

Two-day Conference on 'Best Practices under Watershed Development' by SLNA Watershed, Directorate of Rural Development, H.P. at SIRD-PRTI Mashobra (10th-11th May 2023)



In view of celebrating the 75 years of Independence 'Azadi Ka Amrit Sarovar', State Level Nodal Agency- Watershed (Himachal Pradesh) under Directorate of Rural Development, Shimla, H.P. organized a state level 2-day workshop to highlight and focus the 'Best Practices under Watershed Development' on 10th and 11th May, 2023 at SIRD-PRTI, Craignano Mashobra, Shimla. The aim of this workshop was to broaden the horizons of thinking for the Project Implementing Agencies (Block Development Officers and Deputy Directors-cum- Project Officers) and the Panchayati Raj Institutions (PRIs) involved in the implementation and execution of Watershed Development Projects.

The sessions and panellists for the two-day conference on 'Best Practices under Watershed Development' were:

Session	Panellists	Topics of Discussion
Day 1		
1	Sh. Shyamsunder Paliwal (Padma Shri Awardee, Piplantri, Rajasthan)	Awareness towards benefits of Watershed Development programs and importance of community involvement
2	Dr. Jagdish Purohit (GIZ India) Dr. Vaneet Jishtu, Scientist-E (Himalayan Foreign Research Institute, Shimla)	Need of Water Conservation, Geo-spatial planning for Watershed Projects, Natural Resource Management- Success Stories

3	Sh. Nek Ram Sharma (Padma Shri Awardee, Mandi, Himachal Pradesh)	Importance of Organic and Natural Farming, Millet's cultivation, concept of Crop rotation and diversification (Nau-Anaj)
4	Sh. Shyamsunder Paliwal, Sh. Nek Ram Sharma, Dr. Jagdish Purohit, Dr. Vaneet Jishtu, Dr. Bhawna, Kalyani Gupta, Dr. Pravesh Sharma	Interaction with PRIs, Village Organizations, Self Help Group members about importance of GIS based planning for projects, challenges and solutions to issues faced during the implementation of projects.
Day 2		
5	Sh. Debashish Sen, Dr. S.K. Bartarya, Sh. Rajesh Kumar (Peoples' Science Institute, Dehradun) Sh. Joginder S Chauhan, Chief Engineer cum Director, Jal Shakti Vibhag, Shimla	Concept of Springshed Development: Its Importance, Significance and Challenges in Implementation; Importance of Vegetative Engineering Structures in maintaining Himalayan Ecosystem; Role of Geology in Springshed Treatment
6	Dr. Nardev Thakur, Directorate of Horticulture, Shimla Dr. Ravinder Singh Jasrotia, Department of Agriculture, Himachal Pradesh Sh. Pratyaya Jagannath (National Livelihood Person, Hyderabad) Dr. Vivek Pathania (GM, NABARD), Himachal Pradesh	Livelihood (Farm and Non-Farm), Concept of Living Income, Farmer Producers Organization, Production System in Watershed Management
7	Smt. Mamta Thakur (Mushroom Cultivator from Solan, Himachal Pradesh)	Benefits of organizing women into Self Help Groups, Importance of schemes like NRLM, WDC-PMKSY, MGNREGS and other rural level schemes,
	Remarks by Sh. Kishori Lal, Hon'ble Chief Parliamentary Secretary (Rural Development), Govt. of Himachal Pradesh	
	Launch of Agri-Nutri Kits to Village Organization and Self-Help Group members under the Livelihood component by Chief Guest Sh. Anirudh Singh, Hon'ble RD & PR Minister, Govt. of Himachal Pradesh	
	Closing address by the Hon'ble State Minister for Rural Development and Panchayati Raj	



The first day of the programme was headed by Ms. Nisha Singh, Principal Advisor (Training & Foreign Assignment) to the Govt. of Himachal Pradesh. The forenoon sessions began with Dr. Pravesh Sharma introducing the Watershed Development Programme- Pradhan Mantri Krishi Sinchayi Yojana, being implemented in the 26 development blocks of the state of Himachal Pradesh.

Dr. Bhawna, Joint Director (RD), on behalf of the department, welcomed all the dignitaries, resource persons for the workshop, participating Project Officers and Block Development Officers, Panchayat Pradhans and Village Organisation/ Self Help Group Mahila representatives.

