REPORT

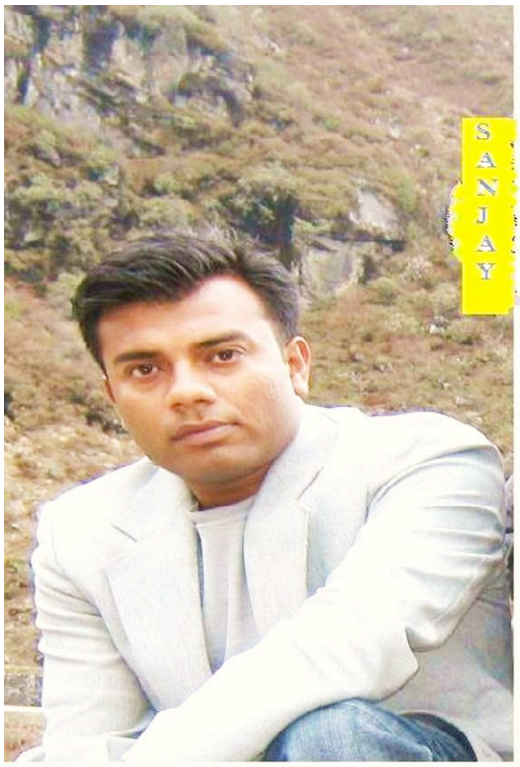
FOR

PLANNING PHASE

WATER MANAGEMENT STUDY

IN KURSEONG, DARJEELING DISTRICT, INDIA

2010-2011



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I am working in **Development Sector** for the last 8 year and having work experience in Urban Planning, Urban Services for Poor, Human Resource Development, Man Power Planning, and Personnel Management. Have sound knowledge in **handling psychosocial aspect of Human Behavior.**

Content

1. BACKGROUND

Strategic spatial planning - a new planning approach for Kurseong Municipality

For a long time Kurseong has undergone multiple transformation processes at the same time: from British ruled to a socialistic society - managed by state institutions; from single dependency on tea producing industry - which are the 'owners' and the 'only' private investor in the communities in the hills - to privatisation and de-colonisation; a large population growth; influences of religious globalisation and not at least conflicting political fluctuations. New tendencies of promotion to develop a more differentiated market economy being accompanied with challenges of interpreting new institutional and legislative framework are now contemporary challenges.

This basic socio-economic and political change has had an influence to the planning system, asking for innovative ways of managing existing spatial developments and challenges e.g. ad hoc and uncontrolled developments of basic infrastructure, environmental degradation, and meagre management of means. It further entails lack of resources, assets and infrastructure as well as lack of new investments targeting further economic development. All in all this is resulting in high rate of unemployment and continuation of poverty and bad health.

