Tribal and Rural Development Trust at Research Centre, Udhagamandalam.
- Closing Ceremony of *Hindi Chetna Mass* on October 15, 2014 at Research Centre, Udhagamandalam.
- Agriculture Education Day organized on October 15, 2014 at Research Centre, Vasad.
- Agriculture Education Day organized on October 16, 2014 at Research Centres, Kota and Udhagamandalam.
- 61st Centre's Foundation day celebrated on Oct. 19, 2014 at RC, Kota.
- 61st Centre's Foundation day celebrated on October 20, 2014 at Research Centre, Udhagamandalam.
- Training-cum-Exposure Visit Programme of students of M.Sc. (Ag) and Ph.D. Agronomy, Soil Science and Agriculture Chemistry of Raj Mata Vijayaraje Scindia Krishi Viswa Vidyalaya, Gwalior M.P on November 6, 2014 at Research Centre, Datia.
- Training (2 nos.) on “Integrated Watershed Management” sponsored by DWDA, Villuppuram by Research Centre, Udhagamandalam.
- Training-cum-Exposure Visit Programme of students of M.Sc. from St. John's College, Agra on Nov. 14, 2014 at Research Centre, Agra.
- Exposure visit of 150 students from Ram Narayan Memorial Sr. Secondary School, Israna, Panipat, Haryana on November 17, 2014 at Research Centre, Agra.
- Institutional Training on “Soil and Water Conservation” for M. Tech students from TNAU, Coimbatore from November 20.- December 12, 2014 at Research Centre, Udhagamandalam.
- Participation in AgroTech-2014 organized by Confederation of Indian Industries (CII), Chandigarh from November 22-25, 2014 by Research Centre, Chandigarh.
- Training-cum-Exposure visit for Krishak Dal Members, sponsored by Dy. Director Horticulture, District Ratlam on Nov. 25, 2014 and Baroli on Nov. 29, 2014 at Research Centre, Agra.
- Special Project for Officers Trainees of 111th batch Regular Training Programme from IIS&WC, Dehradun from November 23-26, 2014 at Research Centre, Chandigarh.
- Exposure Visit and lecture organized for 25 participants of Winter School conducted by ICAR-DRMR, Bharatpur on November 26, 2014 at Research Centre, Agra.
- Short Courses (3 nos.) on “Soil and Water Conservation and Watershed Management” Sponsored by Odisha Government by HRD&SS Division, Dehradun.
- Exposure visit of 20 farmers of Attal village to Anand Agricultural University, Amul Dairy, CSWCRTI Research Centre, and Gambhira Society from December 3-9, 2014.
- Training-cum-Exposure Visit of 58 students of Sh. Megh Singh Singh College, Abidgarh, Aligarh on Dec. 5, 2014 at RC, Agra.
- Training Programme on '*Jaivik Kheti*' (Organic Farming) organized from December 18-20, 2014 at Research Centre, Kota.
- Training Programme on “Soil and Water Conservation Technologies” for progressive farmers of District Buxer, Bihar from December 22 - 28, 2014 at Research Centre, Kota.
- Training programme on “Skill Development (2 nos.) for 'Community Level Workers and Secretaries on Land and Water Management under IWMP' sponsored by OWDM, Bhubaneswar, Govt. of Odisha during Dec. 22-26, 2014 and January 12-16, 2015.
- Short Courses on “Advanced Engineering Measures for Drainage Line Treatment” sponsored by PCCF, Uttarakhand from December 15-22, 2014 by HRD&SS Division, Dehradun.
- Hindi Workshop on Dec. 27, 2014 at Research Centre, Udhagamandalam.
- Field Day on “Irrigation and Green Water Conservation Techniques” for the farmers on January 19, 2015 at Research Centre, Vasad.
- Training program on “Green Water Use Techniques for Various Crops in Panchmahal district” organized on Jan. 24, 2015 at ICAR-KVK Vejalpur, Godhra, Panchmahal District in collaboration with KVK by Research Centre, Vasad.
- Field Engineering Training on Watershed sponsored by Central Academy for State Forest Service, Coimbatore, Gol from January 27 to February 6, 2015 at Research Centre Udhagamandalam.
- Exposure Visit and lecture for *Krishak Dal* Members from Project Directorate, ATMA, Ajmer on Jan. 31, 2015 at RC, Agra.
- Exposure Visit and lecture for participants of “International Training Programme for Afghan Agriculture” from ICAR-IASRI, New Delhi January 31, 2015 at Research Centre, Agra.
- Summer Practical Training in “Soil and Water Conservation & Watershed Management” for B.Tech. (Agril. Engg.) students from SKUAST, Kashmir from Feb. 2-13, 2015 at RC, Chandigarh.
- Exposure Visit and Training for 08 participants of training programme held at RVSKVV, Gwalior on Feb. 7, 2015 at RC, Agra.
- Exposure Visit for team of Officials and President of Watershed Committee from Dy. Director of Agriculture, DWDA, Madurai, Tamil Nadu on Feb. 11, 2015 at Research Centre, Agra.
- Training on Integrated Watershed Management to PRI members of DWDA, Hamirpur from Feb. 16-20, 2015 at RC, Chandigarh.
- Skill Development Training for two groups in Vejalpura and Nanrampura village of Kapadvanj Taluka Kheda district Gujarat on February 19, 2015 by Research Centre, Vasad.
- Cleanliness drive organized at IVLP village Pasauli, Langha, Dehradun on February 24, 2015 by HRD&SS Division, Dehradun.
- Research Centre, Agra participated in 21st *Sarson Vigyan Mela* and Exhibition organized by DRMR, Bharatpur from Feb. 24-26, 2015.
- HRD&SS Division, Dehradun participated in Agriculture Exhibition organized during 9th Uttarakhand Science & Technology Congress, at Jhajra, Dehradun from February 26-28, 2015.
- Farm Innovators Day organized on February 28, 2015, at Research Centre, Chandigarh, Udhagamandalam and Vasad.
- Research Centre, Udhagamandalam participated in National Science Day Exhibition at Radio Astronomy Centre, Udhagamandalam, Tamil Nadu on Feb. 28, 2015.
- Field day and Training program on “Green Water Use Techniques for Various Crops was organized on March 12, 2015 at, RC, Vasad.
- Farm Innovators Day organized on March 13, 2015 at Research Centre, Koraput & on March 14, 2015 at Research Centre, Kota.
- Display of S&WC Technologies at *Resham Krishi Mela-2015*, Sahaspur, Dehradun on March 15, 2015 by HRD&SS Division, Dehradun.
- RAC meeting was conducted during March 18-19, 2015 at Research Centre, Udhagamandalam.
- 2 Nos. of Summer Practical Training in Soil and Water Conservation & Watershed Management was provided for 26 B. Tech Students at Research Centre Bellary.