The inaugural address by Smt. Nisha Singh (Principal Advisor, T&FA, Govt. of Himachal Pradesh) included a special welcome to the two Padma Shri Awardees, Sh. Shyamsunder Paliwal (Piplantri, Rajasthan) and Sh. Nek Ram Sharma (Karsog, Himachal Pradesh) and other distinguished speakers. She highlighted the importance of Watershed development schemes being implemented by the Government, which can directly benefit the vulnerable communities of the society. She also emphasized on the participation of the community for successful implementation of the schemes and the role training and workshops play in increasing their knowledge and capacity so that they become self-reliant and independent.

The first keynote speaker Sh. Shyamsunder Paliwal, known for his distinguished social work in the field of Eco-feminism in Piplantri village of Rajsamand district in Rajasthan addressed the importance of schemes like Watershed Management and MGNREGS, which help in increasing the area under assured irrigation. He said that these schemes are the stepping stones on which the success of the 'Piplantri' project rose to such a success.



He highlighted how the mining of Marble had deteriorated the ground water quality and quantity in Piplantri and the surrounding areas as well. The extraction of ground water for mining purposes, the unlawful and untreated discharge of the waste water into the sources were the main reasons for depletion of natural water sources.

The strongest efforts from the village community and elected representatives gave initiation to formulation of village level regulations towards conservation of water through the watershed development programs and MGNREGS, which led to increased water content in the area. A panchayat level initiative of increasing the plantation cover to honour the birth of a girl child has resulted in transforming the situation of area from water scarce to water sufficient. The role of administrative heads, scheme initiatives and awards from state and central governments also played a key role in changing the livelihoods of the people of Piplantri.

The initiatives have impacted the lives of the public, as each household is now able to generate livelihood opportunities through Piplantri project. The village is now home to numerous new plantations of various fruits like Dragon Fruit, and numerous facilities where in tourists can spend days working on the farms and spend time through these areas. Multiple training sessions have been organized by various states for their PRIs, so as to influence them towards models of these kind. This model has helped the panchayat to receive more funds from state and centrally sponsored schemes to educate and take care of the children from the schools and anganwadis built through this funding.

This single initiative has resulted in a cumulative effect of uplifting the status of the village throughout the nation.

The first technical session of the day introduced the concepts of Natural Resource Management (Soil and Water, NRM), Importance of technologies like GIS and Remote Sensing in planning and monitoring of developmental projects, Impact of NRM activities and impact of changing climate on Himalayan eco-system. The session was headed by Dr. Jagdish Purohit from GIZ India and Dr. Vaneet Jishtu from Himalayan Forest Research Institute Shimla.

Dr. Vaneet Jishtu presented all the participants with details of managing the most crucial resource of Himalayan Ecosystem i.e., forests. He emphasized on the importance of managing the forests with utmost care and value, so as to meet the demand of the communities dependent on them for livelihood and sustenance. The effects of changing climate, like rise in temperature, which have led to frequent forest fires; sudden and intense rainfall causing flash floods and other reason of affecting forest ecosystem. The anthropogenic factors have also impacted the Himalayan ecosystem with rampant horticulture and agricultural encroachments. The impact of these catastrophic changes can be seen on the economy of the state of Himachal Pradesh as the main source of earning through tourism is getting affected.



The speaker highlighted and emphasized on convergence of all line departments and research institutes to plan projects and other conservational activities collectively after careful inspection of the characteristics of the area in terms of chemical and biological composition of the soil, native plant and tree species, land use pattern, anthropogenic factors and others.

The second technical session was delivered by Dr. Jagdish Purohit, highlighting the importance of Geo-spatial technologies in planning and monitoring the developmental projects. He also briefed the participants about the different openly available geo-portals developed and operated by Govt. of India like BhUNaksha, Bhuvan NRSC, India-WRIS etc.

Each of these portals can be helpful in obtaining data of an area related to Rainfall, Temperature, Humidity, Soil Moisture, Soil health, Livestock census etc, which help in determining the prevailing conditions and help in planning the remedial measures for conservation of Natural resources and sustenance of livelihood.

The session included discussions on the Water Security and Climate Adaptation in Rural India (WASCA-II) project launched by the Govt. of India, in order to strengthen the rural infrastructure, build a saturated and scientific panchayat level development plan. The importance of proper hydrological planning after careful assessment of Water budgeting was also discussed.



