

## **‘Dhara Vikas’ (Rejuvenation of springs) in Sikkim, Eastern Himalaya**

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Sikkim is a small state in terms of land area and population, it however experiences high variation in temperature and rainfall, its populations are acutely sensitive to changes in the availability of water which immediately impacts livelihoods and health, and these affect the adaptive capacities of rural populations to poverty, environment and connectivity. According to Sikkim's State Action Plan on Climate Change, the changes in climate over a long period of observation indicate that the weather patterns have become unreliable. The autumn season has extended and winters have become dry. Extreme climate events have become more frequent. Further, rainfall patterns have become erratic, monsoons are usually late and in general torrential rainfall has replaced the monsoon drizzle. This has increased surface run-off and dry periods during winters, resulting in a higher incidence of forest fires and drying up of springs - discharge of springs has reduced and many of them have started becoming seasonal.

Sikkim has been engaged in a number of climate-related initiatives since 2008. The Dhara Vikas (rejuvenation of springs) is one of such programmes which was launched in the year 2009 and have playing a significant role in bringing the water security in the region. The programme's works were designed to minimize surface runoff, particularly on hill slopes, using man-made trenches and ponds. These simple structures allow water to percolate into the ground and recharge the aquifer beneath, from which the water flows out as springs. Consideration and incorporation of the traditional knowledge and practices in this programme helps in enhancing the resilience of local communities and encouraging their adaptation to the effects and impacts of climate change and climate variability.

The maintenance of and application of traditional knowledge is essential for such resilience. The 704 springs that are listed in the Sikkim Springs database, with their 148 gram panchayat units in 26 blocks (for all the four districts of the state) are the main sources of water for rural households. These take different forms and names: '*dhara*' is mountain stream and '*khola*' is a stream while there are also '*pandhera*' (pool or fountain), '*kuwa*' (shallow well) and '*simsaar*' (marshy area). While over time government and administrative intervention has helped provide drinking water to the network of habitations through storage tanks and extensive pipelines, historically the demand for water has largely been met locally through '*dharas*'.

Many '*dharas*' are considered to have cultural associations with '*devithans*', which means the dwelling place of a feminine deity. These may also include a sacred grove and are revered as sites of worship within a settlement. In 'The Politics and Poetics of Water in Sacred Landscapes: A Case Study of Biring Village, East Sikkim', Amitangshu Acharya has observed that '*devithans*' have also been "documented from a traditional ecological knowledge (TEK) perspective where they are viewed as sites for conservation of both species and cultural diversity within a larger agro-ecological landscape".