- "World Water Day" on March 22, 2015 at IISWC, Dehradun.
- Trainings (3 nos.) on "Integrated Watershed Management" sponsored by Ram Ganga Command, DoLWR at Res. Centre, Agra.
- Short Training Course on "Catchment Treatment Plan" organized for Field functionaries of Forest Department, Alaknanda, Chamoli by HRD&SS Division, Dehradun.
- Training-cum-Exposure Visit (3 nos.) to Officers Trainee from ICAR-IGFRI, Jhansi U.P at Research Centre, Datia.
- Training-cum-Exposure Visit (4 nos.) to Women Farmers from Department of Farmers Welfare and Agriculture Development under MAPWA Scheme Block Pohari Distt Shivpuri (MP) & 7 visits of Women Farmers from Dy. Project Director ATMA Distt-Shivpuri (MP) at Research Centre, Datia.
- Training-cum-Exposure Visit (4 nos.) to Women Farmers from State Department of Horticulture at Research Centre, Datia.

WORKSHOPS/MEETINGS/TRAININGS ATTENDED

- Training programme on "Conservation Agriculture Developing Resilient System" organized by CSSRI/CIMMYT held from September 27-October 4, 2014 at Karnal: Er. S. Patra.
- Certificate Course on "Soil and Water Conservation and Integrated Watershed Management" conducted by ICAR- IISWC from Oct. 8, 2014 - Feb. 7, 2015 at Dehradun: Mr(s). Manish Kumar, Mukesh Kumar Meena and Er. (Mrs.) Monalisha Pramanik.
- Selection Committee Meeting as DG's Nominee on October 8-10, 2014 at N. Delhi: Dr. P.K. Mishra.
- Progress review meeting of consultancy project on Ravine reclamation from Oct. 9-11, 2014 at Res. Centre, Kota: Dr. R.K. Singh.
- Sensitization course on "Forest, Wild life and Environmental Conservation" from Oct. 9-11, 2014 at FRI, Dehradun: Dr. J.P. Singh.
- Workshops on ravine consultancy from October 9-11, 2014 at Vasad: Dr(s) R.S. Kurothe, V.C. Pande, B.K. Rao and Gopal Kumar.
- Agriculture Research Coordination Committee meeting on October 15, 2014 at CAD, Kota: Dr. R.K. Singh and H.R. Meena.
- Interaction meeting with the Union Minister of Agriculture, GoI on October 15, 2014 at CAZRI, Jodhpur: Dr. Kuldeep Kumar.
- International Seminar on Geo-synthetics India 2014 and Workshop on "Design of Geo-synthetic Barriers" from October 15- 17, 2014 at New Delhi: Er. S.K. Sharma.
- *Krishi Vigyan Mela* on October 17 and 19, 2014 organized by ATMA, Datia: Dr. Om Prakash.
- 23rd ICAR Regional committee No.VII meeting from October 17- 18, 2014 at IGKV, Raipur (Chhattisgarh): Dr. S.P. Tiwari.
- Brainstorming session on "Non-technical Constraints Impeding the Upscaling of Watershed Programmes in Rainfed Areas and a Way Forward" on Oct. 20, 2014 at ICAR-CRIDA, Hyderabad: Dr. H. Biswas.
- ICAR-SAU-State Department Exhibition from October 21-22, 2014 at CRRI, Cuttack: Sh. G.B. Naik.
- ICAR-SAU-State Department Interface Meeting during October 21-22, 2014 at CRRI, Cuttack: Dr. D.C. Sahoo.
- Training on "Sustainable Development and Management of Ground Water Resources" on October 27, 2014 at Chandigarh as Chief Guest: Dr. A.K. Tiwari.
- Project Technical Cell meeting called by the Commissioner & Project Director, KWDP-II (Sujala III), Watershed Development Deptt., Govt. of Karnataka on Oct. 28, 2014 at Bangalore: Dr(s). A. Raizada and H. Biswas.
- Workshop on "Open Access to Agricultural Knowledge for Inclusive Growth and Development (In Partnership with GFAR-FAO)" from Oct. 29-30, 2014 at NAARM, Hyderabad: Er. S.S. Shrimali and Ms. Chayan Jana.

- National Symposium on "Management Options for Enhancing Farm Productivity and Livelihood Security under Changing Climate" from Oct. 29-31, 2014 at OAUT, Bhubneswar: Dr. A.K. Tiwari.