The second keynote speech was delivered by Sh. Nek Ram Sharma (Padma Shri Awardee from Mandi district of Himachal Pradesh) highlighting the importance of natural farming and crop diversification through Millets and other crops. He discussed the problems like lack of fodder, over grazing, floods etc. which were prevalent in the village earlier.

The villagers decided to gather the elderly and formulate a plan to revive the forest area and cultivate mixed variety of grains. The transition towards organic and natural farming significantly improved the quality of soil, which helped in rejuvenation of lost flora and accelerated the growth of variety of crops. The village community also sought help from the government schemes which granted a sum of Rs 10,000 to women-run Self Help Groups to further initiate this concept in their own farms and advise others to adopt the same.

He also iterated the benefits of eating millets towards an individual's health. The millets help in minimising the heart related issues and also strengthens the immunity towards many diseases. He also informed that the naturally made insecticides and fertilizers have a long-lasting effect, and do not damage the soil

characteristics and quality when applied. He encouraged the elected representatives and the SHG/VO members to adopt the technique of Natural Farming and Millets cultivation, so that the diversity in agriculture and forestry can be achieved. He also encouraged the PRIs to take maximum benefit of the Water conservation schemes to increase the area under irrigation.

The last session of the day comprised of the open discussion between the panellists and the participants in the training. The PRIs enquired about how they could implement the watershed development concept and natural farming in an integrated manner. This was responded by the experts by stating that watershed development projects ensure the reduction of flow velocity of running water and maximise the seepage of water to increase the soil moisture content. This helps in improving the diversification of crops and reduces the need of fertilisers as the quality of soil improves naturally.

Sh. Gurcharan Singh (Pradhan- Madanpur, Block- Una) informed the panellists of some of the key achievements in his panchayat like, creation of Wells for Natural irrigation, construction of HDP Pipelines instead of Kulhs, to prevent the contamination of natural water. The DD-cum-Project Officer, Mandi enquired about the application of GIS technologies and policies formulation towards implementation of water conservation activities at panchayat levels.

Replying to these queries, Dr. Jagdish Purohit responded that Govt. of India has devised and set up National level portals like Bhuvan NRSC since 2006, Bhuvan Panchayat from 2011, Yuktdhara Bhuvan, India-WRIS and others which are based on the principles of Geo-spatial analysis and are used as Space Based Information Support systems for Decentralized Planning.

The second day continued with technical sessions from three resource persons Sh. Debashish Sen, Sh. Rajesh Kumar and Dr. S.K. Bhartarya from Peoples' Science Institute and Wadia Institute of Geology, Dehradun. The institute presented a documentary on the successful implementation of Springshed Development activities taken up in the states of Sikkim, Uttarakhand and some parts of District Sirmour, Himachal Pradesh.





Sh. Debashish Sen presented a small presentation on introduction of Springshed Management which included types of Springs: Depression, Contact, Fracture and Karsh. He also explained the existence of each type of Spring and the factors which influence their flow characteristics. Focusing on the state of Himachal Pradesh, he informed that on surveying some samples of the springs located in 4 districts of the state, only 1/4th springs passed all parameters of water quality under permissible limits. He iterated the significance of maintaining the spring eco-system for the sustenance of families and economies dependent on them in the Himalayan states of India. Sharing their experience of treating Springs for the past 2 decades, he stated that effective treatment of Spring relies on the identification of its recharge zone. The concept of Watershed treatment from Ridge-to-Valley may not completely recharge the spring, as they may fall in the neighbouring watersheds as well. The approach of Springshed treatment focuses on vegetative structures which minimize the use of concrete and other materials which restrict the flow of water through the sub-surface. This Valley-to-Valley approach helps in maintaining the perennial flow of water through springs in the lower reaches of recharge zones.

The speaker also explained the importance of maintaining a Spring Inventory, which includes the location of spring, water characteristics (quality and quantity parameters like flow discharge, pH, Total Dissolved solids etc.); recharge zone characteristics like types of interventions, plant species, soil characteristics etc;

total number of dependent households and their categorisation based on gender, income etc. He also explained the anthropogenic sources of contamination of natural water sources, especially through faecal coliform contamination.

Sharing the success stories of treating Springsheds through the 8-step methods of treatment, he said that the springs in Thana Kashoga area of Sirmour have been rejuvenated with improved discharge and quality. The importance of each of the 8-step methodology becomes very critical in anticipating and overcoming the challenges in treatment. The collection of data, water budgeting, Grey-water management, connecting the sources of water with income, convergence of various schemes are the majority challenges that occur throughout the process of springshed treatment.

