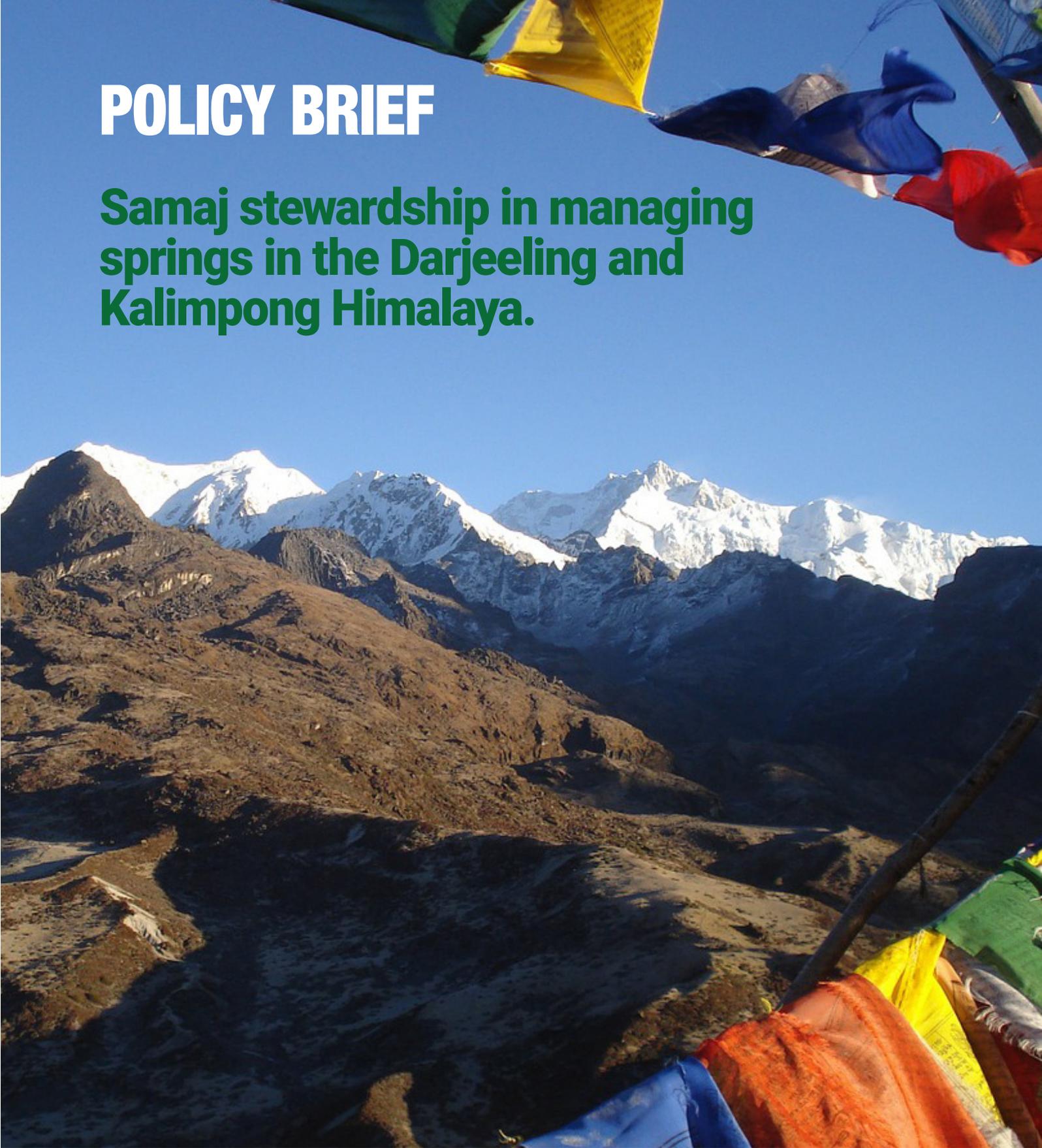


POLICY BRIEF

Samaj stewardship in managing springs in the Darjeeling and Kalimpong Himalaya.



