



**Water Security in Peri-urban South Asia:  
Adapting to Climate Change and Urbanization**



## **Exchanging information and Climate Change Perception**

**Venue: Dadhikot**  
**Date- March 8<sup>th</sup>, 2012**

A day long dissemination workshop was conducted in Dadhikot VDC on March 8<sup>th</sup>, 2012. The program was conducted with multiple motives of disseminating the research findings focusing mainly on the water issues of Dadhikot VDC. Also the findings from the analysis of secondary hydro-meteorological data were shared. PRA tools were used to better understand the water situation in the VDC and the feedbacks were collected from the local stakeholders. The program was simultaneously targeted to collect the aggregated perception on the climatic variability from the local people both male and female belonging to different age groups and both dependent on agricultural and non-agricultural livelihoods. The workshop received an enthusiastic participation of over 85 local participants from different age groups and diverse occupation.

The program was divided into three sessions. Prior to the tea break was dedicated towards the dissemination and feedback collection. The second towards using PRA tools and collecting the climate change perceptions and the final for sharing the findings from the secondary climatic data analysis triangulating these with the local perception on the climatic variability and the adaptive strategies.

### **Session 1:**

The workshop commenced with brief introductory session and succinct note on the Peri-urban water security research and its relevance in the context of Kathmandu and South Asia by Prof. Shukla reflecting about the water resources of Nepal and changing status in water management strategies, practices and water rights with contextual examples from Kathmandu, Chennai and Delhi in India and his own experiences.



Figure 1: Introductory session

This was followed by the presentation of the findings on the water issues of Dadhikot VDC by Mrs. Anushiya Shrestha. The study was appreciated by the local participants and the feedback regarding the declining command area of the terms of the historical Mahadev Khola and CHankhandi Irrigational Canal was provided which has been considered very useful to better understand the peri-urban water dynamics. The irrigation canals which were designed to irrigate 450 hectares and 250 hectares were not only for Dadhikot VDC but also neighboring VDC Balkot. The command area currently had declined due to various reasons such as encroachment and lack of proper maintenance. Though there no official records has been maintained but the Secretary of the Irrigational water Consumer committee estimated the command area has declined for both canals, currently approximately a total of 7000 ropanies could be irrigated in these two VDCs (Dadhikot and Balkot), 3500 Ropanies (178.12 hectares) in Dadhikot VDC could be irrigated in Dadhikot VDC. Similarly as the population data on the VDC level from latest census has not been disseminated, the study has been based on the census of 2001. The local people estimated that in the last decade the household number in Dadhikot VDC has increased from 1352 (CBS, 2001) to over 2200 households in 2011. The water insecurity concerns were vividly growing among the VDC people and these changes were closely observed by key functionaries involved in community water management schemes from the early years. Dadhikot Uttisghari DWS which started distributing private taps around 10 years back with 800 households has now been serving 1352 households but the discharge in the spring source has declined from 8.33l/sec in 2001 to 4.5l/sec in 2011.



Figure 2: Sharing the Research findings and collecting the feedbacks

The stakeholders directly with years of contributions for the water management in Dadhikot have been advocating the need of Watershed conservation approach to maintain water security in the VDC and regarding this the local people are proactively working to promote Nagarkot-Dadhikot Watershed Conservation. The program was conducted in the premises of Araniko High School and the principal of the school appreciated the research and practice of disseminating the findings and requested the peri-urban research team to provide the document on Dadhikot for the library of the school. This ended the first session.

### **Session 2:**

After a short tea break, the program regained its pace for the second session. The participants were divided into three groups, with each team being guided by the representatives from the research team and the climate change perception questionnaires were delivered separately in each team. Simultaneously, the participants were facilitated to use PRA tools (time line to relate the retrospective climatic events, seasonal agricultural calendar, water demand and supply perception, gender segregated daily activities calendar and perceived climatic trend line) to interpret their perception regarding water management and climatic variability.



Figure 3: Participants during Group works

The team work was followed by lunch break.

### Session 3:

After the lunch the third session started. The findings from each team were shared by the researchers guiding the team. While the team findings were homogenous in some aspects these were also providing additional information regarding the local perception on water management, perceived climate change and adaptive strategies. Following this Mrs. Anushiya Shrestha and Prof. Shukla shared the findings from the analysis of secondary data and compared the similarities and differences on the perceived changes in climate and that coming out through the analysis of hydro-meteorological records. The temperature records analysis showed increasing trend in both the daily maximum and minimum temperature while the rainfall data analysis did not show any distinct change in the rainfall trend. The perception regarding increasing temperature, both summer and winter were similar to the findings from secondary analysis whereas the declining rainfall as perceived did not exactly fit the results from data analysis.



Figure: Discourse on the findings

Prof. Shukla very critically explained the variation regarding perception on rainfall. With urbanization induced increasing water demand and built-up areas, resulted decline in water bodies and ground water recharge zone, thereby reducing the water availability, both for domestic and agricultural purposes. Though the amount of rainfall has not undergone decline, the declining availability has been perceived to be ensued from declining rainfall. He stressed as the changes in the climatic parameters cannot be managed, the need is to strengthen the adoptive strategies. In this aspect rain water harvesting and ground water recharge was acknowledged by the local participants and the research team as the compulsory need for the sustainable water management. Concluding the session, Prof. Shukla appreciated the Watershed conservation program and shared the moral interest of *nec* as an engineering institute to serve for the community benefits.