Final Report

IWM KURSEONG-DARJEELING

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Executive summery

The 40,000 inhabitants of Kurseong, a town situated in north-eastern India on the Himalayas southern slope, suffer from unreliable access to drinking water of insufficient quantity and poor quality. The main reason is a deficient water supply system, due to weak governance and management as a result of historical circumstances. In response to the urgent situation IWM KURSEONG-DARJEELING has been initiated with the overarching long-term purpose to "*provide clean, clear and safe, potable water to all inhabitants in the town of Kurseong, facing future needs, climate change and preserving the ecosystem*".

IWM KURSEONG-DARJEELING'S most important achievement is to have overcome the prevailing conviction that the situation must be rectified by "someone else". Through a participatory approach IWM KURSEONG-DARJEELING has established a stakeholder group that has gradually committed to being the problem owners as well as the executors of the solution. As a result a joint strategy and action plan for a sustainable integrated drinking water distribution system in the town of Kurseong has been developed and a full scale technical pilot system has been designed and is being implemented in one of the town's twenty wards. Reliable access to potable water will have direct and positive effects on poverty reduction, health improvement and gender inequality. To ensure that this perspective is not lost after the IWM KURSEONG-DARJEELING, "women as water managers" is included in the action plan to secure and adapt the pilot system and facilitate the up-scaling to all of Kurseong.

Purpose and objectives of the project

The overarching purpose is to "*provide clean, clear and safe, potable water to all inhabitants in the town of Kurseong, facing future needs, climate change and preserving the ecosystem*" (IWM KURSEONG-DARJEELING'S water vision). This is to be carried out in four phases, IWM KURSEONG-DARJEELING being the second phase. The first phase was dedicated to planning, mobilization of resources and preparation (2011). The specific objective of the second phase, IWM KURSEONG-DARJEELING, is to develop a strategy and action plan for a sustainable integrated drinking water distribution system in the town of Kurseong, northeast India. Phases 3 and 4 aim at up-scaling KURSEONG-DARJEELING'S results through financing, procurement and contracting and infrastructure construction.

IWM KURSEONG-DARJEELING focuses on soft variables such as multi-sector mobilisation and cooperation, capacity building and application of integrated water management. Moreover this phase will produce a technical pilot, matchmaking events and increased dissemination. Core project partners are Kurseong Municipality, IVL Swedish Environmental Research Institute (applicant), Artamus and IIIEE.

Project wide results

Baseline

Kurseong Municipality, as many of the municipalities in India, suffers from lack of potable water. It hampers regional economic growth and causes environmental as well as extensive social and sanitary problems, particularly in the dry season. There are three interrelated causes for Kurseong's water management situation at the project start:

- Insufficient inter-organizational co-operation on a local and regional level, e.g. between the municipality and Public Health Engineering Bureau
- Under-dimensioned and inadequately maintained infrastructure
- Lack of problem ownership and knowledge.

The situation has aggravated over decades with constantly increasing population and insufficient maintenance and management of the water supply and distribution with 90 % of the municipality's annually allocated budget spent on mending leaks rather than investing for the future. There was neither jointly agreed definition of catchment area, nor water quantity or quality standards. The informal water supply sector keeps on growing every year. In addition there has been relentless deforestation reducing water retention and increasing landslides. The unstable political situation and weak connection to the state governmental level made inhabitants feel deprived of rights and infrastructural development. A consequence of the limited belief in and support of the municipality's efforts is numerous unstructured and illegal water tappings. Prior to IWM KURSEONG-DARJEELING a popular belief was that the intermittent supply was due to a lack of water in the region. There was no water budget estimating the available resource based on annual precipitation over the catchment area or loss of water through leakage and/or unauthorized tapping – despite the fact that the annual mean precipitation in Kurseong is approximately 3,500 mm, of which the vast majority falls during four months of monsoon, whereas the average annual precipitation of the entire surface of our planet is estimated to be about 1,050 mm or roughly 700 mm in Sweden. The absolute need for boiling the water to disinfect it was not questioned.

