

# **Revitalizing Water Catchment Area to Improve the Water Quality and Quantity Downstream and Rehabilitate Springs in Nainital**

## **FINAL REPORT**

**Submitted by**



**ICLEI Local Governments for Sustainability South Asia**

**Submitted to**



**India Water Partnership (IWP)**

# Contents

<b>Background.....</b>	<b>3</b>
<b>Project Objective .....</b>	<b>3</b>
<b>City Profile .....</b>	<b>3</b>
<b>Existing Situation of Sipahi Dhara .....</b>	<b>5</b>
<b>Main Activities Undertaken to Improve the Existing Situation .....</b>	<b>6</b>
<b>Conclusion .....</b>	<b>10</b>
<b>Annexure 1: Registration Sheet .....</b>	<b>11</b>

## List of Figures and Tables

Figure 1: City Location Map .....	4
Figure 2: Location of Sipahi Dhara .....	5
Figure 3: Sipahi Dhara before project implementation .....	6
Figure 4: Activities taken to implement the project .....	6
Figure 5: ICLEI South Asia team discussing the project with the Executive Officer of NPPN .....	7
Figure 6: Municipal Engineer conducted a site survey .....	8
Figure 7: Civil work in progress at Sipahi Dhara.....	8
Figure 8: Renovated Sipahi Dhara site and changing room area.....	9
Figure 9: Awareness Campaign among the residents on the conservation of Natural Spring.....	9
Table 1: Core Committee .....	10

## Background

Water scarcity is one of the pressing issues in India. A large number of the Indian population has already started experiencing extreme water stress in their daily life. According to World Bank, India has 18% of the world's population and only 4% of water resources which makes it one of the world's most water-stressed countries<sup>1</sup>. Moreover, rapid urbanization and unplanned development are accelerating the water crisis in India. The situation in the hills is not better than in other parts of the country. The hill areas are facing water stress due to deforestation, urbanization, flourishing tourism, and forest fire. Therefore, the conservation and protection of water resources are vital steps for sustainable water management in the country. Moreover, for the long-term sustainability of conservation and protection efforts, it is important to aware and capacitates stakeholders on regular basis.

In order to build the capacity of urban local bodies and other stakeholders on successful implementation of the rehabilitation of a natural stream, India Water Partnership (IWP) in collaboration with ICLEI South Asia has undertaken a project on **“Revitalising water catchment area to improve the water quality and quantity downstream and rehabilitate springs in Nainital City, Uttarakhand”**. The project is implemented under Jal Shakti Abhiyan (a program launched by the Ministry of Jal Shakti, Government of India). Under this project, one degraded natural spring area in Nainital City, Uttarakhand was restored for sustainable use and conservation of water.

The project has contributed to the Jal Shakti Abhiyan 2022 of the National Water Mission, Ministry of Jal Shakti, Government of India towards the support of civil society organizations for the urban local body of Nainital city in Nainital District.

## Project Objective

The primary objectives of the project are:

- Revitalisation of one springshed area and protection of the selected region;
- Promotion of conservation of water and sustainable water management; and,
- Build the capacity of local authorities/governments to institutionalise the conservation of water bodies

## Project Context

Nainital city is located at an altitude of 1,938 m spread over an area of 11.73 sq km in the Nainital district. The city is famous for the Naini Lake which covers 0.54 sq km. It is also the headquarters of Nainital Lake District and Kumaon Mandal. As per the 2011 census, Nainital city has a 41,377 population. However, the city caters to around 150000 floating population during peak season (April to June). Nagar Palika Parishad Nainital (NPPN) is the civic body that supplies basic amenities and services like solid waste management, and sewerage management. The local body is also authorized to build roads within Nagar Palika Parishad limits. Uttarakhand Jal Sansthan (UJS) and Uttarakhand Pey Jal Nigam (UPJN) are responsible for the operation and maintenance water supply system. However, NPPN is also responsible for the maintenance of natural springs in the city that provides water to a large population, especially since water is supplied only in the morning and evening and there is no 24x7 water supply in the city.

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<sup>1</sup> Source: <https://www.worldbank.org/en/country/india/brief/world-water-day-2022-how-india-is-addressing-its-water-needs#:~:text=The%20country%20has%2018%20percent,think%20tank%2C%20the%20NITI%20Aayog.>



*Figure 1: City Location Map*

The water supply system of the Nainital city is mainly dependent on three sources:

1. Spring or Natural subsurface water
2. Groundwater
3. an Infiltration well that taps into the Nainital lake.

As per the 2019-2020 service level benchmark report, the city receives 135 LPCD water for 10 hours. The water demand generally increases during peak tourist season and a major portion of fresh water demand is met by the Naini lake. This is also one of the main causes of water depletion in Naini lake.

