



# Socio-Economic Impact Of Jal Jeevan Mission On Rural Households Of Himachal Pradesh

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## Abstract

The Government of India launched the Jal Jeevan Mission (JJM) in 2019 under the Ministry of Jal Shakti, aiming to strengthen the implementation of rural water supply programs. The mission has facilitated the provision of Functional Household Tap Connections (FHTCs) to rural households, enabling them to obtain safe and adequate drinking water directly at their homes. The Jal Jeevan Mission has significantly improved rural drinking water access in Himachal Pradesh, making the state one of the top performers in the country. The state has recorded 99.9 per cent household tap water coverage, surpassing the national average, and most districts have achieved complete coverage with efficient functionality, regular supply, adequate quantity, and good water quality. The present study examines the year-wise progress of household tap water coverage, analyses the district-wise performance, evaluates the level of awareness and investigates the socio-economic impact of the Jal Jeevan Mission on rural households of Himachal Pradesh. Both primary and secondary data sources were used in the study. A multistage area sampling technique was adopted for selecting the respondents. The collected data were analysed using descriptive statistics and Pearson correlation analysis. The study found that the Jal Jeevan Mission has achieved nearly universal coverage of functional household tap connections, though a few districts still face challenges due to geographical constraints, limited water resources, and infrastructural limitations. The findings also highlight that while water quality compliance remains high across most districts, irregular water supply persists in some areas due to mountainous geography, limited water sources, and old water infrastructure, along with seasonal variations and heavy water demand in city areas. Moreover, certain challenges remain, including the need to ensure sustainable water sources, address seasonal water shortages, and improve the operation and maintenance of village-level water supply systems. The study recommended that strengthening

awareness initiatives and addressing district-level infrastructural challenges can further enhance the long-term socio-economic benefits of the Jal Jeevan Mission in Himachal Pradesh.

**Key Words:** Jal Jeevan Mission, Rural Households, Functional Household Tap Connections, Drinking Water, Awareness, Socio-Economic Impact.

## I. Introduction

To overcome the limitations of earlier rural water supply programmes, the Government of India introduced the Jal Jeevan Mission (JJM) in 2019 under the Ministry of Jal Shakti. The vision of the Jal Jeevan Mission is to ensure that every rural household receives a sufficient quantity of drinking water of the prescribed quality on a regular and sustainable basis at affordable service delivery costs. Through this initiative, the government aims to improve the overall living standards of rural communities. A key social objective of the mission is to reduce the burden on women, who traditionally travel long distances to collect water, often exposing themselves to physical strain and safety risks. By providing water directly at the household level, the programme is expected to save time and enable women to participate in productive and income-generating activities, thereby contributing to household welfare and economic development. The programme also promotes sustainable water management practices such as greywater management, water conservation, and rainwater harvesting in order to secure long-term water availability. The mission adopts a community-oriented approach, where information, education and communication activities play an important role in raising awareness and encouraging community participation. It also seeks to convert water conservation into a nationwide public movement by making access to water and its sustainable management a collective responsibility of all stakeholders.

Under the Jal Jeevan Mission, the “Har Ghar Jal” initiative was announced by Prime Minister, Narendra Modi on 15 August 2019 to ensure piped water supply to every rural household by 2024. The mission follows a decentralised and demand-driven approach in which village communities play a central role in the planning, implementation, management, operation, and maintenance of village water supply systems. As of April 20, 2022, more than 9.44 crore rural households had already been provided with tap water connections under the mission. The programme aims to provide every rural household with a Functional Household Tap Connection (FHTC) that supplies at least 55 litres of water per person per day (LPCD) of prescribed quality. The financial responsibility for the mission is shared between the central and state governments in a 50:50 ratio. However, for the Himalayan and North-Eastern states, the cost-sharing ratio is 90:10 between the centre and the states, while Union Territories receive 100 per cent funding from the central government. For the nationwide implementation of the programme, the Government of India has allocated approximately ₹3.6 lakh crore.