IWM KURSEONG-DARJEELING has carried out a questionnaire to all households in the selected part of Kurseong Town, ward 15, on the current perception of the households' water situation. Out of 163 respondents, no-one expressed satisfaction with the water quality and only 25 % were satisfied with the quantity. Water-borne diseases are of great concern. The grave situation and urgent need for improvement is summarised by every single respondent stating that acquiring and preparing water for the household affects the ability to work and earn a living.

Jointly adopted strategy and action plan sets a regional example

Over the project period there has been a remarkable shift in attitude and perception of the water situation and its solution. Kurseong Municipality today expresses a true commitment to the IWM KURSEONG-DARJEELING water vision to "*provide clean, clear and safe, potable water to all our inhabitants, facing future needs, climate change and preserving ecosystem*". The municipality is strong in its belief that there is a solution to the situation through an accurate management of the available water resources. Through consultations with the mobilized stakeholder group IWM KURSEONG-DARJEELING has jointly developed and adopted its own strategy and action plan, thus achieving its primary and chief objective. Through this complex process Kurseong Municipality has managed to redefine its role, responsibility and capability as a reliable water resource steward, ready to apply this methodology also together with its neighbouring municipalities.

This process of commitment is arguably IWM KURSEONG-DARJEELING's most important achievement, enabling the latter outputs as well as the sustainability of the results. Going from the initial situation where "someone" needed to tackle the current water challenge, IWM KURSEONG-DARJEELING formed the stakeholder group and gradually encouraged and motivated the understanding for a major shift in water resource management, of water as a common and finite resource and the group's joint responsibility. The process has increased and reinforced engagement, public support and awareness on water and the municipality is now the forerunner in realizing its ownership and responsibility to act on the situation. Throughout the implementation period we have thus shifted from local expectations from a perception that "Swedish experts will provide drinking water" to understanding the role of the experts as advisors and facilitators of a process run by the stakeholder group itself. The core stakeholder group consists of the main problem-owner Kurseong Municipality, Public Health Engineering Bureau, with State charge, providing water to the municipality and the rural surrounding areas, autonomous 'district' level Gorkhaland Territorial Administration, established in 2013, providing means for infrastructure development and training and the State Forest sub-Division Office of Kurseong, landowner of the water sources and their surrounding catchments. Other stakeholders, such as women organisations, private sector tea gardens, representatives from the civic and academic society are closely involved. An imperative Letter of Intent has been set-up and signed stating their support to the IWM KURSEONG-DARJEELING development activities.

Reinforced institutional co-operation enables efficient management

IWM KURSEONG-DARJEELING has successfully initiated a strategic perspective on the water resource issue, not previously present. The level of institutional capacity is improving although unceasing strengthening is required. There is already a significant change noted in terms of attitude and priority setting for the water project among politicians and civil servants within the municipality and among the relevant stakeholders. Women are today more recognized as the main managers of water, equally the group that will benefit the most from the change.

Additionally Kurseong Municipality (distribution within the town) and Public Health Engineering Bureau (distribution to the town) co-operate on certain water issues instead of working in parallel or independently of each other. One concrete example is the IWM KURSEONG-DARJEELING technical group, responsible for the technical pilot (see below). Another example is the two authorities' mutual conclusion that water quality is of imperative importance as well as the available water resource being of sufficient quantity, if leaks and other losses are prevented. The basis for this analysis is the IWM KURSEONG-DARJEELING measurements of water quality and quantity. This is a clear improvement from the initial belief that the current system approach had reached its limits and the solution would be to pump water from the Balason River in the valley below Kurseong. The Forest sub-Division Office is carrying out extensive afforestation, partially in co-operation with Kurseong Municipality.

