

Hydro-geology training conducted to strengthen the scientific planning of the NREGA-Dhara Vikas Programme

A four days long workshop on Hydro-geology in context of springs of Sikkim under the MGNREGA-Dhara Vikas programme was organized from 7th to 10th May, 2010 at the State Institute of Rural Development (SIRD) Karfector, South Sikkim. The workshop was organized by RM&DD and SIRD jointly with the technical support agencies namely ARGHYAM Bangalore, ACWADAM Pune, WWF Sikkim and TMI (The Mountain Institute). The main objective of the workshop was to bring about a better understanding of the Geo-hydrology of springs of the State so as to make the planning of the ongoing Dhara Vikas programme more scientific. In mountain terrain, ground water is stored in the rocks and the accumulation and flow of ground water depends of the type and structure of the rock. Hence understanding the geology is imperative in order to identify the type of spring, identifying the recharge zone so as to take up artificial recharge works. Understanding the Geo-hydrology of the terrain is critical to understand the type of spring and its recharge zone. Based on this artificial recharge measures can be appropriately designed and implemented.

Main technical support for the workshop was provided by Shri Devdutt Upasani, scientist from ACWADAM, Pune (Advanced Center for Water Resources Development and Management) who has wide experience in water conservation initiatives in similar mountain terrain in Uttarakhand, Himachal Pradesh and Western Ghats. ACWADAM is a knowledge center on ground water resources and is actively working with partners in several parts of the country. Other resource persons for this 4 day workshop were Dr P. K. Das Assistant Hydro-Geologist from Central Ground Water Board, Kolkata, Shri Dinesh Bhutia Director SIRD, Dr Sandeep Tambe Additional Secretary RM&DD, Dr Ghanashyam Bastola from The Mountain Institute-India and Ms. Priya Shreshta from WWF-India. The participants of the workshop were Field Facilitators of all the Block Administrative Centers of Sikkim, research scholars from Ashoka Trust for Research in Ecology and Environment in Sikkim, Gangtok along with members of Non Governmental Organizations, Panchayats and barefoot engineers.

The workshop was divided into two parts, classroom and practical sessions. Under the classroom session the topics discussed were the types of rocks, aquifers, ground water and springs in Sikkim, while in the practical session the team visited Dethang GPU under Kaluk BAC (Block Administrative Centre) West Sikkim wherein Nala dhara was studied and the ongoing artificial recharge measures were reviewed. On the same day the team also visited Poison lake at Rinchenpong West Sikkim which has dried up, and the measures to revive the lake were discussed. Similarly the team visited another dried up lake named Tamley lake at Mungran which falls under Melli BAC South Sikkim, and conducted a thorough study to find out the measures to revive the lake. The team was provided hands on training to use various equipments and instruments needed for the study of Hydro-Geology namely GPS, Compass and Tracer. In the same manner the study of two other springs namely Devithane spring and Malagiri spring was also conducted. The study included identifying the rock type, rock structure, type of spring, discharge and quality of water. Of the five type of springs known to occur in the

Himalaya, namely depression, contact, fault, fracture and Karst, the team could locate four types of springs during the field visit.

One interesting finding was the identification of the Omchu falls in Sikkim BAC, South Sikkim as a Karst spring. Karst springs are known to occur in limestone terrain and are characterized by a voluminous discharge which does not reduce much even during the lean season. Detailed planning is now underway to tap and divert a part of this water to meet the irrigation requirements of the 60 households who reside in the lower belt of this area.

Since Geo-hydrology is a technical field, the participants requested for further hand-holding support and requested for regular trainings and exposure visits to gain more expertise and experience.

