

Chapter-I

Introduction

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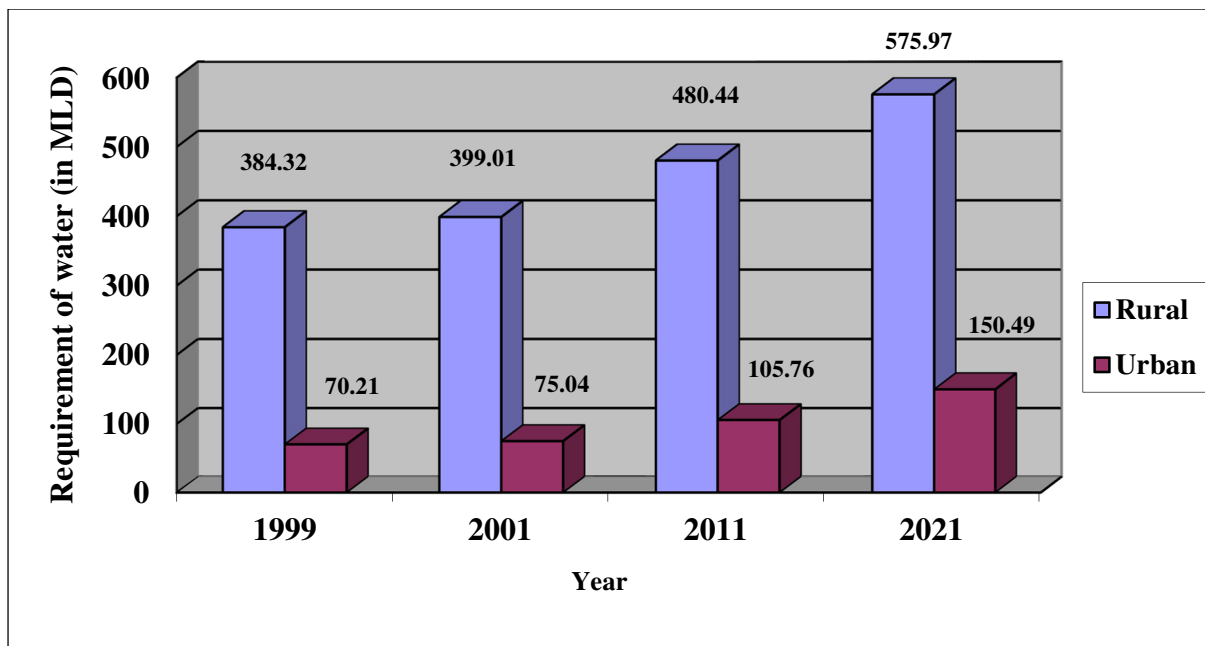
Introduction

The steady increase in human population, widespread technological modernization, new and unsustainable lifestyle have invited and aggravated the problem of water scarcity. The right to access to drinking water is fundamental to life. The constitutional right to access to clean drinking water has been drawn from the right to food which has been protected under the broad heading of right to life, guaranteed under the Constitution. The theme of providing safe drinking water has also been included by the United Nations in its Millennium Development Goals (MDGs) and subsequently in the Sustainable Development Goals (SDGs). SDG 6: 'water goal', is to ensure availability and sustainable management of water and sanitation for all, among others.

1.1 Requirement of drinking water in Himachal Pradesh

Himachal Pradesh is located in the western Himalayas covering an area of 55,673 square kilometers. As per Census 2011, the State population was 68.65 lakh, an increase from figure of 60.78 lakh in Census 2001 and was 0.57 *per cent* of India's population. The requirement of water in the State was 454.53 million litres per day (MLD) (Rural: 384.32 MLD and Urban: 70.21 MLD) during 1999 and was projected to increase to 726.46 MLD (Rural: 575.97 MLD and Urban: 150.49 MLD) during 2021 as depicted in **Chart-1.1**.

Chart-1.1



Source: Human Development Report 2002 published by Planning Department, Govt. of H.P.