According to the local demand several manuals have been introduced and developed to support and strengthen the performance in and change to integrated water management. A noteworthy example is the procurement guideline, which was practiced with a very satisfying result for the consultancy services of the pilot. Almost 10 % of the total project grant has been used for procured services, through both a direct award (minor assignment) and a medium bid-of-three process, both documented and supervised by the Swedish experts. With these manuals IWM KURSEONG-DARJEELING strive for a pragmatic approach with widespread and applicable outputs, in terms of securing operational capacity and resolution, spreading knowledge and increasing the water resource management abilities.

Full-scale pilot distribution network

"Seeing is believing." This frequently used statement from Kurseong's chairman Mr. Samir Dip Blon has become an informal motto for IWM KURSEONG-DARJEELING. The study-visit to Sweden was crucial for the key stakeholders' commitment to the task – based on the realization that the challenge at hand actually is possible to overcome. The leverage of seeing a working example resulted in an increase of the technical pilot's scope. The stakeholder group decided that the initially planned demonstration was insufficient. Instead a full scale pilot distribution system was necessary to convince the people, neighbouring communities, regional and national authorities and, not least, possible future financing institutions that IWM KURSEONG-DARJEELING'S approach is feasible. Out of totally twenty wards, Kurseong's Board of Councillors selected Ward 15 as the pilot ward. Ward 15 is located in the centre of the town, with low income and inhabited by multiple ethnic and religious groups.

In practice, the pilot has showcased a model for how to continue with and multiply the process of developing a water distribution network meeting the water vision and strategy. The technical group, being the municipality and Public Health Engineering Bureau supported by IVL, Artamus and IIIEE, has managed the entire process cycle; defining the system requirements and tender documents, procured technical consultancy services and initiated the implementation (to be finished by July 2014). The procurement process especially impressed the Swedish project

team. Four different firms were invited. The assigned one, Ghosh Consultancy based in Kolkata, was closely monitored by the technical group with frequent toll gates and delivered on time to a fixed cost. This has been a successful example of a new way of working for the project partners, both in terms of institutional co-operation and consultancy services. Multiple straightforward project management tools, such as Gantt-charts and result-based assessments were introduced. Another concrete example is the agreement made between the Public Health Engineering Bureau and Kurseong Municipality to provide new pipes and mending leaks from the sources to the Ward 15 securing uninterrupted water distribution. The pilot is continually identifying the technical challenges and tools to be developed, and just as importantly, identifying the organizational and managerial deficits that were addressed in the concluding training. The economic organisation around water utilities was one of those focal issues. Basic guidelines on how to think concerning water-user charges has step-by-step been introduced and discussed. Private and public utility sector have been discussed as options and the interest from service providers has been scrutinized. The evaluation of the outcomes from the pilot is essential to intensify discussions on options and will follow in the upcoming months.

By the end of this project period, i.e. end of June 2014, the core stakeholders led by Kurseong Municipality is well under way with the construction of the pilot. A new reservoir, primarily dedicated to provide water to ward 15 and secure sufficient pressure head for the system to operate adequately is completed. All digging for the pipes is finished sans crossing the national highway, for which the issued permit has yet to reach the municipality in master. Pipe laying has commenced from two directions and welding is on-going, albeit frequently interrupted by rainfall. Foundation of pressure filters is done and installation is about to start. All-in-all the construction work is estimated to be finished by mid-July and testing of the system before the end of July. If everything goes according to the plan, the pilot distribution system will be inaugurated in August 2014. In parallel with the construction works, IWM KURSEONG-DARJEELING has also issues a bill to the Board of Counsellors, resulting in the chairman assigning two counsellors to form a working group with the task to draft the water policy. Accordingly a water user charge model is being drafted. Both activities are central aspects of the action plan, based on the strategy developed by IWM KURSEONG-DARJEELING. These are additional examples of the stakeholder group's commitment to strive towards fulfilment of the water vision to "provide clean, clear and safe, potable water to all our inhabitants", and important steps to secure the sustainability of the project results.