Ministry of Environment,
Forest and Climate Change,
Government of India



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BACKGROUND

Located in the north-eastern part of the IHR are the Darjeeling and Kalimpong Districts (26.02 - 27. 13 N and 87.59 - 88.53 E; Area: 3,263 km²; Elevation: 92 m – 3539 m) occupying 3.68 % of the total area of West Bengal (Pradhan and Bhujel 2000). Darjeeling and Kalimpong Himalaya is part of a transboundary landscape adjoining Nepal in the west, Bhutan in the east, Sikkim in the north. As part of the Eastern Himalaya included among Earth's biodiversity hotspots (Myers et al. 2000) the Darjeeling and Kalimpong Himalaya is of critical ecological importance. Darjeeling Municipality was established in 1850 and is one of the oldest municipalities in India. The municipality in 2011 had a population of 120000 living in 13.81 km². Kalimpong is the district headquarter with a population size of 49,403 (Census 2011) and spread over 23 wards in 3.5 km². The town centre is located on a ridge connecting two hills, Delo and Durpin at an elevation of 1247m and 1704m. The River Teesta flows in the valley below separating Kalimpong from the state of Sikkim. The town is a major hub for the agricultural communities of the sub-division and used to be the gateway to Tibet.

In Darjeeling town, the water supply system consists of tapping 26 springs from the Senchal Wildlife Sanctuary located about 15 km away from the main town into two reservoirs, from where it is distributed by gravity through a combination of pipes and tanks across the town. However, Darjeeling currently is in a state synonymous with 'water crisis'.



APPROACH

Urban springs of Darjeeling and Kalimpong municipalities were chosen to study community adaptive practices around water and climate change. Careful consideration was taken to ensure geographical representation within the municipal landscape while studying the springs. Lanku, a rural site, was chosen as it was one of the key successes in spring-shed management in the Darjeeling and Kalimpong Himalaya. An extensive review of literature on water, climate change and other relevant issues from the study sites was carried out. A workshop with stakeholders and key informants was also facilitated to give direction to the study. Subject experts were interviewed that gave insights into issues of water and climate change.

Once the study sites were identified a combination of 16 semi-structured interviews, 2 focus group discussions and transect walks were undertaken. The semi-structured interviewee selection factored in diversity of people accessing the spring water. Water flows, discharge rates of 9 key springs were also documented. A core group of members of the Darjeeling Himalaya Initiative brainstormed the processes and development of the study as well as analysing the data emerging from the study.

The study was conducted during the months of September and January so as to have better understanding of the availability and the demand of water supply. Standard data are not available as no records or tracks were kept of the springs visited so far as there has been no intervention taken. The communities interviewed are from the different part of Darjeeling and Kalimpong as shown in the table :

No	Name of spring	Location	Ownership	Possible recharge ownership	Households dependent (approx)	Status
1	Jore Dhara	Dungra Busty, Kalimpong	Private Land	Private Land	500HH	Decline in discharge
2	Park Dhara	Ward no.19 Kalimpong	Govt	Govt	150 HH	Decline in discharge
3	Sub-edarney Dhara	Damai Tar, Kalimpong	Private Land	Private Land	80 HH	Decline in discharge
4	Raja Dhara	Bhutan house area, Kalimpong	Bhutan Govt	Bhutan Govt	100 HH	Decline in discharge
5	Pari Dhara	Block C, Homes area, Kalimpong	Private Land	Private Land	80 HH	Decline in discharge
6	Hart Spring	Homes, Kalimpong	Private Land	Private Land	3000 population	Decline in discharge
7	Lal dhiki dhara	Lal dhiki, Darjeeling	Govt Land	Govt Land	25,000 population	Decline in discharge
8	Mangal Puri	Mangal Puri, Darjeeling	Govt Land	Govt Land	200 HH	Decline in discharge,
9	Giri Dhara	Below Darjeeling railway station, Darjeeling	Govt Land	Govt Land	-	Decline in discharge
10	Mul Dara	Mul Dara, below Chowrasta, Darjeeling	Govt land	Govt land	300 HH	Decline in discharge
11	Jowahar busty	Jowahar busty 2 Below tungsung, Darjeeling	Govt Land	Govt Land	300 HH	Decline in discharge
12	Birsing Dhara	Lanku Khasmahal, Sittong, Darjeeling	Private Land	Private Land	60 HH	Decline in discharge
13	Gokul Dhara	Lanku Khasmahal, Sittong, Darjeeling	Private Land	Private Land	70 HH	Decline in discharge
14	Saroj Dhara	Lanku Khasmahal, Sittong, Darjeeling	Private Land	Private Land	70 HH	Decline in discharge