1.2 Water sources of Himachal Pradesh

The state of Himachal Pradesh is richly endowed with a hilly terrain having an enormous volume of water from the catchment areas of Satluj, Beas, Ravi, Yamuna and Chenab rivers. Drinking water is also supplemented from other sources (Ground water: springs, tube wells,

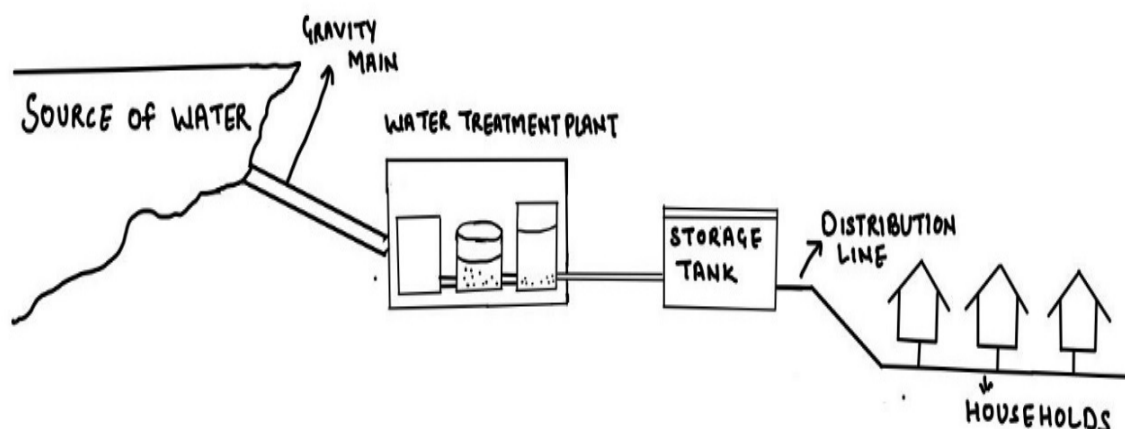
etc.; Surface Water: (rivers, *khad*¹, *Nallah*, lakes, etc.; rainwater and traditional/ conventional sources: *Boaries*² and *Khatries*³). There are approximately 1.96 lakh number of water sources⁴ in the State as of March 2021.

Drinking water is supplied to the population through gravity water supply schemes and lift water supply schemes. Under gravity water systems the water is transported through gravity from the source to users through a piped network without use of any external energy. In Lift water system, water is transported by using external energy through fuel based or electric power using pumps.

Main components of water supply schemes in the State include source of water, rising/ gravity main, water treatment plant, pump house, storage tank and distribution line.

Schematic presentation/ diagram of gravity water supply scheme

GRAVITY WATER SUPPLY SCHEME



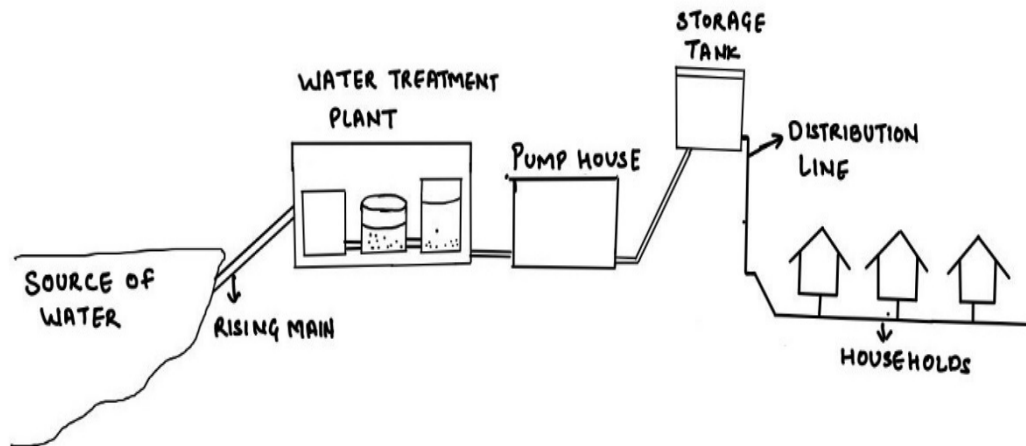
¹ *Khad* is a small rivulet in hilly area.