The overall goal of Swedish development aid: Poverty reduction

Sufficient access to potable water is fundamental for any functioning society. Shortage of potable water in India, the fastest growing population and economy in the world, effects especially poor people in rural and remote areas. Insufficient long-term co-operation schemes,

poor maintenance and management of the water supply have a great negative impact on the livelihood and development of Kurseong Municipality. The retreat Kurseong is an educational town, with lots of students coming from large cities, with the presence of numerous residential schools. A lot of local economy is dependent on these schools and that Kurseong continues to attract students in the future. Uninterrupted water supply in schools would push the local economic development and thus indirectly reduce local poverty.

From a more direct economic perspective, the households today pay for their drinking water both with money, time and/or health. All-in-all, 77 % of the respondents in ward 15 through a field survey states that the total cost for water "is a significant part of the household budget". Water is stored in individually installed roof-top tanks and needs to be boiled, consuming gas or other fuel. Additional water can be bought from private suppliers, dealing in bottled water, or in some cases by adopting unfair means and method responsible for regulating the municipal water distribution. Time is spent on acquiring and preparing the household's water, and/or recovering from water-borne diseases such as diarrhoea, hepatitis A and typhoid. Despite the fact that the population clearly prefers having reliable access to clean water 24/7, they are not ready to pay more for the service than what they are paying now acquiring trucked water from private vendors. This can probably be explained by the cost already being perceived as high – that many inhabitants in ward 15 simply cannot afford spending any more of their money on water – combined with sound scepticism and lack of knowledge of the new system being developed by IWM KURSEONG-DARJEELING. If successful, IWM KURSEONG-DARJEELING will in the long-run free Kurseong's inhabitants from both direct and indirect costs of the current inferior water distribution services as well as unhealth and stress caused by erratic access to water of insufficient quality and quantity.

Challenges

Co-operation and communication key for success

Kurseong Municipality and Public Health Engineering Bureau are core stakeholders, or main problem owners, responsible for the water distribution and maintenance within the town and to the town respectively. Their co-operation – or historical lack thereof – is one of the keys to success. The project has addressed this by using the good-working relationship between the two institutions' representatives in the project group so that their organizations gradually have been given more tasks and responsibility. Especially Mr. Sharma of Public Health Engineering Bureau and Mr. Chettri of Kurseong Municipality have been the forerunners in this co-operation process through their engagement in the technical group. Decisions made in that group, concerning the technical pilot, have by necessity involved more staff from each institution as well as coordination. This is a visible improvement compared to the first year when the project has relied on one or two key people as receivers and local implementers. At the last stakeholder group meeting both representatives publicly acknowledged and

appreciated the other organization's effort and achievements. Doing this in front of all stakeholders, from the Board of Councillors to NGOs, is a clear and positive shift from the traditional situation. Likewise the State Forest Agency who is also one of the key stakeholders has made plans for strengthening the water catchment sources and protecting the sources by planting water bearing plants.

The project spent a lot of time in its initial phase on the internal communication, capacity building and data collection, realizing the challenge of establishing a high performing team spanning five organizations on two continents. There were apparent differences in expectations, both in terms of project outcome and allocated responsibilities, aggravated by insufficient participation and interest at the project management meetings in the beginning. This was tackled through introducing weekly project coordination Skype conferences. After six months the frequency was reduced to bi-weekly. IWM KURSEONG-DARJEELING and the project partners devoted more time than planned to balance the original strong local focus on technological solutions and hard variables, with managerial, institutional and similar soft-variables, in a documented and transparent manner. Regardless of tools and techniques, any project still needs skilled, legitimate and mandated operators. This has included attention to meeting procedures, transparent routines for decision-making, documentation and follow-up etc. Albeit frustrating at time, when certain partner felt it too rigorous and time-consuming at the expense of project execution, this process paved the way for a much higher pace in the later part of the project.

