



Participatory Springshed Development in Nagaland

Government: Nagaland, India

Region: South Asia

Sector(s): Resilience

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Summary

The majority of the villages in Nagaland, a state on the far eastern side of the Indian Himalayan Region, are perched on hilltops. Communities in these villages rely on natural springs for their domestic and agricultural activities. With an exponential increase in population since 1980s, and the corresponding increase in anthropogenic activities compounded by climate change, these mountain springs are drying up fast, leading to severe water shortages in many villages.

To tackle this, in 2016, the state's Department of Land Resources initiated a pilot project in 11 sensitive villages on community-led Springshed development. The project aimed to rejuvenate drying and dying natural springs through recharge of the underground aquifers by employing appropriate engineering, vegetative and social measures. The efforts led to quantifiable increases in discharge of springs in all the sites in subsequent years, benefitting the local population.

In partnership with various agencies, the state is applying the experiences and learnings obtained from the project in other villages with critical water issues.

The project was one of the recipients of [Earth Care Awards 2019](#), a joint initiative of the [JSW Group](#) and the [Times of India Group](#).

Background

The mountainous topography and rapid changes in climatic zones over small distances makes Nagaland one of the most climate-sensitive regions in India. Recent indicators of climate change in the regions are: warmer summers, irregular but high intensity rainfall, unpredictable snow fall in some areas, increase in the number of pests like locusts in the fields and lesser number of migratory birds.



Most of the villages in Nagaland are located on hilltops and people are largely dependent on natural springs and ponds for their domestic and agricultural water requirements. But the impacts of rainfall variability caused by climate change and diverse developmental activities have jeopardised the perennial flow of springs. Scarcity of water along with poverty and limited options for alternative livelihoods threatened to further reduce the resilience and increase the vulnerability of the people to cope with extreme climatic events.

Participatory Springshed Development is one of the most effective strategies to address the growing demand of water and strengthen communities' resilience to the impact of climate change.

During 2016-17, the Land Resources Department (LRD) of Nagaland launched a pilot project on Participatory Springshed Development in 11 villages that were experiencing critical water issues. These villages were drawn from the ongoing watershed project of the Government of India, 'Pradhan Mantri Krishi Sinchayee Yojana-Watershed Development Component (PMKSY-WDC)' in technical collaboration with the People's Science Institute (PSI), Dehradun. The goal of this initiative is in line with Sustainable Development Goal (SDG) 6 - Ensuring availability and sustainable management of water and sanitation for all.

Intervention included undertaking a detailed hydrogeological study of the watershed, identification and demarcation of the recharge zone/s and construction of a series of appropriate engineering structures along with vegetative measures in the recharge zone. Formation of strong village level institutions (VLI), participation of communities (particularly, women) and communication strategies for knowledge dissemination have all played an instrumental role in the success of the project.

Key objectives

- To identify and revive drying springs through recharge of the underground aquifers by employing appropriate engineering or vegetative measures with involvement of the community.
- To increase the availability and improve the quality of water.
- To create awareness and build capacity among the stakeholders on conservation and management of natural springs to cope with the impacts of climate change.

Results

- Rejuvenated springs in 11 villages, which resulted in increased spring discharge and increased availability of water during the lean season.
- Achieved reduction in incidence of waterborne diseases through constant monitoring of water quality to ensure sanitary protection of the Springshed recharge area.
- Generated seasonal water quality data and hydro-geological data of the region which will be used in further research studies.
- Empowered local institutions towards governance of water resources in a sustainable and equitable manner.
- Established a robust community-based coping mechanism against climate change.
- Documented experiences and lessons learnt which are being replicated in other villages.

Way Forward

Following the success of the project, the below initiatives were later launched:

- An Action Research project "Water Security through Community-based Springshed Development in the IHR", jointly with PSI Dehradun and WWF India under the National Mission on Himalayan Studies (2017-18).
- Springshed based watershed development programme funded by NABARD in nine watersheds in Nagaland (2018-19).
- Springshed Convergence Programme "Multi-stakeholder Initiative to Provide Drinking Water Security through Springshed Management in 100 villages in rural areas of Nagaland" - a joint initiative of Land Resources Dept., Rural Development Dept, North East Initiative



Development Agency (NEIDA), Tata Trusts, PSI Dehradun, ACWADAM Pune and Arghyam Bangalore (2018-19).

- Out of around 71,000 natural springs in the state, communities are dependent on about 7,000 springs. Created Inventory of 2,394 springs covering both physical and water quality parameters (2017-18).

Enabling conditions

- Strong advocacy by the Government of India in water conservation and efficient utilisation has enabled PMKSY-WDC to fit in very well with the Springshed Development pilot project.
- Successful public-private partnership between Land Resources Department (LRD), representing the Government of Nagaland and PSI Dehradun towards technical collaboration.
- Capacity building and technical support of PSI Dehradun to the field functionaries and Village Level Institutions.
- Strong rapport of the LRD with other stakeholders in the state.

Challenges

- Springshed development involves significant vegetative measures including planting of trees and grasses. Erratic rainfall and animal/human factors seriously impacted the expected biomass productivity and output. Partial reseeding and gap-fillings were done in the subsequent season.
- Some of the Springshed sites were prone to landslides. Local knowledge and technical know-how of the partner organisations helped in the identification and avoidance of such hazards and minimised the risks.

Key lessons learned

- Purposeful participation of local communities in projects is key to sustenance of natural resources.
- Communities' contribution towards the project in the form of manual labour or locally available materials were crucial in building a sense of ownership.

For more information:

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[Project website](#)