



Water Security in Peri-Urban South Asia

Adapting to Climate Change & Urbanization

Inception Workshop - Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation

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Inception Workshop - Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation

The Inception Workshop for the project "Water Security in Peri-Urban South Asia: Adapting to Climate Change and Urbanisation" was held from August 16 – 20, 2010 in Hotel Radisson, Kathmandu. The Workshop was coordinated by Dr. Anjal Prakash (Project Director, Peri-Urban Project) from SaciWATERS, Hyderabad, and was organised by Nepal Engineering College (NEC), Kathmandu. The workshop was attended by all the key staff members from Project Partners in Bangladesh, Nepal and India (Hyderabad and Gurgaon). The workshop was attended by Prof. Shah Alam Khan, Prof. Rezaur Rehman and Dr. Shahjahan Mondal from Bangladesh; Prof. Ashutosh Shukla, Dr. Hari Krishna Shrestha, Mr. Mohan Bikram Prajapati, Mr. Rajesh Sada and other project staff from Nepal; Dr. Vishal Narain represented Management Development Institute (MDI) in Gurgaon, and Dr. Anjal Prakash and Ms. Sreoshi Singh from SaciWATERS, Hyderabad.

The Programme began at 9.30 a.m. on 16th with almost 60 attendees from various government departments, NGOs and other civil society groups, who were specially invited to the first day of the workshop for their inputs in different sessions.

The first session began with a brief introduction by **Dr. Hari Krishna Shrestha**, Principal, NEC. He extended a warm welcome to all participants of the workshop and mentioned about the beginning of the new project on water security in peri-urban areas of South Asia with SaciWATERS and introduced the key members involved in the project which was followed by a larger round of introduction by all participants attending the workshop. He then requested Dr. Anjal Prakash to explain the purpose of this workshop to all participants on what it would entail. **Dr. Anjal Prakash** began with explaining what SaciWATERS as an organisation seeks to achieve and the purpose with which it was set up. He highlighted briefly about the current CB project and its objectives and in this light, the purpose of this new project. He explained the objective of the workshop in trying to commonly understand peri-urban water issues and to gain further knowledge through interaction with experts from various fields present there and to incorporate their wisdom in taking this project further. He also mentioned what the team as a whole would be doing during the four days of the workshop and what were going to be the outcomes from the discussions that follow.

This was followed by a presentation by **Dr. Sara Ahmed**, Senior Program Specialist, International Development Research Centre (IDRC), about IDRC's portfolio with special reference to South Asia, in the context of the project. She highlighted climate change as one of the key areas which has serious implications for water security in South Asia, but owing to lack of much research being done in this area, a lot of gap still remains, especially interdisciplinary research. Further she emphasized that there has hardly been any research that has been able to make a dent at the policy level. She mentioned that knowledge needs to inform decision-makers. She highlighted that IDRC is involved in regular monitoring and progress of activities whereby they intervene through improving capacity of researchers, facilitating improved communication between communities, researchers and policymakers and undertaking dissemination of high quality research. Last but not the least Dr. Ahmed stated some of the challenges and trends in research- lack of local data – global models, trends and political boundaries (water), investments





in the science of climate change, without understanding wider systems that support adaptation, e.g. finance, education, migration, sector approach, big solutions but very small change, multiplicity of actors, weak climate focal points and short-term research agendas (NGOs), the need for involving the private sector, partnerships, process-oriented, and transformatory.

The next presentation was split into two parts, the first part being explained by **Dr. Vishal Narain** who explained the meaning of a peri-urban zone which is an area neither completely rural nor urban and therefore is at the edge of the rapid urbanisation which slowly engulfs agricultural regions and expands into rural areas adjacent to large cities. He attempted to explain how pressure of urbanisation coupled with climate change can have an implication for water availability and can make these areas extremely vulnerable. The second part of the presentation was made by **Dr. Anjal Prakash** about the objectives of the study and peri-urban sites of Khulna (Bangladesh), Hyderabad and Gurgaon (India) and Kathmandu (Nepal) selected for the study, highlighting the rationale behind selecting them and the key issues in each of these locations.

This was followed by discussions and questions from experts who asked for further clarifications on why this topic and specific sites were selected. The Chairperson closed the session with his remarks.