Change of project manager

From the get-go it was known that the project manager, Mr. Mattias Alisch, would have to leave the project due to lack of funds, following other obligations. Initially it was expected to occur at the final reporting and it would thus have been relatively simple to hand over the responsibility. Due to a combination of a more time-consuming first stage (briefly described in Co-operation and communication key for success above) and the increased scope of the pilot, this was not the situation. IVL thus introduced a new project member, Mr. Erik Lindblom, early 2013, at first only supporting the technical group's work. The pilot being the pivotal part of the remaining work, this decision at the same time added more resources where they were mostly needed and put the new team member in a central position with considerable freedom to act and interact. From there on Erik Lindblom was step-by-step installed as the new project manager, first internally and for Sida and then introduced externally at the second stakeholder group meeting in Kurseong, in May 2013.

Building on the project management routines already achieved by IWM KURSEONG-DARJEELING Mr. Lindblom was given the mandate to add his own experiences. Shifting project manager at this critical moment turned out timely. Despite the externally caused delays (see below), the change of project manager symbolized the start of the pilot phase, spreading the commitment in wider Kurseong circles by involving more stakeholders in actual on-the-ground activities.

Severe monsoon and political unrest caused six months tie-up

Immediately after the second stakeholder group meeting in May 2013, again a severe monsoon struck West Bengal with numerous casualties. The hilly region was in a state of emergency preparedness for an extended period of time. Even though Kurseong was mostly affected by infrastructure and property damages, IWM KURSEONG-DARJEELING lost its momentum when all municipal officials and other personnel were given other priorities.

Later the same summer the decision create the separate state of Telangana carved out of Andhra Pradesh State in southern India caused a reaction in the Darjeeling region, when locals took up an old request for a creation of Gorkhaland state, separated from West Bengal. The movement led to widespread strikes, later declared illegal and with hundreds of local politicians and others being arrested for separatist actions, or hiding. Despite all parties being in favour of IWM KURSEONG-DARJEELING as such, it was impossible to proceed with the project as long as the political decision making structure was absent.

These cumulative delays occurred when the technical design assignment for the pilot was being initiated. The process was forced to halt and took significant effort from especially the Kurseong coordinator to mitigate negative effects on the relations with the contacted consultancy firms. The IWM KURSEONG-DARJEELING management worked systematically with contingency planning and continually revised preparations to keep what momentum possible and restart the procurement process as soon as the political situation allowed for it, turning out to be in October-November 2014.

Lessons learned

Three important prerequisites for the success of this (and other) project(s) is to secure clear and solid support from the top level decision-makers, to engage all relevant stakeholders and to communicate in an unambiguous, transparent and effective way.

The obvious problem was not the actual problem. The current distribution network with bundles of pipes and hoses, leaking joints and valves, all placed in open storm-water furrows could easily be improved with immediate results in both quantity and quality, which was clear from the inception phase for the Swedish experts. Available off-the-shelf equipment, configured according to local conditions would be perfectly sufficient. Instead IWM KURSEONG-DARJEELING'S challenge was to raise awareness and commitment, to internalize the problem. For an extensive period of time the stakeholders tended to wait for the experts' instructions, probably hoping for a solution in return. One such example is quantity and quality data that were collected and reported but for a long time not analysed by the Indians themselves. With a fortunate combination of a clear long-term water vision, a successful Indian study visit to Sweden, frequent communication and side-by-side work and the Swedish experts' firm belief in

not taking over the stakeholders' responsibility for their own situation and development a strong local commitment to overcome the prevailing water challenge was achieved. In general it is has proven very valuable and efficient when Swedish and Indian stakeholders have been able to work side by side. The most tangible results are achieved on site. This is particularly true for technical advancements and similar tacit knowledge, to a smaller degree for the transfer of management skills or routines. Although longer stays require meticulous planning, in our experience fewer trips but longer stays is more fruitful. This goes both ways. Since this was discovered IWM KURSEONG-DARJEELING has adapted to this fact within the limits of the resources.