² *Boaries* are stepwells, ponds or wells in which the water is accessed by climbing down a series of steps.

³ *Khatries* are man-made water wells.

⁴ Information supplied by the Department

LIFT WATER SUPPLY SCHEME

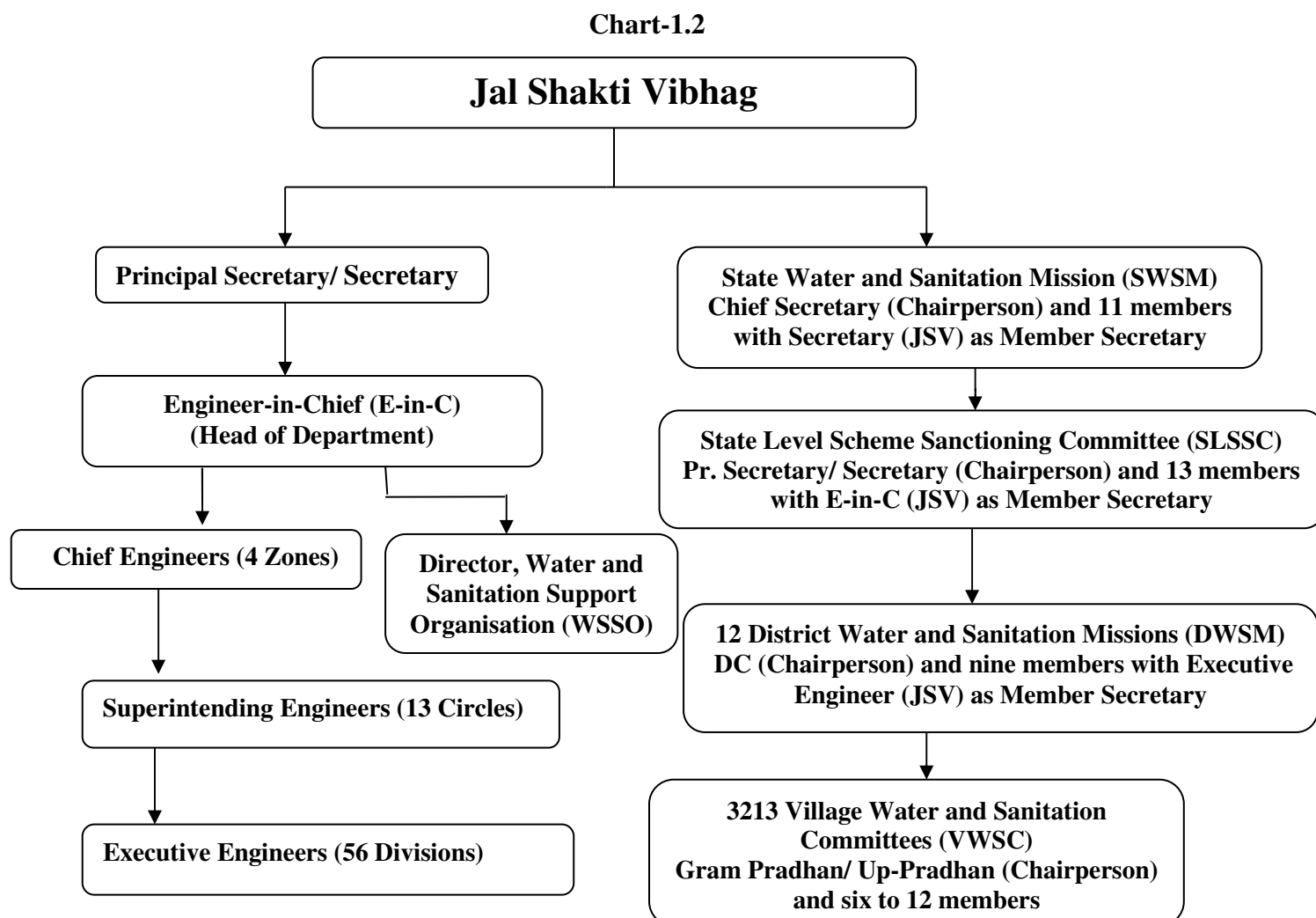


1.3 Drinking water supply programmes

Water is a state subject, and the State Government is responsible for ensuring access to a minimum quantity of potable water. Government of India (GoI) supplements the efforts of the State Governments with technical and financial assistance for provision of safe drinking water to the habitations in the State. In Himachal Pradesh, *Jal Shakti Vibhag* (JSV) (erstwhile Irrigation and Public Health (IPH) department), is responsible for providing drinking water services. It is the nodal department in the State for development, execution, operation and maintenance of water supply schemes. The schemes are approved under GOI programmes {National Rural Drinking Water Programme (NRDWP)/ Jal Jeevan Mission (JJM)} and State programmes for Rural/ Urban Water Supply Schemes. A majority of water supply schemes in the State are executed, implemented and monitored through departmental regulations and under guidelines of NRDWP/ JJM.

1.4 Organisational set up

Organogram of the JSV for providing drinking water services is given in **Chart-1.2**.