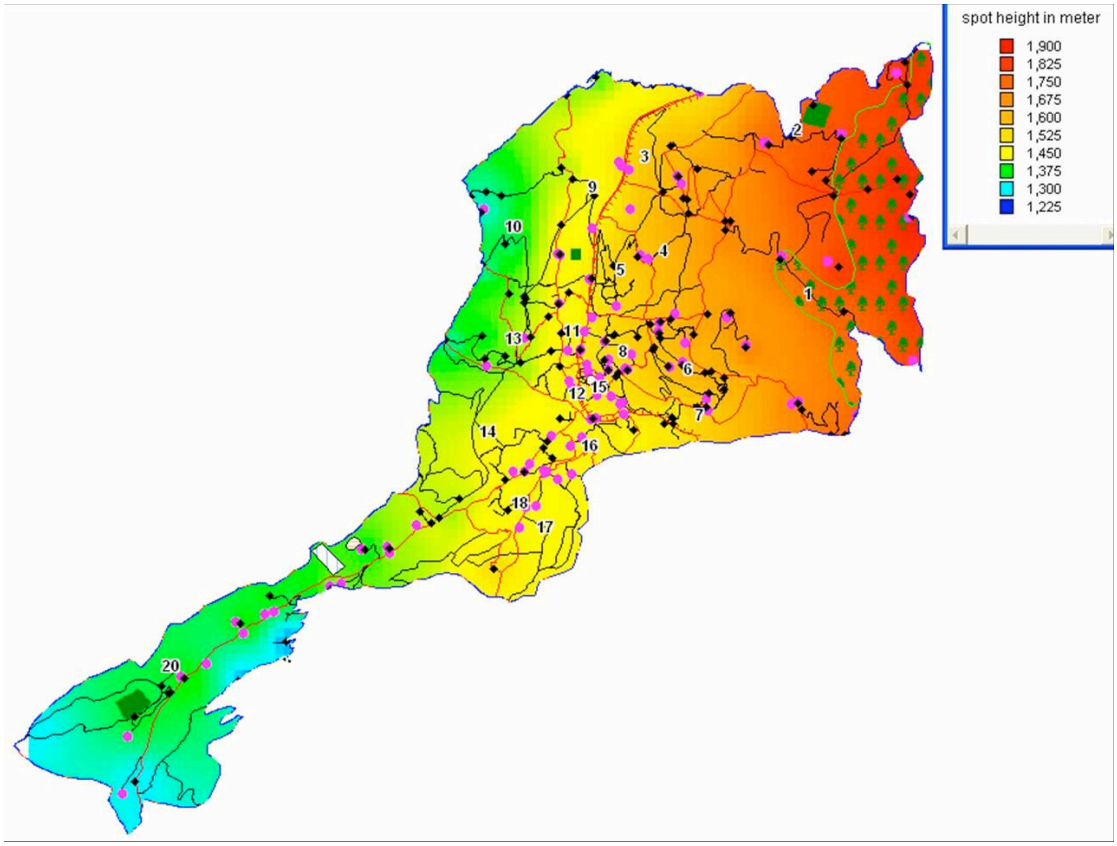
Together with an imperative need to manage these challenges, the new approach of *strategic* spatial planning has been introduced to Kurseong, by UN-HABITAT and SIDA programmes. Planning in this approach is flexible and open to the present developments taking into consideration priorities of different actors and sectors, especially with the purpose to direct investments and orient planning towards a more inclusive and participatory approach.

The innovative strategic planning practises pay special attention to the promotion of principles of sustainable development and *integrated* planning approach including elements of relationships in mobility, economic development, social, environmental and other strategic policies for the municipality. Moreover application of the good (urban) governance customs to the planning process, such as useful involvement of civil society and other stakeholders in the planning process, transparency and decision making, inclusiveness and wide public participation, and taking into account the equality aspects: minorities, women, children, the elderly, disabled persons and addressing needs of such groups through public participation.

Setting up a new inclusive and strategic planning approach in Kurseong requires working at central and local level of governance, engagement of civil society organizations and community, development of new planning legislation (i.e. the spatial planning laws), intervention in organisational structure and applying new planning practices and tools.

A demand for building capacities at different governance levels is high. When evaluating the application of this approach in Darjeeling district in general and Kurseong institutions especially, there are still mayor challenges ahead.

A study that derived from the Kurseong planning process, the Kurseong Development Plan 2008/09-2012/13, has shown that municipalities do not have enough capacities to manage this planning approach with its requirements. The recommendations include the need for continuation of working in three areas of capacity development: human resource, organisational and institutional development. In a given situation, supporting municipalities with on-the-job advice and professional expertise with applying the method of 'learning by doing' form a basis of an alternative approach to solving the issues mentioned above. This is an approach that many Municipalities in the neighbourhood of the EU are applying through different Regional/Municipal Spatial Planning Programmes and where Sweden can play an significant role to transfer best practice.