Natural springs are another major source to supplement the water demand of Nainital city. Residents and tourists regularly use spring water as an alternative source of drinking water. However, these natural springs are in a deteriorated state due to encroachment, dumping of waste, and mismanagement. One such natural spring which has been a source of fresh water for the city for a long time Sipahi Dhara was identified as the project implementation area after constant discussions with various stakeholders looking at the need of such intervention and expected impact post evaluating the intervention at three similar natural springs.

## Existing Situation of Sipahi Dhara

Sipahi Dhara is a natural spring located in the Krishnapur area (ward 11) of Nainital city. Sipahi Dhara along with other natural springs of the city was used for drinking and other purposes during colonial rule. Though most of the households in the area have water supply connections from Jal Sansthan now, however, households and tourists are still using the water (as an alternative source of fresh water) of Sipahi Dhara, particularly when water supply is interrupted and during the summer season. Moreover, the bathroom next to Sipahi Dhara is being used by labourers and migrants. Although the government had put in pipes for the water to flow through pipes for ease of collection and use by residents, the spring is in a deteriorated state due to dumping of waste and mismanagement of the spring. C&D waste coming out due to wall dampness was blocking the Sipahi Dhara drains resulting in flooding during the rain.



Figure 2: Location of Sipahi Dhara





Figure 3: Sipahi Dhara before project implementation

## Main Activities Undertaken to Improve the Existing Situation

ICLEI South Asia has undertaken the project to revitalize and restore one natural spring (named Sipahi Dhara) in Nainital city. The following approaches and activities were taken up under the project.

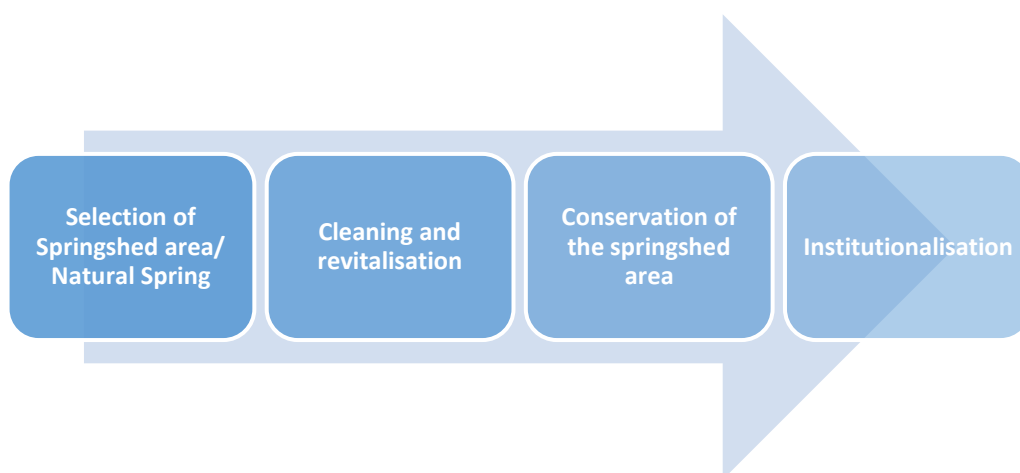


Figure 4: Activities taken to implement the project

### Activity-1: Selection of Springshed area/Natural Spring:

ICLEI South Asia technical team had meetings with the various stakeholders. The broad objective of the meetings is to inform stakeholders about the project undertaken by ICLEI South Asia in collaboration with India Water Partnership (IWP) and to identify the natural spring to restore.



*Figure 5: ICLEI South Asia team discussing the project with the Executive Officer of NPPN*

Based on the discussion with municipal officials and other stakeholders, the ICLEI SA team conducted a quick assessment of three of the important local springs of Nainital city – Parda Dhara, Sipahi Dhara and New Bus Stand Dhara - to understand their existing situation, conservation and management practices, utilization potential, and the level of degradation. These springs are all used by residents living nearby for drinking, bathing and washing clothes. Based on the reconnaissance and consultation with Nagar Palika Parishad Nainital (NPPN), the Sipahi Dhara natural spring (Geo Coordinates: 29°22'21.6"N 79°27'50.7"E) was selected as the implementation site for this project..

#### **Activity-2: Cleaning and revitalization:**

A site survey was conducted by the ICLEI South Asia team along with NPPN engineers to prepare a plan of action for revitalisation and restoration of Siphai Dhara. It was observed that the site requires a good amount of civil work and an awareness campaign to improve the existing situation and utilisation behaviour. Based on the assessment, a quotation from registered contractors (under NPPN) for the implementation of civil work in Dhara was invited.

