

## **Conflict and Cooperation in the Management of Climate Change (CCMCC)**

*Climate Policy, Conflicts and Cooperation in Peri-Urban South Asia: Towards Resilient and Water Secure Communities*

### **Consultation meeting report**



**4 March 2015, ICIMOD, Kathmandu, Nepal**

**Jointly organized by ICIMOD and MetaMeta, with support from NWO and DFID**

## 1. Objective

A consultation meeting on water issues in the Kathmandu Valley, with a special focus on conflict and cooperation in peri-urban areas, was organized on Wednesday 4 March 2015 by the International Centre for Integrated Mountain Development (ICIMOD) and MetaMeta. This meeting formed part of a larger research initiative on *Climate Policy, Conflicts and Cooperation in Peri-Urban South Asia: Towards Resilient and Water Secure Communities*, which is active in three countries: Nepal, Bangladesh and India. This project is funded under the *Conflict and Cooperation in the Management of Climate Change (CCMCC)* programme of NWO/WOTRO and is executed by an international consortium of organizations (SaciWATERS, Wageningen University, Institute of Water and Flood Management Bangladesh, Jagrata Juba Shangha Bangladesh, ICIMOD and MetaMeta).

The objective of the CCMCC project is to contribute to the improvement of *peri-urban water security* by enhancing community resilience to urbanization and climate change through increased cooperation and reduction of conflict, producing opportunities for improved livelihoods for poor, marginalized and vulnerable groups and resulting in climate-smart water resources and climate change strategies, policies and actions at various levels.

The aim of the consultation meeting was to acquire input and feedback for the selection of potential geographic and/or thematic case studies for in-depth research in the Kathmandu Valley in order to *develop an understanding of the dynamics around peri-urban water security and stressors emerging from urbanization and climate change in producing conflict and cooperation around peri-urban water resources.*

## 2. Programme schedule:

- 09:45 – 10:00 Arrival and welcome tea session
- 10.00 - 10:30 Opening
  - Short briefing on the overall CoCooN/CCMCC project (“Climate Policy, Conflicts and Cooperation in Peri-Urban South Asia: Towards Resilient and Water Secure Communities”) and objective of the meeting
- 10:30 - 10:45 Elaboration on site/theme selection criteria
- 10:45- 12:00 Group sessions to generate input and expert knowledge on selection of sites/cases (with working coffee/tea break)
- 12:00 – 12:30 Plenary and Concluding Remarks
- 12:30 – 13:30 Lunch

## 3. Sessions and discussions

The meeting was opened by Dr. Philippus Wester of ICIMOD, who welcomed the participants, explained the objective of the meeting and provided a presentation on the overall CoCooN/CCMCC project (“Climate Policy, Conflicts and Cooperation in Peri-Urban South Asia: Towards Resilient and Water Secure Communities”). This was followed by a presentation of Saroj Yakami of MetaMeta, providing insight into

potential selection criteria for case studies as well as some examples of possible geographic or thematic cases as an introduction to the group work.

During this session, a specific point was raised with regard to the development of indicators for defining peri-urban areas; the CCMCC team was advised to define these indicators very clearly. Another question that was raised concerned the development focus of the project: the participant indicated that the focus of the project seemed rather academic, as opposed to developmental. This was answered by Dr. Anjal Prakash, who indicated that although this is indeed a research initiative, it has strong development and capacity building components, in which inequitable access to water is a very important component, especially devising ways to alleviate this and to influence policy development in this area.

Subsequently, a point that was raised by Dr. Druba Pant concerned the fact that the CCMCC project would need to look specifically at urban - rural linkages. For example, with regard to Melamchi, this is now a rural area but moving very rapidly to peri-urban and will very soon even become a designated urban area. In addition, regarding Melamchi, the CCMCC project will need to take into account the changes this water transfer project will bring with it to the overall Kathmandu Valley water supply situation. Dr. Mahendra Subba of the Ministry of Urban Development emphasized that the project team needs to be careful not to generalize – the forces that shape development patterns are very different within urban areas (within municipal boundaries), rural areas and peri-urban areas and it is thus important to distinguish between these 3 different areas.

The second session consisted of group work in order to generate input and expert knowledge on the selection of geographic and thematic study sites. Three groups were formed and each group was asked to brainstorm and generate potential case study areas in the two different categories - geographic and thematic. At the end of the group work session, participants grouped the various meta cards into the two categories. The group work was facilitated by Dr. Philippus Wester, Jasmina van Driel and Saroj Yakami. Subsequently a plenary session was facilitated by Dr. Philippus Wester and participants each presented their specific idea that was posted on the meta cards on the thumb board.

#### **4. Group work**

Below the outcomes of the group work are presented – the first part entails the geographic case study sites that were suggested and the second part focuses on the thematic cases.