COMMUNITY BASED MANAGEMENT AS ADAPTATION PRACTICE

Of the 14 springs that were surveyed as part of this study across Darjeeling and Kalimpong Himalaya, 7 were in private landholding, while the rest were located in Government owned land, mainly that of Forest Department. However irrespective of land ownership, all springs are managed to a large extent by the community in many cases the local Samaj, mainly from a distribution and access point of view.

The management of the spring discharge, Laldhiki, Mangalpuri, Muldara, Jowahar Busty and Giri Dhara, studied in Darjeeling Municipality shows the stewardship and the diversity and management systems adopted by the samaj, in managing access and distribution.

In the face of climate change and the overreaching implications it has on springs and water flow, these community-based management interventions are good examples of best practices. However, these decentralized systems of management most often go unrecognized in larger discussion spaces around water, and there is an urgent need to document, further strengthen and include them in the water discourse.

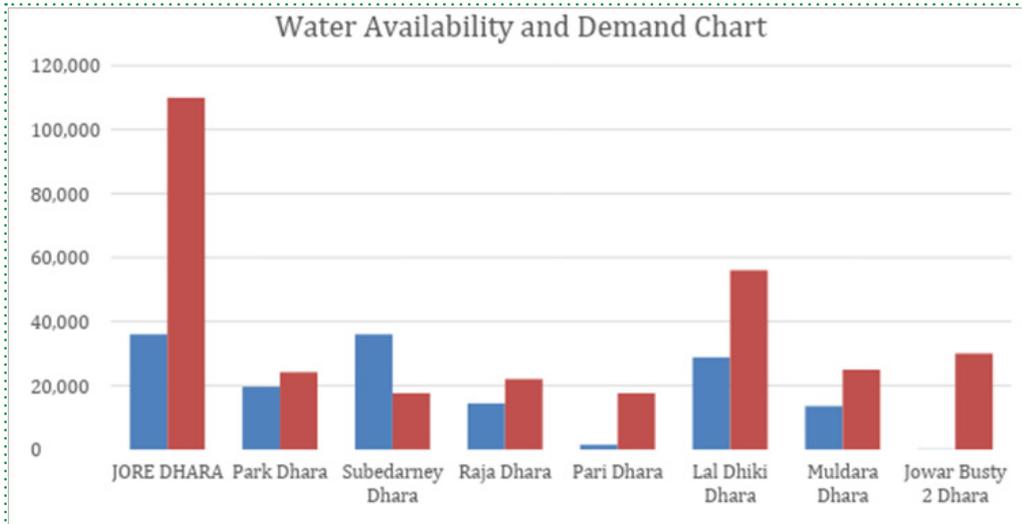
FINDINGS

A report by Kalimpong Sangranchan Samity and Gorkha Dukha Niwarak Samelan, 2012 states that water has been supplied to Kalimpong through a system from the British times. The inadequacy of water supply necessitated the Neora Khola water project. 'Kalimpong requires about 10 lakh gallons of water every day and half of the need is met by the Neora Khola scheme.' (The Telegraph 29 September 2015). This situation means that the town has a water deficit of 3,00,000 gallons per day and similar to Darjeeling does not account for the urban springs of Kalimpong.

Upper Lanku, located under Gram Panchayat Unit Sittong III of Kurseong Block District Darjeeling lying between Latitude 26°57'01.6", Longitude 088°25'09.1", Altitude- 727.5 mts above sea level. The village lies close to the NH31A above the River Teesta and the forests surrounding the village are under Kurseong Forest Division and are contiguous with Mahananda Wildlife Sanctuary. Upper Lanku has a population of around 450. Agriculture is the main source of livelihood for most of the village, with a small population engaged as labourers and in Government service as well. Erratic rainfall pattern, no irrigation facility and drying up of natural springs have perilous effect on socio-economic life status of Lanku Valley.