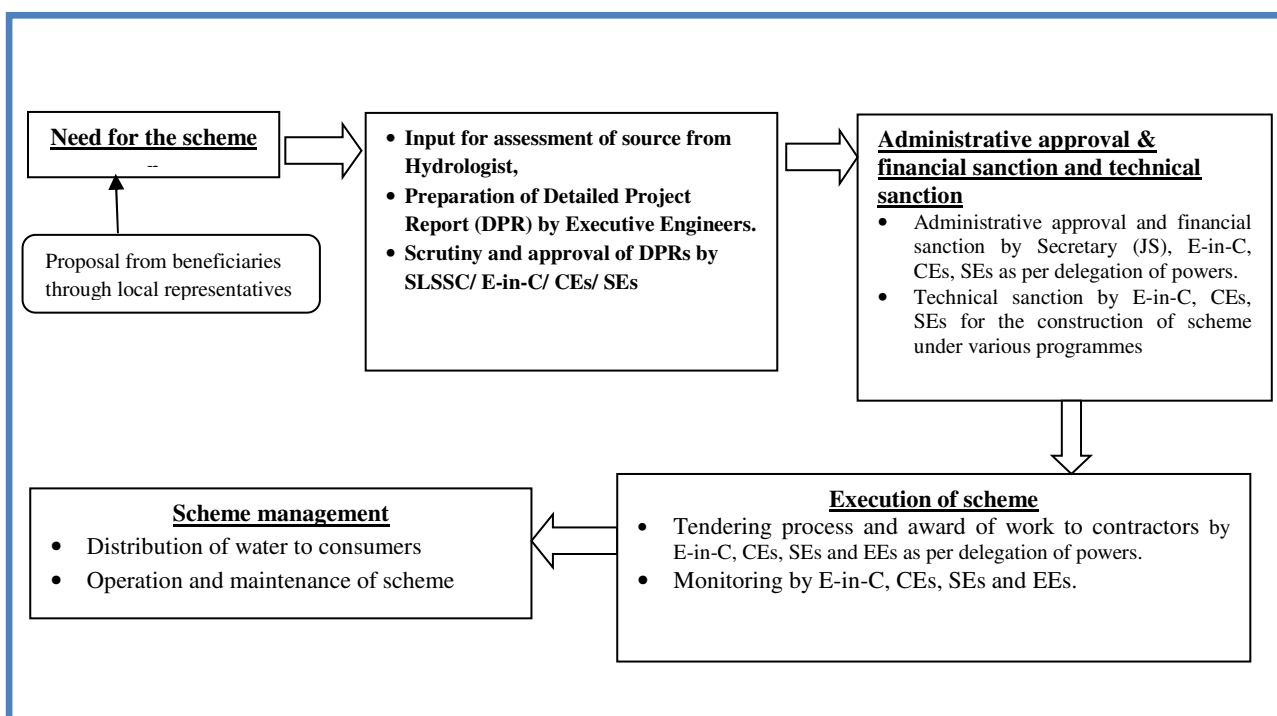


The departmental machinery is complemented by the missions which were established to involve the community in planning, implementation and management of water supply schemes. The SWSM seeks to provide policy guidance for community led and participatory projects. The mission structure seeks to bring synergy and drive with latest knowledge. In addition to regular officials, it hires subject experts. It has representation from PH engineering, project management, finance management, IT, IEC, capacity building and training and NGO coordination.

1.5 Process for approval of the drinking water supply schemes

The Jal Shakti Vibhag (JSV) is responsible for planning, construction, operation and maintenance of water supply schemes. The process of approval and execution of a water supply scheme is shown in the following flow **Chart-1.3**.

Chart-1.3



1.6 Audit Objectives

The objectives of the performance audit were mainly to assess whether:

- The envisaged institutional mechanism for implementation of the drinking water programmes/ schemes was functioning effectively;
- Funds management was economical and efficient;
- The implementation of the programmes/ schemes was effective and efficient;
- Adequate and effective mechanism existed for monitoring and evaluation of the programmes/ schemes; and
- Households are satisfied with the drinking water services.

1.7 Audit Criteria

The sources for audit criteria include the following:

- Central Public Health and Environmental Engineering Organization (CPHEEO) Manual;
- Uniform Drinking Water Quality Monitoring Protocol, 2013;
- Himachal Pradesh Water Policy 2013;
- Guidelines for Implementation of National Rural Drinking Water Programme (2013) and Jal Jeevan Mission (2019);
- Orders and instructions issued by the GOI and State Government;

- HP Financial Rules & HP Treasury Rules; and
- Procedures prescribed for monitoring and evaluation of schemes/ programmes.

1.8 Audit Scope and Methodology