By seeing for themselves the impact on the Swedish society of potable water from the tap, the key stakeholder representatives started to translate the consequences of IWM KURSEONG-DARJEELING'S water vision into a Kurseong context. They started to "feel" the need for a true change in water resource management, not only understanding it. The Indian delegation's visit to Sweden in September 2012 thus fundamentally contributed to the regional joint undertakings for the water development. Just one month before the trip the regional elections in Darjeeling district was held and the Gorkhaland Territorial Administration became an autonomous division of India in the Darjeeling Hills. The Gorkhaland Territorial Administration political representative on water joined the delegation along with the executive Public Health Engineering Bureau's engineer and members from the municipality. A decisive feature during this week was the time they could dedicate to discussions amongst themselves, drawing from the findings from different study visits and time to reflect on their own needs. These experiences were used when planning the concluding training activity in Sweden in April 2014.

A pivotal decision for the facilitation of the stakeholder group's strong commitment was to realize the technical pilot through an all-Indian process. By not providing a "Swedish" technical design or master plan for the distribution network from Sweden, the stakeholder group was forced to commit themselves, through Kurseong Municipality and Public Health Engineering Bureau, to specifying the requirements, execute the procurement and supervise the consultant's assignment – with the Swedish partners as facilitators and advisors. This resulted in a "Made in Kurseong"-system that the stakeholders can be truly proud of, be certain that they can duplicate in the future and have the ownership of to maintain and operate.

IWM KURSEONG-DARJEELING tried to introduce Swedish technology and/or services as part of the technical pilot. A number of matchmaking events were arranged together with pinpointed project presentations for a few Swedish providers. Soon it was obvious that the technical requirements are too basic to motivate the higher costs of Swedish components or services compared to Indian. Swedish or European services are perceived as expensive. Also Swedish suppliers in water services and works find it difficult to work in India and that their participation in bids and the like does not render economically feasible.

The partner drive co-operation (PDC) model aims at facilitating long term relationships between partners brought together for a specific project. For IWM KURSEONG-DARJEELING this is the case with Kurseong Municipality and Artamus, but that relationship existed prior to the project also. The successful project has brought strong relations between the partners, with numerous discussions on possible co-operations and projects beyond IWM KURSEONG-DARJEELING. However, the nature of the partners at hand – one Indian municipality, two Swedish consultancy firms and one university – makes it difficult to formalize any long-term partnership since their financial structures and possibilities are so different. The consultancy firms primarily provide paid services at a cost Indian municipalities cannot afford on their own. With such asymmetries IWM KURSEONG-DARJEELING has had to be inventive. Kurseong has facilitated the contact between IIIEE and a school in the municipality, the Swedish consultancy firms have introduced Kurseong to Swedish municipalities and so on. This is elaborated below. IWM KURSEONG-DARJEELING has prioritized the solution to the acute situation in Kurseong before establishing long term international partnerships. This could have been clearer in the application and planning process, preferably in dialogue with Sida.

Partner driven co-operation

The approach of IWM KURSEONG-DARJEELING is to establish long-term goals, working with water as a resource and in an integrated sustainable manner. To carry out a full-scale project, building a complete safe and secure water distribution system requires external services and extensive funding. The project seeks to build long-lasting networks for both suppliers and co-operating organizations, not necessarily limited or primarily between the original project partners. A number of potential international partnerships have been initiated beyond the project, albeit not yet formalized:

- **Kurseong-Artamus:** Artamus has a strong commitment for Kurseong's continued development through its staff's personal relations to the town. Due to the increased scope and delayed execution of the technical pilot, Artamus was able to do less financial engineering than originally planned. At the last stakeholder meeting Artamus clearly and publicly declared its intention to continue to support Kurseong Municipality in this endeavour regardless the Sida-funded project coming to an end. This includes continued discussions on the municipality exchange (see below).
- **Municipality exchange:** High officials from Kurseong Municipality have met with representatives from both Skellefteå (2012) and Kalmar (2014). There are good conditions for an exchange with these Swedish municipalities. IWM KURSEONG-DARJEELING has recommended Kurseong Municipality to take a political decision on prioritized topics for international partnership in order to advance the discussions. Climate change mitigation could be such a topic, where Kurseong just entered a new

Asian network of cities. It would probably be very interesting also for Swedish municipalities. Other possible topics include waste water and solid waste management.