The community of Upper Lanku depends on three springs, Saroj Dhara, Birsing and Gokul Dhara for their water. Community narratives talk about how all three springs in the village have shown a declining trend in its discharge over the past 10 – 15 years during the winter months of November – March during which time the villagers face serious water scarcity. WWF-India and Lanku Valley Biodiversity Conservation Committee worked together to increase the discharge of two springs through groundwater recharge by reducing surface runoff thereby resulting in overall landscape level improvement in water availability in the springs as well as streams in lean seasons.

A quick analysis was also done to understand the water demand of 6 springs in Kalimpong and to match that with the water that was available from the spring flow. The water demand was calculated by the approximate population dependent on the springs and their daily requirement, while the availability was the amount of water that was flowing from the spring in 24 hours.

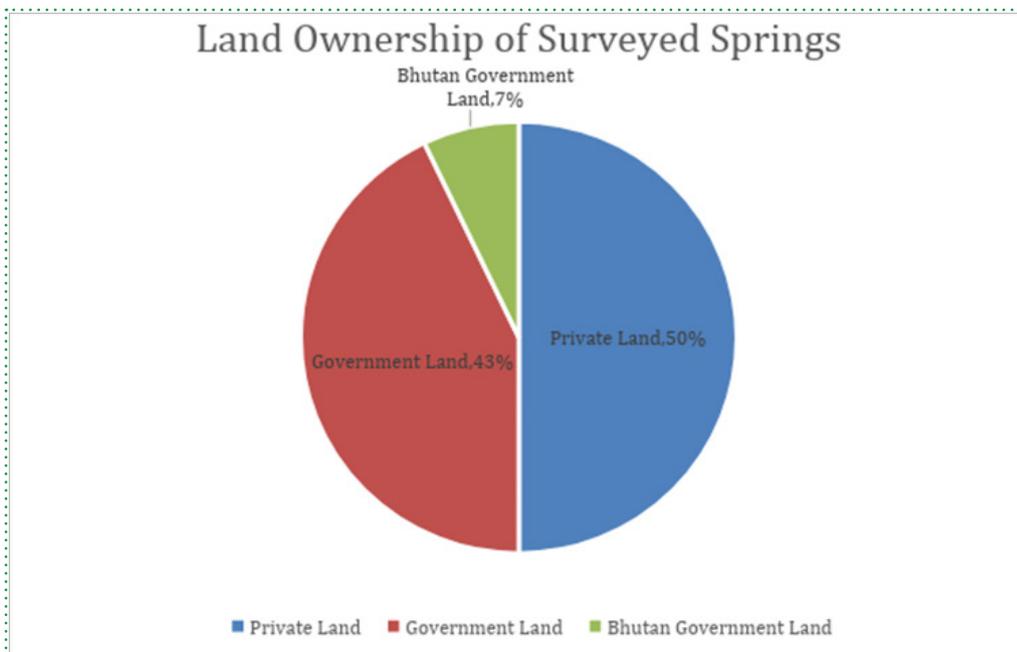


The blue bar shows the availability of water/day and the maroon bar shows the demand of water/day (source: Data collected from field visits)

As clearly seen, almost all the communities surveyed showed disparity in the water that was

available from the springs and the water that the households required for their daily needs. This does not take into account the piped water supplied by the PHE Department, which was in most cases reported to be negligible or the community did not have access to it.

WHAT DO YOU MEAN BY BHUTAN GOVT LAND?



The Land ownership chart shows the ownership of the land where the springs are located.

There is no description in the findings on the “Samaj”

RECOMMENDATIONS

- The community based or Samajas water management system should be strengthened as they are the ones who uses the springs and has been looking after it for a very long period of time and who can locally monitor the discharge and the conservation part of it.
- Technical know-how of the samajas must be upgraded on the basis of both the knowledge and skill on conservation techniques as it's the primary thing for the sustenance of the intervention.
- Spring conservation activities must be taken up by the administration as it is the primary infrastructure required for the sustainability of the community development.
- Mapping of springs and the recharge area must be an important component while planning for the development of different infrastructures in the Himalayan Region.

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