Har Ghar Jal
Jal Jeevan Mission

Centre for Science and Environment

TRAINING ON LONG-TERM SUSTAINABILITY, SECURITY, RECHARGE AND MANAGEMENT OF DRINKING WATER SOURCES

Date: 22nd – 26th February, 2022

Mode of delivery for training programme: Offline/Residential at CSE's training institute Anil Agarwal Environment Training Institute

Participants: Middle Management Level from Jal Jeevan Mission

Duration of training programme: 5 days including a site visit

Objective: To train the participants to develop plans for sustaining the drinking water sources by protecting, recharging and managing the drinking water source

Outcome: The participants learn the concept of protection of drinking water sources so as to provide clean and continuous piped water supply to the village households

Day 1: 22 February, 2022			
Module 1 - Overview- the water sources for drinking purposes			
Time	**Topic**	**Outcomes**	**Resource person**
10:30-11:00	Setting the context. Introducing the issues on drinking water in the country and their solutions.	• Climate crisis • Water shortage • Need for sustainability of thesources. • Introducing the basic principles to make the drinking water sourcesustainable • Traditional Water Harvesting Structures	CSE
11:00-11:30	About Jal Jeevan Mission	• Overview of Jal Jeevan Mission • Drinking water sources in the country • Focus of the Mission – bringing in the points on source sustainability	Jal Jeevan Mission
11:30–11:45 Tea Break			
11:45–13:00	Understanding of water budgeting	• Deciding on single and multiple sources • Calculating demand and supply • Conjunctive use of water by using efficient methods and technologies • Surface and • groundwater recharge • Success stories on management of drinking water sources	Durjoy Chakravarty, Retired Scientist, Central Groundwater Board
13.00–14.00 Lunch Break			
14:00–15:00	Developing a decision matrix - Deciding the type and design of sustainability structures for both groundwater and surface water sources	• To understand the overall process of decision making for groundwater recharge	Durjoy Chakravarty, Retired Scientist, Central Groundwater Board

15.00–15.15 Tea Break			
15:15–16:30	Designing details for different recharge schemes for groundwater and surface water sources and cost estimation, Introducing the planning, designing, implementation of rooftop rainwater harvesting. Post implementing maintenance and monitoring	• To understand the technical aspects of designing various structures and preparing their estimates and monitoring plan.	Durjoy Chakravarty, Retired Scientist, Central Groundwater Board
16:30–17:00	To understand the impact of groundwater recharge at local, village level and regional level & Understanding the process of monitoring groundwater and surface water recharge systems.	The participants will be able to develop the strategies for groundwater recharge monitoring and mapping	Durjoy Chakravarty, Retired Scientist, Central Groundwater Board
19:00–20:00	Cultural evening		
Day 2: 23 February, 2022			
Module 2: Step by step planning of sustainability of drinking water source			
10:00–11:00	Sensitizing the communities for sustaining the source of drinking water supply	• Sensitization of community for behavioral change towards water management • Sourcing funds – Convergence of • schemes • Understanding the fund flow mechanisms	Sampat Kale, Senior Assistant Professor, School of Rural Development, Tata Institute of Social Sciences –(webcast)
11:00-11:45	Community participation and its benefit in sustaining the village drinking water supply and conserving the water source	• Social contribution towards sustainability of the drinking water supply after hand over • Case example for portraying the successful management • of – groundwater-based schemes	Poppat Rao Pawar, Ex sarpanch, Hiware Bazar (Webcast) Hiware Bazar – a case study on community management of water source (webcast)
11:45–12:00 Tea Break			
12:00–13:00	Introducing Geographic Information System, Remote Sensing and using these tools for water management	• Sourcing rainfall and rock, soil, geographical coordinates, and aquifer data • Understanding the concept of thematic mapping to be used • for interpretation of lineaments/ groundwater recharge zones/ estimating groundwater potential • Hydrogeomorphological (HGM) • maps using open-source GIS tools like Google Earth, QGIS, GPS Essentials	Vivek Kumar Sah, Programme Officer, CSE
13.00–14.00 Lunch Break			
14:00–16:00	Group Exercise on Creating thematic layers using GIS tools	Handhold exercises for participants to capacitate them for creation of thematic maps	CSE
16:00–17:00	AAETI Visit	Exploring and Visiting the Green Campus	Gita Kavarana, Head, AAETI

Day 3: 24 February, 2022			
Field Visit			
10:00–17:00	Field Visit		CSE
Day 4: 25 February, 2022			
Module 3: Basic designing concepts using Geographical Information System (GIS) and Remote Sensing (RS) tools			
10:00–11:00	How to delineate a catchment and a drainage system using GIS tools, Understanding asset mapping	To understand the concept of watershed mapping and locating the assets	Pradeep Kumar Mishra, Programme Officer, CSE
11:00–11.15 Tea Break			
11:15–12:15	Interpreting topography from DEM, GW contour zones, identification of recharge zones based on topographical/ soil/ types/ geological formations	To be able for decision making based on different thematic maps.	Faraz Ahmad, Deputy Programme Manager, CSE
12:15-13:00	Activity 2- Group Exercise- Planning and designing of recharge structures	To understand the designing parameters of recharge structures	Faraz Ahmad, Deputy Programme Manager, CSE
13:00–14.00 Lunch Break			
Module 4 - Selecting and implementing sustainability structures at village level			
14:00–15:00	Identification of problem villages, sourcing rainfall, geological, hydrogeological and morphological data	To understand the overall process of decision making for groundwater recharge	Vivek Kumar Sah, Programme Officer, CSE
15:00–15:15 Tea Break			
15:15–16:15	Mapping of resources (surface water/ aquifer mapping/ social/ land resources/forestry/ topography/ litholog etc) at a village level – using GIS and RS tools,	• Resource mapping to map the required assets within the project area.	Vivek Kumar Sah, Programme Officer, CSE
16:15–17:15	Activity 2 – Group exercise – Participants prepare presentations outlining the way forward for long term source sustainability for the village visited		CSE
17:15-18:00	Activity 3 – Group Exercise on water budgeting at household and village level	How to frame water budget at household and village level	CSE

Day 5: 26 February, 2022			
Module 5: Monitoring the impact of the sustainability structures			
10:00–11:00	Monitoring overview - collecting protocols, periodicity and understanding the analytical process at the laboratory	To understand the process of monitoring of water quantity and quality. Using the data collected from the field. Participants will present their understanding	Arvind Singh Senger, Environment Monitoring Laboratory, CSE
Module 6: Using efficient new energy and renewable energy formaking drinking source sustainable			
11:00–12:00	To identify appropriate renewable energy source(s) and technology (ies) to be used for extraction or treatment of water in different groundwater and climatic regimes. Cost of using solar or other renewable energy for extraction of groundwater	To understand about the clean energy and its impact on making the water source sustainable	TBC
12:00–12:30	Distribution of certificates and Feedback		Gita Kavarana, Head, AAETI

For further queries:

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