- Training Programme on Oilseeds for Farmers and staff of District Agriculture Department, on Oct. 30, 2014 at Datia: Dr. Om Prakash.
- District level Farmers Training Programme organized under National Oilseed Mission by State Agriculture. Department on October 30, 2014 at Datia: Dr (s). S.P. Tiwari and Dev Narayan.
- 53rd Foundation Day Programme of ICAR-IGFRI on November 1, 2014 at Jhansi: Dr. S.P. Tiwari.
- Workshop on Water Supply and Sanitation organized by Water Aid and Himmothan on Nov. 5, 2014 at Dehradun: Dr. P.K. Mishra.
- Wild Life Conservation Week Celebration organized by DFO, Koraput on November 6, 2014 at Koraput: Dr. B.S. Naik.
- Training programme on "Use of Improved Information and Communication Technology in Agril. Extension" organized by MANAGE, Hyderabad from November 10-13, 2014 at IISWC, Dehradun: Mrs Chayna Jana, and Er. Amit Chauhan.
- Training on "Analysis of Experimental Data" during Nov. 10-15, 2014 at NAARM, Hyderabad: Dr(s). D.C. Sahoo and Rajeev Ranjan.
- 10th Indian Fisheries and Aquaculture Forum organized by the NBFGR (ICAR), from November 10-16, 2014 at Lucknow: Dr. M. Muruganandam, Sh. Rakesh Kumar and Sh. Surendra Kumar.
- Meeting with DG, DDG and MoS on the development of Muzaffarnagar Water Resource Development Plan on Nov. 11, 2014: Dr. P.K. Mishra.
- Scientific Advisory Committee (SAC) meeting of KVK as Chairman on November 13, 2014 at Datia: Dr. S.P. Tiwari.
- XXIII meeting of the ICAR Regional Committee from November 14-15, 2014 at PAU, Ludhiana: Dr. A.K. Tiwari.
- General Management Programme for Scientists at Administrative Staff College of India from Nov. 17-28, 2014 at Hyderabad: Dr. H. Biswas.
- National workshop on "Assessing Scale Impacts of Watershed Development: An Integrated Approach" from Nov. 17-19, 2014 at NASC Complex, New Delhi: Dr(s). N.K. Sharma and M. Madhu.
- Short course on "Ecosystem Services of Agroforestry System" from Nov. 17-21, 2014 at ICRISAT, Hyderabad: Dr(s). B.N. Ghosh and Rajkumar.
- National Seminar on "Agricultural Diversification for Sustainable Livelihood and Environmental Security" from November 18-20, 2014 at PAU Ludhiana: Dr. N.K. Sharma and S.L. Patil.
- Workshop on Construction and Desilting of Check Dams / Water Harvesting Structures from November 20-21, 2014 at New Delhi: Dr. V.K. Bhatt and Er. S. Patra.
- AgroTech-2014, organized by Confederation of Indian Industries (CII) during November 22-25, 2014 at Chandigarh: Dr. Ram Prasad.
- National Symposium on "Management Options for Enhancing Farm Productivity and Livelihood Security under Changing Climate" at Bhubaneswar on November 29, 2014: Dr. P.K. Mishra.
- Training on "Management Development Programme on Leadership Development" from Dec. 1-2, 2014 at NAARM, Hyderabad: Dr. M. Madhu.
- Training on "Geo-Informatics Mapping in Agroforestry" from Dec. 1-5, 2014 organized by ICRAF at Nairobi, Kenya: Dr. J.M.S. Tomar.
- Technical Advisory Committee meeting organized by Directorate of Watershed Management and Soil Conservation, Govt. of Rajasthan held on Dec. 8 and 21, 2014 at Pant Krishi Bhavan, Jaipur: Dr. Shakir Ali.
- The International Tropical Ecology Congress 2014 from December 10-12, 2014 at JNU, New Delhi: Dr. A. Raizada.
- RRAC-2014 meeting of Regional Sericulture Research Station, Central Silk Board on Dec. 12, 2014 at Koraput, Odisha: Dr(s). M. Madhu and P.P. Adhikary.