Kurseong Municipality – Placed in the Hills with an altitude difference of 600 metres

2. ANALYTICAL COMMENTS FROM THE VISIT

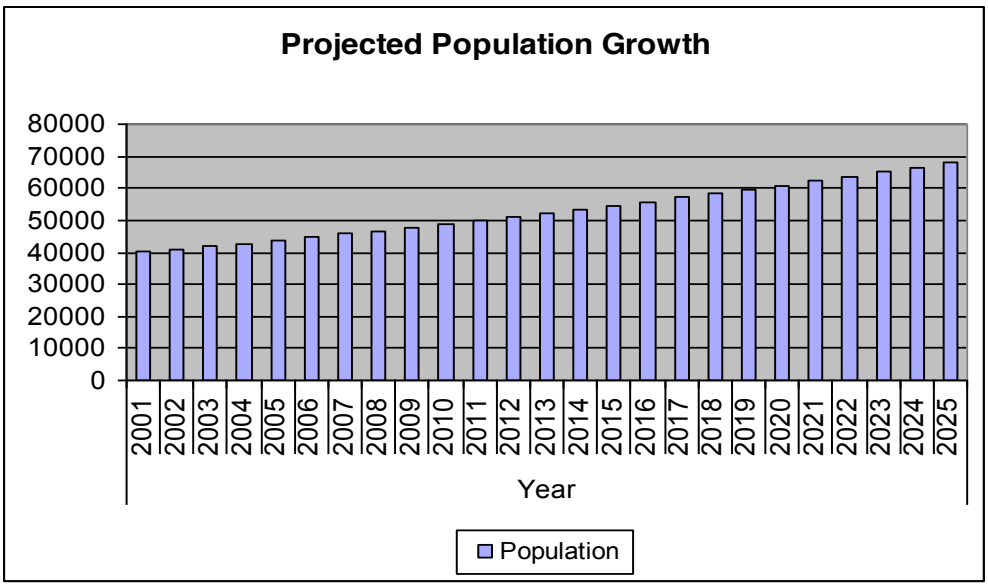
On the 14-19 April 2011 a three-person team of experts from Sweden in spatial development and water management issues visited Kurseong Municipality to meet relevant Stakeholders to the water problem that the municipality is facing (see further Concept Note). The study-visit was implemented after a genuine expression of interest from the Municipality to get external assistance on how to come across the issue. About 50 persons where interviewed and discussed with.

The study visit was made possible by 50% of the means coming from the Municipality of Kurseong, Artamus AB, IIIEE in Lund, rm2rm sl and 50% from the Indo-Swedish Facility for Environmental Initiatives and Innovations ('The Facility'), set up and financed by the Swedish International Development Cooperation Agency (Sida). The Facility is a mechanism for joint environmental co-operation between Indian and primarily Swedish partners. The mission of the Facility is to evolve best practices through knowledge sharing and mutual learning between primarily Swedish and Indian public institutions, the private sector, civil society and research and academic institutions.

2.1 GENERAL FACTS AND FIGURES

Population of Kurseong estimate in 2001 was ca. 42,000 inhabitants. Current (2011) estimate is ca. 50,000 following the annual population growth rate. Population fluctuates with ca. 10,000 daily visiting schoolchildren from the surrounding villages. It is estimated that there are ca. 9,000 households (ca. 4 persons/household). There are approximately 9,900 people living in slums, i.e. around one fourth of the total population.

Municipal budget: ca. 250,000,000 RPS/year.



2.2 WATER SITUATION

Before 1980 the situation with water supply in Kurseong was characterised as good. However, during the last 30 years, the water supply and management system is in constant decay. The main man-made reasons are lack of maintenance, which is due to the lack of funds and due to population growth. Climate change is believed to be the main reason for reduced rainfall, which is important as the main sources of water are perennial. Furthermore, relentless deforestation has aggravated these effects by reducing water retention in the hills and contributing to increased number of severe landslides. Deforestation issues are within the domain of the State Forestry Department in terms of control, monitoring and enforcement. However, the department does not seem to effectively exercise their duties seeking to avoid conflict with the local population and avoiding further political agitation.

The current water source is mainly perennial (rainfall) and water free-flows after being collected from running surface water bodies. The sources are outside the jurisdiction of Kurseong and are the responsibility of Public Health Engineering Department (PHE), which is subordinate to the state (county) level authority. The PHE department is responsible for the extraction and the delivery of potable water until the municipal distribution network. Water distribution is the responsibility of the Municipality.