The Performance Audit covered period from 2016-17 to 2020-21 and was conducted during July 2021 to March 2022. Records of the offices of E-in-C, Director (WSSO), Chief Engineers of all four zones⁵, Superintending Engineers of eight (out of 13) circles⁶ (two from each of 4 zones) selected on the basis of Random Sampling, were scrutinized. Records of the offices of Executive Engineers of 20 (out of 56) divisions⁷ in the selected circles selected on the basis of Stratified Sampling Technique were also test-checked. In the above 20 divisions, 40 drinking water supply schemes (lift water supply schemes: 23 and gravity water supply schemes: 17) out of 457 drinking water supply schemes completed during 2016-21 and 15 incomplete drinking water supply schemes were scrutinized in detail. Besides, survey of 1109 beneficiaries/ residents (of 40 selected completed schemes) for assessment of delivery and quality of water services was also conducted.

An entry conference with the Secretary (JS) was held in August 2021 wherein the objectives, scope, criteria and methodology of audit were discussed. Audit findings have been drawn after scrutiny of records, analysis of available data by issue of questionnaires, audit memoranda and obtaining responses of the departmental functionaries at various levels. The audit findings were discussed with the Secretary (JS) and departmental officers in the exit conference held on 5th December 2022 and the views of the Department have been incorporated appropriately in the Report.

1.9 Acknowledgement

The office of the Principal Accountant General (Audit), Himachal Pradesh, acknowledges the co-operation and assistance extended by the departmental functionaries / authorities and beneficiaries during Audit.

⁵ Dharamshala, Hamirpur, Mandi and Shimla.

⁶ Bilaspur, Chamba, Dharamshala, Hamirpur, Kullu, Mandi, Reckong Peo and Shimla,

⁷ Baggi, Bhoranj, Bilaspur, Chamba, Chountra, Dalhousie, Dharamshala, Hamirpur, Jhandutta, Kaza, Keylong, Kullu, Mandi, Matiana, Palampur, Rampur, Reckong Peo, Salooni, Shimla and Thural.