- Kissan Ghosties and Project meeting with MoS (Agril) and DDG (NRM) from December 12-14 at Muzafarnagar: Dr. P.K. Mishra.
- Workshop on Stakeholder consultation on the Farming System for Nutrition (FSN) under LANSa on December 20, 2014 at MSSRF, Jeypore: Dr. M. Madhu.
- Academic Council meeting of IARI on December 20, 2014 at IARI, N. Delhi: Dr. P.K. Mishra.
- Pre ITRA-Agriculture Project Meeting at CRIDA and NIRD on December 22-23, 2014, Hyderabad: Dr. P.K. Mishra.
- District Science Fair as Chief Guest on December 23, 2014 organized by District Education Officer, Datia: Dr. S.P. Tiwari.
- ICAR- Training cum Awareness Programme on “Protection of Plant Variety and Farmer’s Rights” on December 23, 2014 organized by KVK Datia and RVSKVV Gwalior: Dr. S.P. Tiwari.
- Meeting with DDG (NRM) on Review of staff for retention in service on December 26, 2014 at N. Delhi: Dr. P.K. Mishra.
- Parliamentary Committee meeting on Hindi at New Delhi for review of Hindi work from December 31, 2014-January 1, 2015 of Research Centre, Ooty: Dr. P.K. Mishra.
- Meeting for Planning of Ravine Development through MNREGA in Vadodara, on Jan. 1, 2015 at Vadodara, Gujarat: Dr Gopal Kumar.
- Training on “National Networking Workshop on Soil and Water” from January 4-7, 2015 organized by IIT Kharagpur and University of Sydney, Australia: Dr Gopal Kumar.
- Career Advancement Committee meeting for Scientists from January 5-7, 2015 at CAZRI, Jodhpur: Dr. R.K. Singh.
- Attended the IRTA-Water Annual Project Review meeting on January 10, 2015 at Bangalore: Dr. P.K. Mishra.
- Training programme on “Advances in Land Resource Inventory for Enhancing Productivity through Agro-Technology Transfer” from Jan.7-27, 2015 conducted by NBSS&LUP, Kolkata: Dr. P.P. Adhikary.
- Training programme on “Hands on Advanced Instruments of Water Quality Testing” from January 12-16, 2015 at NIH, Roorkee: Dr. U.K. Maurya and Mr. Anand Gupta.
- Workshop on “Our water-Our life programme” on January 17, 2015 organized by MoWR, New Delhi: Dr. S.P. Tiwari.
- Workshop on “Hamara Jal Hamara Jeevan” under the theme “Water Management for Sustainable Development” on Jan. 17, 2015 organized by District Magistrate, Uttarakashi (UK): Er. S. Patra.
- Farmers training on “Improved Paddy Cultivation” on January 29, 2015 organized by RRTTSS, Jeypore at Deola, Kunduli block: Dr(s). M. Madhu and Ch. Jyotiprava Dash.
- *Krishi mela* on January 21, 2015 at ARS and KVK Hagari: Dr(s).: A. Raizada, S.L. Patil, H. Biswas and M.N. Ramesha.
- Training programme on “Land resources management under changing climate condition with special reference to degraded lands” from Jan.22-Feb.12, 2015 at RVSKVV, Gwalior: Dr. Rajeev Ranjan.
- Meeting regarding the Indo-Austria Project held on January 27, 2015 at NRM Division, ICAR, N. Delhi: Er. S. Patra.
- Workshop on “Role of land use and land cover mapping” organized by UK State Remote sensing on Dec. 30, 2015 at D.Dun: Dr. P.K. Mishra.
- Agricultural Science Congress and the exhibition on February 3-4, 2015 at NDRI, Karnal: Dr. P.K. Mishra
- Review workshop of NMSHE project on February 5, 2015 at N. Delhi: Dr. P.K. Mishra.
- International conference “Natural Resources Management for Food Security and Rural Livelihood” from Feb. 10-13, 2015 at New Delhi: Dr(s). P.K. Mishra, S.P. Tiwari, O.P. Chaturvedi, N.K. Sharma, A. Raizada, M. Madhu, B.N. Ghosh, D. Mandal, U.K. Maurya, Lekh