After tea the second session began with a presentation by **Dr. Mahendra Subba**, DDG, Department of Urban Development, who explained how the Kathmandu valley has expanded over time and how the urban department has been trying to provide basic amenities to all and what have been the challenges and the problems being contemplated for the future. He explained in detail the haphazard urbanisation process that has taken place in the last 10 – 15 years and the criticality of such development which has serious implications for basic amenities, especially water. Some of the activities he mentioned have had a serious impact on geology and river systems of the country. Again the prolific growth of brick kilns and river sand mining activities which take place outside the valley limits, to cater to the construction industry, affect the peri-urban zones. Dr. Subba showed the extent of urban sprawl in the valley from 1967 to 2000 through satellite images. In this background, he spoke about the response from the government in trying to devise appropriate plans and programmes for urban development and planning. Through facts and figures, Dr. Subba showed how the government plans have been geared towards providing water and sanitation to as many citizens as possible through protecting watersheds, investing in building of storage tanks and piped connections to households who do not have direct connections, promoting water harvesting and organising annual programmes to install rainwater harvesting system in existing Government buildings. Rainwater harvesting demonstration programmes are also underway in 4 municipalities all over the country. He mentioned that the government being conscious of the climate change impact has introduced the National Adaptation Program of Action (NAPA) on Climate Change. He concluded by mentioning some of the gaps and leakages like fragmented institutional arrangement, leading to weak coordination and enforcement, regional entities like KVTDC that suffer from inadequate institutional arrangement and policy inconsistency. These according to him needs rethinking for sustainable growth for which he recommends, a clear delineation of urban and rural



lands through either zoning whereby precious lands can be preserved or environment performance standards and land subdivision to control land use, maintain greeneries and (re)plantation—and promote eco-city programme, promote green building technology and materials to reduce ecological footprints.

In the discussions that followed, participants enquired further about the green technologies that were being planned and how cost effective they would be. There were also discussions about the nexus between land sharks and government, which were largely responsible for violation of laws and further deterioration of the situation, something that disrupts the whole development process and the exercise of devising plans and programmes becomes a complete farce rather than for serious development goals.

Dr. Hari Krishna Shrestha from NEC, spoke about the water management institutions that have played a role in Nepal through historical times and the relevance they have for today. He said that traditionally, there have been three main types of water management institutions namely Rajkulo, Guthi for management (including maintenance) of dug wells, ponds, springs and stone spouts and FMIS/WUA. He mentioned about the current management practises that are in place and their roles and responsibilities. He went onto explaining how scarcity is different from shortage and that Nepal actually suffers from shortage and not scarcity and the reasons behind this shortage. He tried to explain this phenomenon by showing the state of available water resources in the country. According to Dr. Shrestha, if the current water use in various sectors are seen and the projected figures for future are examined, one can clearly understand that it is water shortage that grips the country, the reason being climate variability resulting which causes more rains when not required and less rains when demand is more. This he said calls for efficient water management practises which is lacking in the country for right amount of water at the right time and location to avoid scarcity. The present management institutions are attempting to adapt to certain technologies like investment in management and efficiency, promotion of community water management, understanding the proper value of water, promoting water recycling, storage capacity expansion, improved crop planning, ppp of local water utilities. He also mentioned about best practises that can be taken up from the Israel experience and along with this he also suggested the need for long term weather forecasting which can help in better adaptation. As another option, he mentioned that technology for estimating snow melt runoff and sharing information with farmers and hydropower developers can be extremely useful for adapting to the crisis during summers for selection of crops/turbine operation based on expected water availability in the streams.

A round of discussions was quickly held with some people not agreeing to the fact that there isn't any scarcity in Nepal. After this a presentation was made by **Ms. Lajna Manandhar** from Lumanti, an organisation, where she mentioned about the initiatives undertaken in the year 2008-2009 to conduct integrated water, sanitation and hygiene projects in Bharatpur, Narayan Tole, Thecho, Tokha whereas in Biratnagar, besides the above three components, the organisation has introduced livelihood programmes through microfinance. Lajna mentioned that the Bharatpur, Narayan Tole and Thecho projects are completed successfully, while the Biratnagar project will continue for two more years.





Advocacy programmes have also been conducted in Thimi, Bharatpur and Biratnagar Municipality.

After the presentation by Ms. Lajna, there was a round of discussions and comments after which the participants headed for lunch while a short press conference was organised where several vernacular newspaper journalists were present to whom, a press brief in Nepali was distributed. **Dr. Anjal Prakash** made a short presentation to the media and **Prof. Shukla** explained in details about the objectives and activities of the project. There was a round of clarification from the media persons about certain aspects of the project sites and the project in general.