Currently water supply through the official municipal water utility system is about 10% of the required per capita demand. The capacity of the collection network is undersized and underutilised. At a visited collection point the team observed an instalment for water collection, which took up less than 5-10% of the available flow. The transmission pipes are filled only up to 50-75% of the diameter owing to the nature of water collection and the free flow of water.

Uncontrolled tapping and water losses in the delivery and distribution networks further aggravate the shortage of water supply. A widely known fact is that pipe fitters are cheating the system by taking bribes for making an illegal connection. Currently, the pipe fitters are permanently assigned to their wards, which makes them well integrated into the local communities and thus having difficulties exercising their duties of monitoring water use and reporting abuses.

The system also ***leaks*** through bad connections and abandoned pipe loops. Water losses in the piping are officially estimated at 5%, however, this seems to be an underestimation and a more realistic figure reported by some of the interviewees is closer to 50%. The network has not been properly maintained for the last 40 years, excluding some patch-work projects and new elements of the infrastructure. Some infrastructure elements such as pressure filters, siltation tanks and debris screens have been installed on various occasions with the support of the state and/or the central government. However, these were one-off projects without adequate system solutions such as securing maintenance.

The municipality did not find the internal resources to collect funding to maintain the system. As a result, the infrastructure decayed in a matter of a few years, which severely affected water supply rates as well as water quality.

There is no ***metering system*** of water consumption. The actual water consumption/capita is not known or at least there are no reliable estimates. Current municipal estimates are based on governmental recommendation of daily consumption at 135 litres/cap (Sweden about 190 litres/cap.). Exact figures of how much water is used are unavailable as there is no real metering of water usage at any point of the entire water network (the supply and the distribution). The only water log seems to be the daily estimates by PHE at the accumulation tank of how much water was supplied. This information is available only during the dry season when the accumulation tanks are functional.

These estimates are done by means of measuring water level in the tanks and calculating the volumes using the surface area of the tank. A water-user log exists where volumes of water are attributed to large official users including companies and public organisations; however, how the volumes are attributed to each user remains unclear. Water is also not evenly distributed across the town with some districts (wards) having a considerably more limited water supply than the others.

The ***economic organisation*** around water utilities remains unclear. The majority of households do not pay any fee for the use of water. Out of ca. 12-15,000 households, only 1,900 are formally registered as water users. Conflicting messages were heard. Some interviewees stated that there is no monthly (flat rate at 350 RPS/quarter) fee for water use, only the one time water user registration fee (3,000 RPS). Others stated that the registered users are paying a monthly rate. The true situation according to our own interpretation is that the latter situation is more likely; however, there is no de facto payment of the fees for the last 40 months, which is largely attributed to the on-going political unrest and the prevailing dissatisfaction about the quality of water services in terms of regularity, availability, quantities and water quality. The municipality seems to do little to enforce the collection of the fees.

None or very few of the industries or businesses are paying for water. [1]

Messages here are also conflicting. The industry representatives stated that they are paying the required fees and would be happy to pay more if the quality of water services would be improved. In fact, all industries are paying market prices to private water delivery services. This is a lost opportunity for the municipal budget.

The share of the private water market in total demand has various estimates – from 50 to 90% for the industries and from 25 to 50% for the households (current price: ca. 200-300RPS/m3). According to the tax collection office at the municipality, the owners of the

[1] There have been statements heard such as: "*The three large tea estates (industries) are not paying for water and are using it for free.*"

newly registered houses are ready to pay for water if the supply and the quality are improved.

There is a clear divergence between the municipality and the PHE department on one side and the rural population living outside the jurisdiction of the municipality. The main point of conflict is uncontrolled tapping of the water mains in the network that is under the jurisdiction of PHE.[2] The position of the rural people is that no one seems to be responsible for water supply to them and that the scarce water is being sourced from the sources located in their neighbourhoods. The position of the Municipality is that the responsibility of rural water supplies lies at PHE and the Rural Department.

Since the rural people are not formally registered water users and resided outside the jurisdiction of the municipality, they have no right to tap the water. The municipality does neither have the procedure nor the mandate to monitor and enforce illegal water tapping. The PHE department seems to have an interest and the prerogative in this issue but it was not clear to what degree and to what level of effectiveness the PHE is exercising their duties.