- Chand, N.M. Alam, H. Mehta, Shakir Ali, Dev Narayan, Om Prakash, A.C. Rathore, M. Muruganandam, J. Jayprakash, C. Jana, Sharmistha Pal, Anand Kr. Gupta.
- National Seminar on Holistic Development of Agroforestry: Potential and Policy Issue from Feb.13-14, 2015 at GBPUAT, Pantnagar: Dr. R. Kaushal.
- Eastern Zone Agricultural Fair from February 19-21, 2015 organized by CPRS, Patna, Bihar: Sh. G.B Naik and G.W. Barla.
- 18th Meeting of the Society of GBPIHED as nominee of DG, ICAR on March 2, 2015: Dr. P.K. Mishra.
- National Conference on “Governance of Traditional Knowledge and Contemporary Innovations” organized by MHRD-IPR Chair, Department of Management Studies, IIT-Roorkee from March 13-14, 2015: Dr. M. Muruganandam.
- RAC-2015 meeting of IISWC, Dehradun from March 18-19, 2015 at Research Centre, Udhagamandalam: Dr(s). P.K. Mishra, O.P. Chaturvedi, N.K. Sharma, Lakhan Singh, P.R. Ojasvi, P. Dogra, Ambrish Kumar, B. Bihari, D.R. Sena and R. Kaushal.
- Scientific Advisory Committee meeting of KVK, Borkheda of Kota District on March 18, 2015: Dr. Ashok Kumar.
- Scientific Advisory Committee meeting of KVK, Anta of Baran District on March 19, 2015: Dr. Ashok Kumar.
- Workshop on “Ecosystem Service and Financing Mechanism for Natural Resource Management” on March 23, 2015 organized by USERC in collaboration with GBPIHED, Almora and Graphic Era University: Dr. J.M.S. Tomar.

PERSONALIA

Joining/Transfers

- Dr. Lakhan Singh, Pr. Scientist joined as Head (HRD&SS) at Dehradun.
- Dr. P.R. Bhatnagar, Pr. Scientist (Ag. Engg.) joined Head RC, Vasad.
- Dr. D.V. Singh, Pr. Scientist (Soils), joined SS&A Division.
- Mr. Fakir Chand UDC, RC, Datia transferred to HQ Dehradun.
- Sh. V.K. Dwivedi, ACTO joined D.Dun on transfer from RC Datia.
- Sh. Pramod Kumar joined Res. Farm Selaqui as Security Officer from CAZRI, Jotpur.

Promotions

- Dr. R.P. Yadav, Pr. Scientist (Soils) joined NBSS&LUP Regional Centre, New Delhi as Head of the Centre.
- Mr. Mohd. Irfan, LDC, RC, Kota promoted to Junior Account Officer.
- Sh. Dinesh Goyal RC, Agra promoted to Assistant.
- Sh. A.S. Bimli RC, Agra promoted to AAO.
- Shri R. Rajamani, SSS promoted to IInd ACP.
- Shri M. Viswanathan, SSS promoted to LDC.