After lunch **Prof. Shah Alam Khan**, Chairperson of the third session began with a small introduction to the session and what it entails. The Chairperson requested the first speaker, **Mr. Dibesh Shrestha** from NEC, a 2nd Year student of IWRM, to begin his presentation. Mr. Shrestha had studied the tanker economy in Kathmandu and how it has played a major role in usurping water resources from six peri-urban locations. He made a presentation on his research results highlighting on the core issue of tertiary water markets in Nepal. Mr. Shrestha began by pointing out that, with increase in the population of Kathmandu, the demand for water is now 280 MLD. To meet this excess demand, the tanker economy has come into play, to supplement the existing sources of pipelines and traditional systems. He mentioned that Kathmandu valley is served by small and large tankers with capacities from 5000 to 1200 l. He explained how water is extracted in each of these locations and the frequency of visit of the tankers of 10000 l capacity to these locations, atleast 6-7 trips during the day during the winter and summer months and upto 2 trips in a day, post monsoons. Water tankers contribute 9 percent of the supply of water in the Kathmandu valley. The financial transaction of private tanker-based market is 4.5 times higher than KUKL's annual expenditure for 2007-2008. The presentation also highlighted on the quality concerns for the water that is distributed through tankers to various users in the valley. Mr. Shrestha concluded his presentation by linking issues of climate change which is likely to alter the hydrological cycle in a big way in the years to come, and reduce groundwater recharge, all compounded with this entire tanker economy which will lead to further water insecurity for the valley. This presentation was extremely appreciated because it brought out many issues that point towards the larger problem of water insecurity and called for immediate policy intervention for more sustainable practises.

Mr. Dipak Gyawali was the next presenter, who began by showing an interesting multifaceted photograph to explain what a Desakota actually means and how is it created. He explained that poor people in rural areas are dependent on ecosystem services and the trends and processes of globalisation in cities lead to a stress on these ecosystem services which are again further accentuated by the global change in the climate and environmental systems. All these have an impinging effect on each other. The zone in between which bears the brunt of all these systems is the desakota, neither urban nor rural, but an overlap of both where time and space collapses, resulting in a zone of mixed livelihoods often characterised by greater penetration of cash economy, but ridden by tensions between formal and informal and traditional institutions for resource management. Desakota ecosystems are usually subjected to deterioration of land, river flow regimes, water and other existing natural resources. He emphasized on the need for research on certain specific aspects of Desakota:

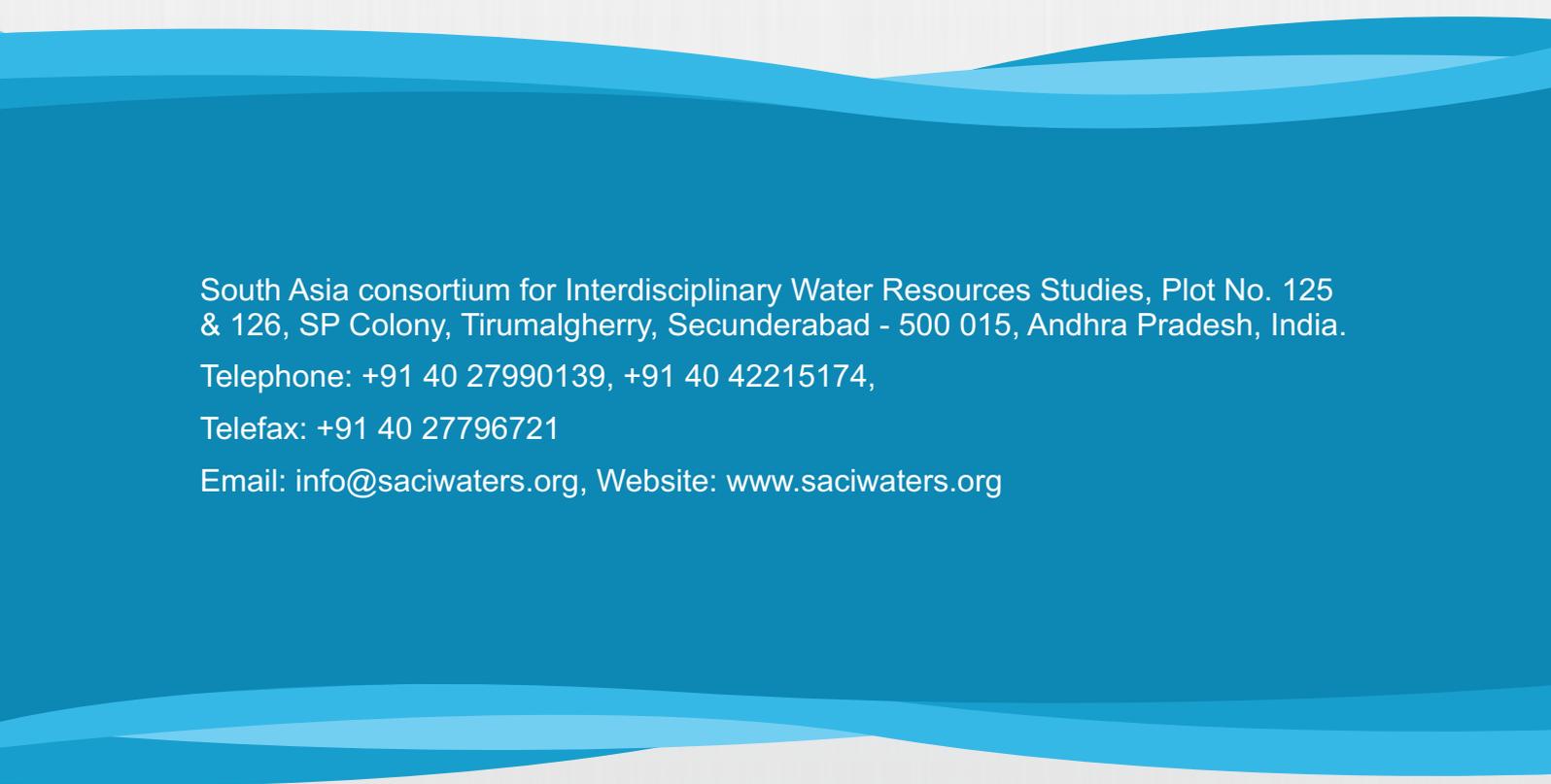
- Interactions between land cover and climate under desakota pressures
- Inclusion of such processes in climate change models
- The role of desakota for increasing energy consumption, the impact on climate and the need for appropriate alternative 'green' technologies
- River flow regime characterisation, which considers riparian-surface water-groundwater connectivity
- Small scale hydrological, geomorphological and ecological response to global climate change (including water-borne disease)
- The impact of desakota development on water ecosystem processes and water-borne disease
- The development of management strategies to mitigate against any adverse impacts

Along with the above there is also a need to understand the desakota in the context of the institutional challenges, and therefore research is also essential to understand the changing pattern of institutions over time and investigate new institutional models which move beyond community-government-based water and resource management in desakota areas. Mr. Gyawali mentioned that in this backdrop there is a need to further investigate how desakota may change the relationship between ecosystem services and poverty and what are the factors contributing to vulnerability of the poor, new opportunities and constraints in access to resources and tertiary markets and develop and more holistic indicator of poverty. There should also be an attempt to investigate how the vulnerable communities have undertaken collective action and enabling factors that have enhanced access to quality ecosystem services in desakota contexts. This presentation generated much stir and interest within the participants and many queried about the use of the term desakota, being foreign and hence could be less associated/related to the South Asian understanding. Mr. Gyawali justified the use of the word by saying that it was just a usage like any other word and one may also question the word 'peri-urban', when it should be called 'peri-rural'. Why is it that the urban context is pulled into every aspect? Similarly desakota is just one such word, which holds a very neutral meaning, with specific connotations.

The next presentation was made by **Ms. Sabitri Tripathi**, from NEC, who highlighted on the research outcomes of a DFID sponsored project on water supply in slums and squatters in four study sites of Nepal. She mentioned about the objectives of the project and the methodology that was followed in trying to derive conclusions from the analysis made. Some of the interventions perceived at the sites were Bhalakhalak (source protection, chlorination, RWH plant, and community unity), Chamar Tolia (Pour flush latrine/permanent structure), Manohara (Government attention for basic services/hand pump installation/chlorination). Some of the outcomes of the project were joint research publication, professional development and staff training, community awareness, gender mainstreaming, improved networking, draft curriculum developed. Several research theses have also been submitted from this project.

The Chairperson then concluded the session with his comments and closing remarks.





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