- **Academic exchange:** Darjeeling Polytechnic Institute in Kurseong has been discussing the opportunities for a continued academic exchange with both IIIEE in Lund and Donnergymnasiet in Gothenburg. However, IWM KURSEONG-DARJEELING's assessment is that these discussions won't reach a positive result without a supporting process keeping sufficient focus to the issue, e.g. a municipality exchange. This all depends on funding and finding mutual benefits in academic exchange. So far there has been a clear benefit identified for Darjeeling Polytechnic Institute. Marginal interest is found at IIIEE too by means of conducting joint student course assignments in India in MSc level programmes in the field of industrial ecology.

Benefit to the partner organizations

Kurseong Municipality

Kurseong and the established stakeholder group have increased knowledge and capacity. Several networks have been activated and new ones have been added. A true cross-sectorial partnership outside the initial partners of the project has been created. The established stakeholder group has expanded and has further gained valuable experiences to improve future projects on one hand and enhanced their understanding of working in an international environment, meeting the demands and requirements of a different culture and context on the other. This can already be seen in Kurseong Municipality being one of only three Indian partners in a newly founded Asian cities climate change resilience network. Kurseong is in a prime position to take the regional lead in developing water resource management which has already started.

IVL Swedish Environmental Research Institute

IVL has a clearly stated ambition to continue and increase its long-time activity in India. IWM KURSEONG-DARJEELING has provided IVL with very good working relations with Kurseong Municipality and the other core stakeholders, as well as an Indian technical consultancy firm. This will turn out valuable for IVL in upcoming project applications, knowing Kurseong Municipality's progressive, capable and efficient way of working in international co-operation projects.

IIIEE

IIIEE has gained a valuable experience in studying and analysing socio-economic systems and finding optimal solutions. It has also been a useful engagement providing an opportunity to collaborate with external stakeholders, build new networks and engage local students in joint educational program together with the students from Sweden. The analysis of the water supply

problem in Kurseong has also provided a new perspective on a range of problems that a municipality can face in providing civic services.

Artamus

IWM KURSEONG-DARJEELING has widened Artamus AB's international business network. Artamus has also strengthened its presence in the hill regions not only in India but also in Nepal and Bhutan. Through participating in different procurement processes and negotiations between the municipality and private companies Artamus has developed a unique competence in this field, which can be used in the future.

The thematic priorities

Gender

IWM KURSEONG-DARJEELING is directly addressing a fundamental gender issue by aiming at sustainable access to potable water, the corner stone of any household. Predominantly women are the users, providers, and managers of water in rural households and are the guardians of household hygiene. The socio-economic survey clearly shows that this is the case in ward 15, with 100 % of the women declaring that they are the ones "influencing the decisions how much water to buy in your household" and "determining how much water to use in your household". The fulfilment of the water vision – "*clean, clear and safe, potable water to all inhabitants*" – would significantly free the women's time, improve not least the children's health conditions and in doing so relieve the water managers from the burden of stress and unequal responsibility.

Given their long-established, active role, women usually are very knowledgeable about current water sources, their quality and reliability, and any restrictions to their use. IWM KURSEONG-DARJEELING has acknowledged the fundamental importance of involving both women and men in the decision making process concerning the future water distribution system. Women are well represented in Kurseong's Board of Councillors with 7 out of 20 seats. Also women's groups are part of the stakeholder group and participated at all stages of the project so far. To ensure that this perspective is not lost after the IWM KURSEONG-DARJEELING, "women as water managers" is included in the action plan to secure and adapt the pilot system and facilitate the up-scaling to all of Kurseong.