He recommended that documentation and monitoring of Springs, training of para-workers at panchayat level for data collection, community incentivising, collaboration through GPDP initiative, climate change impact assessment, and capacity building should be worked upon throughout the treatment process.



In the open discussion after the session, DD-cum-Project Officers Hamirpur and Sirmour asked the significance of mapping Geo-physical characteristics and their representation of GIS softwares like Google Earth Pro or QGIS. Dr. S.K. Bhartarya responded to this query, stating that Geological characteristics of the underlying strata and its origin dominate in the understanding of amount of water that can be held in the underground layers. The geo-portals like Google Earth Pro and others help in projecting the manually collected data so as to analyse the treatment process further. This collection and survey must be done on a fine scale, as the recharge zones and spring locations can vary within a distance of few meters.

Sh. Joginder Chauhan (Chief Engineer-cum- Director, JSV, Shimla) presented a model for the Springbox (commonly known as Bawri) which can protect the water from contamination and other human interferences. He also explained that Jal Shakti Vibhag has been distributing water quality testing kits at

panchayat level, which can measure up to 8 parameters and help in monitoring the quality standards of a spring.



The BDO Lambagaon suggested to include Water guards engaged in supply of freshwater in measuring water quality and quantity measures suggested for springshed inventory. The resource person from JSV Shimla informed that water guards have already been engaged in collection of water samples from time to time, but their frequency and efficiency will be increased so as to compile a panchayat level inventory to be displayed as charts in Panchayat houses.

The second technical session of day 2 covered concepts of Livelihood (Farm and Non-Farm), Living Income, Farmer Producers Organization, Production System in Watershed Management. Dr. Nardev Thakur (Department of Horticulture, Shimla, H.P.) highlighted the various horticulture crops (like Avacado, Blueberries, Mangoes, Macadamian Nut, Kiwi Fruit, Dragon Fruit, Jamun etc.) apt for the conditions in Himachal Pradesh, which can be grown in order to generate profitable income. He also focussed on the conditions that are required for preparing the soil and the necessary irrigation requirements for a specific variety. The participants requested necessary hand-holding, information and requirements for specific crop types from the department of Horticulture at block and district levels.

Dr. Ravinder S Jasrotia (Directorate of Agriculture, Shimla) also emphasized on the importance of Natural Farming and traditional practices in agriculture. He also explained the benefits of preparing the seeds before sowing and importance of traditional methods of field treatments before and during the crop seasons.

Dr. Vivek Pathania (NABARD Shimla) mentioned the importance of grant-based projects like Watershed Development, as they help in ensuring irrigation facilities by creating water sources. He also emphasized on the importance of

capacity building and the involvement of the community for the success of any project. The protection of soil and nutrients becomes critical especially in areas where landslides are a common occurring. He pressed on supporting the community works instead of individual works and deposit of Watershed Development Funds towards the creation of an asset, so as to prolong the life of the structure with proper maintenance using that contributory fund.



Dr. Pathania also shared the importance of 'crop advisory' that is issued based on the newest technologies like sensors for assessing weather parameters, which can be placed in the farms at specific intervals. This can be combined with the contour, slope, erosion and other geographical data to assess the possible crop supporting factors and project them over fine scales. He also iterated that areas with multiple farmers growing a similar crop variety should indulge in formation of Producer Groups and Farmer Producer Organisation as they receive financial grant of Rs 5 lakh per FPO as seed money per FPO. Since FPOs consist of mostly small and marginal farmers, they get interest subvention on crop as well as allied activities under Kisan Credit Card. They also get interest subvention under Agri Infrastructure Fund.

The last keynote speech was delivered by Ms. Mamta Thakur, a VO Pradhan, from Kandaghat, Solan (H.P.), who was able to completely change her life after being trained under the livelihood schemes to organise a Self-Help Group for mushroom cultivation. This helped the women to expand the household business into a Mushroom farm and a number of other commodities like Pickle and Chutney to pay off the loans from the initial years.