The civil work included -

- Drain Cleaning and Meshing
- RCC/PCC flooring around the Dhara
- Bathroom cleaning, whitewashing, and replacement of the door





*Figure 6: Municipal Engineer conducted a site survey*

Based on the quotations provided by the bidders, a work order was provided to the successful bidder. It is important to note that the Local Councillor and Chairman of NPPN showed personal interest in the work. Along with NPPN Engineer, they have supervised the day-to-day activities so that the rejuvenation works are carried-out as per local needs and demands. Civil works were done to provide drinking, bathing, and washing facilities for users.



*Figure 7: Civil work in progress at Sipahi Dhara*





*Figure 8: Renovated Sipahi Dhara site and changing room area*

### **Activity-3: Conservation of the springshed area:**

ICLEI SA with support of the local councilor has conducted an awareness generation program among the residents, labourers, and migrants on the importance of natural springs. It was informed that natural springs are a vital part of the hydrological cycle.

Despite being an important source of freshwater (generally used as an alternative to pipe water supply), natural springs are not properly managed by the authorities and used by the residents irresponsibly. Therefore, it is important to prepare sustainable and robust actions to conserve these natural springs.

We held discussions regarding the plan of action with various stakeholders including residents, councilors, and municipal officials. During the discussions, two respective solutions came up which are as follows –

1. Arrangements for regular and proper waste disposal would need to be made to resolve the issue of dumping waste in the drain system of Dhara. Municipal Officials were requested to make arrangements for the same.
2. Construction of community toilets for migrants or separate rooms for the toilet to avoid mixing of filth or human excreta in spring water was also proposed.

Municipal officials have promised to take necessary action on issues.



*Figure 9: Awareness Campaign among the residents on the conservation of Natural Spring*

#### Activity-4: Institutionalisation:

To engage all relevant stakeholders (including residents, municipal officials, and political leaders) in the conservation of Sipahi Dhara, a core committee was formed. The committee is chaired by the Chairman of Nagar Palika Parishad Nainital. It was decided that the committee will meet once every quarter and conduct a public meeting to discuss key challenges in the conservation of natural springs (including Sipahi Dhara) of the city. The committee will also run an awareness campaign on water conservation and natural spring conservation. The committee will also advise and consult the NPPN and other government departments in planning and decision-making.

Table 1: Core Committee

S.No.	Name	Designation
1	Mr. Sachin Negi, Chairman of NPPN	Head
2	Mr. Kailash Rautela, Councilor	Advisor
3	Mr. Mehra	Technical Advisor
4	Mr. Ajay Bisht, Resident	Member
5	Mr. Bachi Singh, Resident	Member
6	Sakshi Bisht, Resident	Member

## Conclusion

Natural Springs are still an important source of fresh water since it usually provides clean drinking water. The natural springs of the Nainital are in a deteriorated state due to encroachment, illegal dumping of waste (including C&D Waste), mismanagement, and ignorance of government departments. These natural springs are being still used by locals, tourists, and migrants as a source of fresh water. The project has shown that there is potential to engage all relevant stakeholders to conserve and revitalized these natural springs. It shows that regular capacity building and awareness programs could improve the existing situation of these natural springs.

## Annexure 1: Registration Sheet

Registration Sheet

S.N	Name	Organization/Address	Contact	Signature
1	Salman Jafri	Krishnapur, Tallital	9410116805	
2	Manu arya	Krishnapur, Tallital	9410160633	
3	Bhaskar Sharma	Durgapur (Panchayat)	9411580311	
4	Azif Ali	Durgapur	9368757276	
5	Kaishav Rautela	Gufa Mahadev	9456318138	
6	Bachhi Singh Bishr	Shiphi Dhara	7579254458	
7	Arbog Khan	Krishnapur, Tallital	7895604493	
8	सुरेश	Krishnapur, Tallital		
9	Ganesh mahara	Dist Jail Nainital	9927938053	
10	Rahul Palaniga	Krishnapur, Tallital	9088202288	
11	Chabul Jantay	Cyberabad Mahadev	9756612852	
12	गिरिश चन्द जोशी	सिपाई धारा नैनीताल	9411760141	
13	मोहन सिंह पनेर	दुर्गपुर	9911724104	
14	शिवम लाल	दुर्गपुर	6171977440	

Registration Sheet

S.N	Name	Organization/Address	Contact	Signature
15	Shabnam	Krishnapur	9759847985	
16	Sohit arya	Durgapur	9971668196	
17	Rajendra Parud	Krishnapur	9917617952	
18	Satish Kumar	11	7579194180	
19	Chander Kumar	11	7455898119	