Environment

Kurseong's source of water is natural creeks and spring wells in the hillsides above the town. A sustainable management of the water resource requires careful and responsible stewardship of the catchment area. Focusing primarily on managerial, technical and socio-economic aspects, IWM KURSEONG-DARJEELING still has strong indirect links to a number of environmental aspects:

- **Forest management:** Historical deforestation is causing erosion, landslides and at the same time increases the run-off speed. By promoting afforestation and careful selection of plants the hydrological function of the catchment will increase. A larger ratio of the rainfall and run-off will be stored in the catchment – on the foliage and in the soil – for a longer time and water quality will improve from percolation and infiltration trough the soil. Forest sub-Division Office, the authority in charge of this, is part of the core stakeholder group and has initiated measures along these lines.
- **Preventing littering at the sources:** Today the sources are popular spots for breaks for passers-by. Lack of awareness and basic understanding of water quality causes careless littering. Also defecating wildlife pollutes the sources. The latter is hard to control, since the sources cannot be fenced due to regulations for the natural conservation area, but the littering is now addressed by information and awareness raising, possibly with positive effects not only at the sources.
- **Water resource efficiency:** An upgraded distribution network and raised awareness of the available resource will allow for less water lost, primarily through mending the abundant leaks.
- **Reducing carbon foot print and improving local air quality:** The new water distribution system will require less energy consumption and transportation. It will be absolutely based on gravity thereby minimizing use of water pumps running on diesel and kerosene. Being of drinking water standard right from the tap, the current need for boiling all water prior to consumption will end. In addition, the demand for bottled drinking water transported on trucks to Kurseong is likely to decrease. All-in-all this will save emissions of greenhouse gases from energy production from primarily fossil fuels and particles from local stoves and vehicles.
- **Reducing carbon foot print:** The new system with reduced use of electricity for pumping water ,

Democracy and human rights

It is imperative to IWM KURSEONG-DARJEELING that access to water is a global human right, which is translated to the Kurseong context in the water vision as "*clean, clear and safe, potable water to all inhabitants in the town of Kurseong*". The expressed premises for the stakeholder group is that "water is free, distribution must cost", implying that the water is a common resource. It is yet to be decided how the new water system will be financed but the stakeholder group's intention is clearly stated.

IWM KURSEONG-DARJEELING has been closely monitored by and has reported directly to Kurseong Municipality's Board of Councillors, with its chairman as the first chairman for the stakeholder group as well. Placing the project so close to the highest elected deciding local body has ensured that IWM KURSEONG-DARJEELING has progressed in accordance with the general political direction of Kurseong.

All-in-all IWM KURSEONG-DARJEELING is based on a consultative process, with the stakeholders expressing their needs and expectations on the water situation and the project's expert team proposing solutions. The main deliverables, such as the proposed strategy, technical design and action plan, have all been presented publicly at the recurring formal stakeholder group meetings, with media present for widespread dissemination. The local project coordinator, Mr. Sanjay Prasad, is also working as Kurseong's urban planner. As a municipal civil servant he has been available for questions and comments from the public in his everyday work, as has Kurseong's chairman who has been an enthusiastic spokesperson for the effort of striving towards the water vision.

The perspective of the poor and the rights

IWM KURSEONG-DARJEELING approaches water as a human prerogative and one of the criteria to select Ward 15 as a pilot ward was the over-representation of inhabitants below poverty line. Reducing water leaks and seepage into the distribution pipe will reduce the risk of water contamination and the run-off of contaminated water leaks which ultimately reduces the risks of water-borne diseases. Moreover, reliable water supply frees time for women to engage in other more important activities such as better child-care, employment or self-development.

The pilot is aiming at providing a reliable supply of safe water 24 hours a day, consequently if maintained in a sufficient way the socio-economic situation will improve substantially. Virtually any improvement on society requires basic access to potable water, be that social development e.g. health or improving the economy by e.g. increased business opportunities and protection of environment e.g. adaption to present eco-system. On-going discussions will decide how to establish water user charge fee system that includes water supply to the poor.