Retirements

- Dehradun:** Sh. D.P. Gupta, ACTO; Sh. Puran Singh, SSS; Sh. Harpal Singh, SSS; Sh. Risapal Singh, SSS; Sh. Deepak Singh, SSS.
- Agra:** Dr. S.C. Saxena, CTO.
- Bellary:** Sh. K. Channabasappa, T.O.; Sh. S.A.M.U. Maqbool, T.O. (V.D.); Sh. B. Jagadeesh, SSS.
- Chandigarh:** Sh. R.S. Nain, CTO, Sh. Sahibdin, SSS.
- Udhagamandalam:** Sh. M. Mahalingam, Driver (T-2), Smt. D. Sulachana, Assistant; Sh. T. Govindan, SSS.

Obituaries

Sh. Kalam Singh; SSS (Dehradun), Sh. Manohar Singh, SSS (Agra).

IISWC express heartfelt condolences to the bereaved family.



TECHNOLOGY

Techniques for Establishment of Tea on Terrace Riser in the Nilgiris

Inward sloping bench terraces are the recommended soil and water conservation in the Nilgiris for arable lands in the slope class of 8-33%. The risers of the bench terraces are to be provided with a slope of 0.5:1 or 1:1. But the farmers tend to make the risers as vertical as possible to accommodate more crop rows and to clean the weeds on the risers. Also, at many places, proper maintenance of terraces is not in vogue. To overcome this problem, IISWC Research Centre, Udhagamandalam has conducted field experiments and has come out with the recommendation of raising tea on terrace risers for riser stabilization, crop diversification, resource conservation and higher production from annual cropped areas in the Nilgiris.

The vegetatively propagated (VP) clones of the promising varieties namely UPASI-3, UPASI-15, CR-6017 and B6/61 should be used as planting material. Twelve months old seedlings are preferred for planting and the suitable time of planting is during June/July or September/October. The risers are to be given proper slope (0.5:1 or 1:1) by easing out the risers with spade. If the slopes are already provided, only weeds are to be removed with spade without much



disturbance of the soil. Generally, tea can be planted in two or three parallel rows on the risers leaving a spacing of 30 cm at the top and bottom of the riser. Number of seedlings required for a particular terraced field:

$$= \frac{\text{Total length of the riser (m)}}{0.75 \text{ m (i.e. row to row spacing)}} \times \text{No. of rows (2 or 3)}$$

The rows can be marked on the riser at a spacing of 0.75 m and on each row peg marks for planting are to be made at a spacing of 0.75 m. Crow bar holes of 20 cm dia. and 20 cm depth are to be made vertical to the face of the riser, starting from top to bottom, on peg marks already made. FYM and fertilizer are to be applied in the hole. From the experiment, it was observed that for better establishment of tea on riser, tea should be planted with bigger hole (20 cm diameter) with FYM and fertilizer application in the hole. Metarhizium should be applied @ 10 gm per pit to control root grub at the time of planting. Tea seedlings are planted in the pits taken on the riser. Planting should commence from bottom to top to avoid filling the bottom pit with soil displaced from the upper side.

If gaps are there, gap filling is to be done during the monsoon period. During continuous dry spells, protective irrigation should be given with jerry (traditional method) or sub soil water injector or drip irrigation (one lateral per two rows of tea plants) may be installed for better survival rate. Fertilizer application should be done only up to 3 years and the dose is similar to regular tea plantation. During frost (up to two years) young seedlings are to be provided with frost cover. Other standard practices which are commonly recommended for regular tea plantations like tipping and pruning are to be carried out.

Likely cost: ₹ 50,000 ha⁻¹ till the establishment of tea (initial 2 years)

Output: An average yield of 5.84 yr⁻¹ of green tea leaves from the risers of 1 ha terraced land could be obtained. Average annual net income that could be obtained due to cultivation of tea on terrace riser from 1 ha of terraced land is ₹ 22,000 yr⁻¹. The income from risers is an additional one to that from vegetable crops grown on terraces.

Other benefits

- Employment generation
- Additional area available for cultivation
- Elimination of rodent problem
- Risk minimization due to crop diversification
- Effective utilization of leached nutrients from the bench area
- Effective utilization of sub surface moisture
- Stabilization of terrace riser
- Effective utilization of family labour

Area of Application: This technology is suitable for hilly regions wherever tea is being grown and bench terracing is required for annual crop cultivation. It is well suited for small and marginal farmers.

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