Frequent ***landslides*** are another issue disrupting water supply from the hills. One visited collection point had not been operational for two years due to a landslide. The PHE explained the delay by the fact that since the local population were illegally tapping the water, no decision to re-connect the supply pipe had been made. This situation can be interpreted in relation to the background of the described acute situation with water scarcity in the town.

Broken pipe by landslide

Repairing the damages both takes time and requires significant funds for the PHE department. Currently, there is a complex system of inspecting the damage, preparing and approving a reconstruction project, acquiring the funds and fixing the damage, which all take

[2] It is estimated ca. 200 uncontrolled connections before a catchment source (this is an example of one main water pipe from a source to an accumulator ca. 25km distance).

several months. The newly modernised project approval system is likely to ease this process though.

The main ***water quality*** issues are high organic content, high E-coli counts, which are increasing downstream, and high content of iron and lead, which are most likely originating from the piping itself. The high E-coli counts are also due to possible infiltration of sewage water.

There are three water quality analysis reports available that have been done within the last 5 years. They are the *only* known analyses available. Regular schedule for water quality control is neither exercised by the municipality nor by the PHE department. Seemingly low price of water testing (ca. 900 RPS/sample for inorganics and a standard set of chemical criteria by government and 1,400 RPS/sample for micro-organisms) taking just three days is not affordable under current budget conditions.

There is no ***waste water treatment plant*** (WWTP) in operation today. There has been a simple WWTP in form of simple settlement tank, but it was not maintained and turned non-operational years ago. Currently, there is a ready project prepared and a state budget (120,000,000 RPS) assigned for a waste-water treatment plant to be commenced in 2011-2012.

Pipes and Waste along the shoulder of the road

2.3 PERCEPTIONS OF BUSINESS STAKEHOLDERS

The visiting team met with 15 representatives of the business community representing the major economic actors in the municipality. The stakeholders have clearly expressed their dissatisfaction with the water situation. Many consider it a serious threat to their business.

The water supply through the municipal system is not sufficient, irregular and unpredictable. To compensate the shortage the businesses are turning to the informal commercial actors and purchasing water at ca. 200-300 RPS/m^3.

The typical consumption of e.g. one of the three large tea estates is ca. $3m^3$/day (that is 600 RPS/day). This can be considered as a lost "business opportunity" for the municipality. The size of the parallel water supply system run by the private suppliers is at a comparable, if not equal, magnitude to the municipal one.

The business community agrees that water metering is necessary and a pay-per-use system is possible and desirable if organised in such a way that the trouble of ordering the lacking water and administering the purchases is avoided though a municipality-organised system. The stakeholders also acknowledge the equality problem – not everyone can pay for having water meters. A solution would be a differentiated tariff system by user category (Below Poverty Line rating or similar) with businesses ready to "subsidise" the system through higher tariffs for commercial water use vs. lower tariffs for "domestic" applications.

The business community has a strong perception of the municipality as being weak in governing, administering and enforcing the rules and regulations: "…*Municipality has limited authority in Kurseong to control water use*". Little to no punitive actions have been ever taken against water misuse. The result is: no action – no effect.

Very important observation was that there is poor to no communication between the municipal authorities and the business actors. The meeting between the municipality, PHE and business community organised during the team's visit was the first ever. The initiative was highly appreciated and accepted as desired. Further engagement of the business community into talks with the municipality depends heavily on the activity of the latter.

The business stakeholders have expressed a strong and clear opinion that different kinds of joint ventures with the municipality are possible in the water utility sector. Public-private partnerships are known in the region but are not being practiced yet.

2.4 PERCEPTIONS OF NGOS

The team met with the local NGOs working in the areas of poverty alleviation and development. According to NGOs' perceptions, the rural situation is not uniform – there are "pockets" of good and bad stories in managing utility services and development projects. When it comes to water supply and services, the situation is particularly fragmented , and the situation can be described as generally bad, but there are good examples.