The after-lunch session was headed by the Hon'ble Rural Development and Panchayati Raj Minister of Himachal Pradesh, Sh. Anirudh Singh; Sh. Kishori Lal, Chief Parliamentary Secretary (RD) and Ms. Nisha Singh, Principal Advisor (Training and Foreign Assignment) to Govt. of H.P. At the outset of the session, Dr. Bhawna (Joint Director, RD) welcomed the Chief Guest and introduced all the key note speakers and resource persons along with the participants to the guests. She also highlighted the key achievements of the project so far and the way forward which will focus on Springshed and Watershed Management.



The guests of the conference interacted with the elected representatives and VO/SHG members from the 26 project blocks under the Watershed Development Component of PMKSY 2.0. The VO and SHG members from Una, Lambagaon, and Solan shared their experience of completely turning their life after being benefitted from the initiatives of Watershed and Livelihood missions. This has given them the essential exposure and training towards raising the market for indigenous products and given support through irrigation from water sources created. VO/SHG members from Baijnath assured necessary actions towards springshed management and protection of natural water sources in and around their panchayat areas.



The elected representative raised queries of shortage of key staff at panchayat levels which impacts the implementation of all the schemes run through Gram Panchayats to which the chief guest replied with assurance of increasing the position of panchayat secretaries with an aim to neutralise the excessive burden on the panchayats in the state.

Sh. Shyamsunder Paliwal thanked all the dignitaries, resource persons and motivated the elected representatives towards better and sensitised implementation of the Watershed Development projects.



In his address to the participants and speakers, Sh. Kishori Lal highlighted the importance of being elected to represent the functional unit of Indian self-governing system. He highlighted that Pradhans and VO/SHG members must make it their objective to maximise the benefit that can be given to the vulnerable communities and marginal farmers. He thanked all the distinguished resource persons for sharing their knowledge in this two-day conference towards various components of Watershed Development.



As a part of the Livelihood component of WDC-PMKSY 2.0, the Chief Guest launched the state wide program of distributing the Agri-Nutri Garden kits to the SHG members. The kit includes tools for starting and maintaining a kitchen garden

at domestic level. This initiative will help in strengthening the marginal farmers towards growing millets on their own. Under the project, all the SHG members in the project panchayats of WDC-PMKSY 2.0 will be given the Agri-Nutri Garden kit to promote the concept of kitchen garden and millets production.



In the closing address, the hon'ble minister of state emphasized on the need of efficient implementation of Watershed Development activities, with a special focus on treatment of natural water sources and springsheds, which are the major sources of water for the villages in the Himalayan region of the country especially Himachal Pradesh. He also pressed on executing watershed conservation projects with highest level of quality and efficiency so that structures built and maintained can last for long durations and benefit the generations to come.



He also suggested all SHG and village level production units to obtain a registered license from Food Corporation of India, so as to authenticate their products at national levels. He assured that under the watershed development projects, Custom Hiring Centers will be established in every panchayat of the WDC-PMKSY 2.0 which will be operated by the local Village Organisation and help in lending tools and machines which are not easily available to the marginal farmers at minimal rent. The provision of 1 Processing Labelling and Packaging unit will also be given to the 26 project blocks (at block level) which will help in processing of local indigenous products derived from locally grown fruits and medicinal plants. This will also help in labelling and packaging the products with good and sustainable quality of materials.

The minister thanked all the participants and resource persons for showing immense interest in the two-day conference to highlight the 'Best practices under Watershed Development', and hoped that good success stories will come up at the completion of the project.

At the end, Ms. Kalyani Gupta (Project Director, SLNA-WDC PMKSY) thanked Sh. Anirudh Singh (Hon'ble RD&PR Minister, Govt. of H.P.), Sh. Kishori Lal (Chief Parliamentary Secretary for Rural Development, Govt. of H.P.), Ms. Nisha Singh (Principal Advisor for Training and Foreign Assignment to Govt. of H.P.), Sh. Shyamsunder Paliwal (Padma Shri Awardee, Piplantri, Rajasthan), Sh. Nek Ram Sharma (Padma Shri Awardee, Mandi, Himachal Pradesh), all the distinguished resource persons from Peoples' Science Institute Dehradun, NABARD Shimla, Jal Shakti Vibhag Shimla, GIZ India, Dept of Horticulture and Dept of Agriculture (H.P.) and other dignitaries, along with the Project Officers and Block Development Officers and all the VO/SHG members and elected representatives of project panchayats for facilitating and participating in the Two-day conference. She also thanked the team of Himachal Pradesh State Institute of Rural Development and Panchayati Raj Training Institute for the successful organisation of the conference.



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