**A. Geographic cases:**

**From Gokarna to Sundarijal (1 meta card)**

- i. Land pooling
- ii. Water quality (surface water quality)
- iii. Agriculture pattern changed: paddy to commercial crops
- iv. Ground water: recharge changes due to housing development, irrigation, over extraction of groundwater

#1

**Sundarijal: Headwater of the Bagmati (1 meta card)**

Shivapuri: conservation area and rapidly growing

- i. Melamchi: major source of water supply for Kathmandu
- ii. Hydrology: advantage of this basin is that there is well monitored hydrological data

#2

**Kodku, Godavari (1 meta card)**

- i. Well defined watershed with high water supply potential (perennial water source)
- ii. Diverse land use
- iii. Moderately changing
- iv. Marble quarry

#3

**Lele, Lalitpur (1 meta card)**

- i. Number of crusher industries within the Nallu River Basin
- ii. Land use changes
- iii. Water extraction
- iv. Stone extraction
- v. Growing brick kiln industry
- vi. Town increasing

#4

**Jhaukhel VDC (Hanumante basin), Bhaktapur (1 meta card)**

- i. Water bottling plants -> GW extraction
- ii. Problem from sand mining contributing to water bodies pollution
- iii. Distribution of water decreasing
- iv. Water (in)security in informal settlements

#5

**Taudaha, Kirtipur, Kathmandu (1 meta card)**

- i. A very important lake for migratory birds
- ii. Culturally very important site within a peri-urban area

#6

**Matatirtha VDC (Now in Chandragiri Municipality) (1 meta card)**

- i. Community water user group/management
- ii. Commercialization of natural (water) resources
- iii. Availability/Accessibility
- iv. Water rights issues
- v. Hydrologically potential but geologically vulnerable area
- vi. Traditional springs: either do not exist or on the verge of diminishing/drying/falling... (potential for reviving spring sources)
- vii. Potential of GW recharge due to its topography and geography
- viii. Urbanizing rapidly due to road network, resources (water) and accessibility to urban facility
- ix. Heterogeneous population, high in-migration rate, more industries
- x. Unequal water distribution within the area dwellers
- xi. Growing commercial/organic farming

#7

**Water recharge zones (1 meta card):**

- i. Matatirtha
- ii. Tokha/Jhor
- iii. Sundarijal

#8

**B. Thematic cases**

**Peri-Urban Agriculture (1 meta card)**

Creating disadvantages of peri-urban into advantages

#1

**Real estate development (3 meta cards)**

Groundwater abstraction by real estate development, land pooling, high rise buildings and residential colonies. Impact on surrounding hydrology.

#2

**Water distribution system in Kathmandu valley (1 meta card)**

Maximum loss of water in pipe distribution (due to leakages)

#3

#### **Stone Spouts (traditional water management system) (5 meta cards)**

- i. Increasing rate of drying stone spouts. Bottom 20% of the people in the city uses spouts. Linkages of stone spouts are degrading.
- ii. Linkages of Raj Kulo (Royal Canal) to water in Lalitpur and groundwater recharge (connection to stone spout water).
- iii. Traditionally water from Tika Bhairab was channeled to Khokana then Patan town through "Raj Kulo" and GW recharge. Now polluted water from KTM valley goes to Khokana. There is a plan to construct wastewater treatment plant in Khokana.
- iv. Access of water through spouts. It is necessary to understand where are the recharge zones of these spouts which are in the peri-urban area. And linking research to policy of protecting recharge zone.

#4

#### **Rain Water Harvesting (2 meta cards)**

- i. Retain rainwater through land pooling guidelines
- ii. Continue the promotion of RWH in urban areas & restore groundwater level
- iii. Rainwater harvesting for recharging shallow water (WaterAid undertook a study on this). Suggestion is to follow up on this instead of starting in new areas. Also necessary to understand changes over time – pattern – links to climate change

#5

#### **Dynamics of water extraction, water transfer and environmental issues (5 meta cards)**

- i. Dynamics of water extraction, agricultural use and waste disposal
- ii. Water supply to urban areas disrupted the water supply to farming in peri-urban areas.
- iii. Environmental implication of water extraction in the peri-urban areas and which policy and institutional mechanisms exist (or do not exist) to deal with it
- iv. Water transfer from rural to urban areas
- v. Water quality pollution, river/gw, wastewater

#6

#### **Water rights, policies and institutions (3 meta cards)**

- i. Water rights issues and role of water institutions (DWQC) on water sharing and conflict resolution of peri-urban level
- ii. The role of policy and institutions
- iii. Inter-sectoral water sharing
- iv. Sharing/conflicts water for domestic and irrigation use, community initiatives

#7

### C. General discussion points and overarching suggestions (both geographic and thematic)

- There is a need to look at the following elements for each thematic and geographic case:
  - i. Socio-economic implications
  - ii. Environmental implications
  - iii. Policy gap and policy recommendations
- A need to explore the enforcement of the establishment of institutions with respect to the water and wastewater chain.
- Domestic versus irrigation use of water (cooperation/conflict):
  - i. The implication of water extraction in the agriculture sector.
  - ii. If not politicized by political players, often we can see issues solved by local people themselves
- The Melamchi drinking water project needs to be kept in mind: localized increased social tension is anticipated as water needs to be transferred from Melamchi to Kathmandu. On the other hand, certain problems will be alleviated because of increased water availability in areas throughout the valley.

### D. Selected cases for in-depth study

Out of the shortlist that was generated during the group work (listed in section A of this report) one case from each category was selected, namely the **Hanumante basin** as a geographic case and **traditional water management systems** as a thematic case. Since the Hanumante basin also contains a number of traditional water sources, the thematic case is part of the geographic case. The Hanumante basin was selected as a geographic case because as a natural unit it provides ample opportunity for more in-depth exploration along (parts of) its water ways to obtain insight into the interlinkages between elements of conflict and cooperation with regard to water security. The Hanumante River is also an important tributary to the Bagmati River, the lifeline of Kathmandu.

## Annex 1: Participant list

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