Communities that are successful in raising the quality of utility services are those who have good self-managing structures and those that have the ability to mobilise the internal resources. Often, but not solely, adequate financing of utilities is the big problem. Good mobilisation of internal resources for self-organisation plays an important role. It seems the ability to solve local problems, including water supply problems, lie within "*somaj*s" – the local self-governance structures on the very grass root level. Thus there are active and

engaging and energetic people who are able to establish a link to the authorities and placing themselves in a position to demand and get a response?

NGOs are trying to assist the local community development process through different collaboration schemes.

2.4.1 THE "CHAI" PROJECT – ONE WATER SUPPLY PROJECT (NGO FUNDED BY MERCYCORPS)[3]

The project helps local communities to build their own water supply systems utilising local water sources. The project includes building filter system (pebble-sand filtration with suspended solid precipitators), accumulation and distribution tanks, supply and distribution lines. The developments are financially totally independent from authorities.

Typical parameters:

Capacity: 3,600 l/day (9 households). 1 hh = 4-9 people. Effect capacity: 80 L/p/d.

Financing scheme: 60/40 (NGO/local community). Typical total costs: 16,000,000 RPS.

The NGO contributes with staff time and building materials, the local community contributes with cash for building materials and labour.

Result: sufficient good quality water is made available. The NGO checks water quality parameters before finalising the project (certified laboratory tests). During the past 9 years ca. 250 households served with water and 600-700 latrine projects.

2.5 MUNICIPAL STRATEGIES

The municipality has done considerable work in mapping the existing situation with water supply. There are estimates and assessments available including overviews of current water extraction and distribution networks including the layouts of major piping networks and the locations of major water users. However, the municipality does not seem to have a ***common vision, strategy and action plan*** for the future that is made known to and shared by the main stakeholders.

[3] URL: www.mercycorps.org

Regarding the situation around the water management system, the prevailing perception is that the municipality suffers from water scarcity, which is due to climate change and deforestation. From all interviewed stakeholders one clear message was heard: "we experience water shortage and suffer from dwindling water supply". No alternative other than the perennial sources currently exists. Therefore the major solution became to pump more water from the nearby rivers. The municipality is commencing a project to build infrastructure facilities for pumping up and treating water from the existing rivers as a solution to secure water supply.

The ageing distribution network is also acknowledged as a problem along with the uncontrolled tapping and a water utility management system in disarray. However, the majority of the interviewed stakeholders often voice the latter issues as of less importance.

Pipes are not dug down under ground, which has several implications such as less control, easy risks for damages and conflict with additional land use planning.

2.6 CONCLUSIONS

The main overall observation is that the municipality suffers from a lack of *long-term* ***vision, strategy and joint action*** among different municipal departments. There is also lack of cooperation with state authorities and/or other municipalities and all utilizes. There is neither the tradition nor any recent practice of inter-municipal co-operation in the region. For small municipalities lacking internal budgetary resources, appropriately number of skilled staff and knowledge capacity, regional co-operation is the chief solution to run different municipal projects and services. There seems to be no tradition of ***cross-municipal cooperation*** in Darjeeling District including Kurseong in the water issues. The municipal representatives are meeting and discussing current issues, but do not seem to hold discussions on joint-action solutions that could include possibilities for joint utility services.

The other generic problem in the municipality is its ***insufficient governance.*** Owing to the existing administrative structure of India, municipalities in general have relatively little power and practice in terms of tax collections, running municipal services and providing social care. Most of the municipal budget comes from the state level authorities, which is systematically below the actual needs.

Taxes that the municipality can collect (utilities, property tax), are low and have a mere symbolic value. Moreover they are not collected at satisfactory rates.

There are deficiencies in the internal organisation as well although these were not addressed during the visit. For example, the municipality had no internally *integrated* structure to cope with unexpected events and natural disasters. Landslides frequently disrupt roads and water pipes. The landslides in turn are caused by deforestation actively carried out by the rural population, due to lack of employment and other income opportunities. Repairing the damages used to take considerable amount of time and demanded a series of

tedious administrative procedures including an application to the state budget. Only now, the municipality is reorganising by creating a disaster management department, to cope with such difficulties.

There also seems be a general lack of incentives for the municipal employees to engage in proactive measures.

Similarly, there is a lack of incentives for the inhabitants to co-operate with the municipal authorities on various issues including waste management and water utilities. There is a feeling that the municipality is not an integral part of the community but an artificial creation on the side (regardless the very high public engagements in elections, approx. 84%).

When it comes to water utilities, the municipality is in the position of being able to charge for water services and potentially run their own budget for daily operations. There is probably still a need to ask for support from the state or the national government for larger investments. Nevertheless, the municipality does not maintain a functioning water administration system, i.e. neither collects the adequate funds, nor runs the system at a basic satisfactory level.

The prevailing perception is that the problem with water has its roots primarily in climate change and deforestation. The inefficiency of water harvesting, storage, long distance delivery, local distribution systems and lack of demand structures is perceived as a secondary issue. The main strategic solution for the water supply problem is to pump more water from the nearby rivers. The inefficiencies in the water distribution networks are by no means seen as an "untapped resource".

The interviewed stakeholders place a clear weight on alternative water sources and technical solutions such as pumping up the water from the Balasun River.

That is to pump more water into a technically inefficient distribution system that is managed by a poorly organised governance structure without adequate collection of funds for the services. However, for the current and the near future demands (regardless the limitations of climate change and deforestation), the natural water scarcity is a serious issue, but there are resources to be used at the end users side – that is reduce the inefficiencies of extraction and distribution systems.

Kurseong may have a natural pressure of limited perennial water sources due to the climate change, which is especially expressed during the dry season. However, overall, the natural water resources are large and with better-designed infrastructure they could be better made available for the people. By "more well-designed" we mean a system that has following features:

- ⇒ Sufficient capacity for sanitarily safe water storage during the dry season;
- ⇒ Effective water capture from the available extraction points;
- ⇒ Efficient delivery and distribution with minimal losses;

⇒ Water saving measures practiced by the users.

⇒ Integrated system for rural and urban water usage.

There is no practice of municipal companies. The idea of PPPs seems to be known, there is an interest in exploring it, but there are no known examples yet.

2.6.1 OVERALL IMPRESSION

Water is always voiced as an acute and number one problem in the region. Everyone seem to acknowledge it, but the municipality does not seem able to prioritise it sufficiently enough to ”walk the talk” by doing everything in their theoretical power to provide water (whatever quality). There is a lacking decision support system.

Example: if water was in high demand and an acute issue, it is unclear why the municipality (or PHE) are taking all actions in their power to maximise the use of the available resources and infrastructural assets. The capacity of the network is underutilised in the example of the collector pipe idling for 2 years.

There seems to be a lack of political will and support and a high degree of hesitation to introduce tariffs for the municipal services (even though there could be a marginal willingness to pay). Utility tariffs seem to be the only available source of funding that the municipality has a power to acquire and control. So far the municipality is totally dependent on the budget provided by the WB State, which has been chronically insufficient even for the basic services such as water.

2.7 STRATEGIC DIRECTIONS FOR REMEDIAL ACTIONS

⇒ Secure clear, firm and consistent administrative and political support for the initiatives.

⇒ Put more efforts into internal re-organisation with the goal to improve internal administration system, optimise inter-departmental communication and co-operation, and learning by examples.

⇒ Put more efforts into improving the contacts and the relationships with the key stakeholders; involve them into discussions and decision-forming process in order to secure a better consensus and long–term support for the planned actions.

⇒ Improve communication to the public and try to better involve the public into decision-making processes; put emphasis on problem and solution ownership by the public.

⇒ Put more efforts into raising internal capacities in terms of training and raising administrative and professional competences of municipal staff.

⇒ Optimise the budgetary aspects around public utilities' services (tax collection process, tax allocation, monitoring and control, ear-marking the taxes, etc.)

⇒ Consider engaging other actors (e.g. local businesses) into PPP structures; explore the willingness of the private actors to participate in joint implementation projects.

⇒ Avoid hasty and one-off solution; structure the activities as a step-by-step work with regular progress evaluations and corrective actions in this iterative process.
Suggestion: create a pilot project in a single ward (poorest) and make it into a public example.