In the context of Himachal Pradesh, the Jal Jeevan Mission holds particular importance because of the state’s mountainous terrain, scattered settlements, and dependence on seasonal springs and streams as primary water sources. Within the state, Kangra district, one of the largest populated districts, presents unique challenges for rural water management due to its diverse hydro-geological and socio-economic conditions. The implementation of JJM in Kangra district has led to significant improvements in

household water accessibility, public health conditions, and the overall quality of life of rural residents. It has also promoted greater environmental awareness and strengthened community participation in water management. However, certain challenges remain, including the need to ensure sustainable water sources, address seasonal water shortages, and improve the operation and maintenance of village-level water supply systems. The Jal Jeevan Mission has significantly improved rural drinking water access in Himachal Pradesh, making the state one of the top performers in the country. The state has recorded 99.9 per cent household tap water coverage, surpassing the national average, and most districts have achieved complete coverage with efficient functionality, regular supply, adequate quantity, and good water quality. The mission has strengthened rural water infrastructure and ensured reliable access to safe drinking water for the majority of households in the state.

## II. Review of Literature

**Sharma (2025)**, Carried out a field-based investigation among rural households in Ghanahatti Panchayat of Shimla district in Himachal Pradesh to assess the availability of drinking water and sanitation practices. The findings revealed that a large number of households depend on government-supplied tap water facilities, reflecting the growing expansion and effectiveness of rural drinking water programmes such as the Jal Jeevan Mission in the area.

**Mullick (2024)**, examined the performance of the mission in Himachal Pradesh by assessing the functionality of rural water supply systems. The study indicated that the state performs better than the national average in terms of the availability, adequacy and quality of drinking water supplied to rural households. It also reported that districts such as Chamba, Hamirpur, Kangra, Kinnaur and Sirmour have almost achieved 100 per cent functional tap water connections, reflecting the effective implementation of the programme.

**State Water Supply Reports (2022)**, states that, Jal Jeevan Mission has considerably improved access to drinking water in Himachal Pradesh. Within a short span of time, more than 8.44 lakh households were provided with new tap water connections, whereas only about 7.63 lakh households had received such connections during the preceding several decades. This demonstrates the accelerated expansion of rural water supply infrastructure under the mission.

**According to report of Ministry of Jal Shakti (2021)**, the mission has played a major role in strengthening rural water supply infrastructure across several states, including Himachal Pradesh. The report highlighted that the programme aims not only to provide household tap connections but also to maintain water quality surveillance, encourage community involvement, and promote sustainable management of water sources.

**According to report of NITI Aayog (2022)**, Himachal Pradesh has become one of the frontrunner states in implementing the Jal Jeevan Mission. The report pointed out that the state has nearly achieved universal rural tap water coverage and has significantly enhanced the availability of safe drinking water in remote and mountainous regions.

**World Bank (2023)**, reported that the Jal Jeevan Mission has generated several positive social outcomes. It has reduced the responsibility of water collection for women and children, improved sanitation and hygiene practices, and strengthened local governance through the establishment of Village Water and Sanitation Committees (VWSCs). **Ministry of Jal Shakti Functionality Assessment Report (2024)**, states that, Himachal Pradesh has achieved nearly 99.9 per cent coverage of rural households with tap water connections. The report also indicated a high level of functional connections, along with notable progress in water quality monitoring and consistent water supply across various districts.

### III. Research Gap

The above-mentioned studies and reports have highlighted the progress of the Jal Jeevan Mission in improving rural drinking water infrastructure and expanding household tap connections in Himachal Pradesh. Most of the existing literature mainly focuses on program implementation, infrastructure development, and coverage of tap water connections. Government reports and institutional studies largely emphasise the achievement of targets, functionality of water supply systems, and overall state-level performance. However, limited research has been conducted to examine the actual socio-economic impact of the mission on rural households of Himachal Pradesh. Therefore, the present field-based study is significant to assess the socio-economic impact of the Jal Jeevan Mission on rural households, focusing on aspects such as awareness level, water quality access, social benefits, and economic improvements among beneficiaries. The present study attempts to fill this gap by examining the impact of the Jal Jeevan Mission on rural households -A study of Kangra district in Himachal Pradesh.

### IV. Need and Scope of Study

Access to safe and dependable drinking water is crucial for improving health conditions, sanitation standards, and the overall quality of life in rural communities. The Jal Jeevan Mission was introduced to ensure that every rural household in India receives a functional household tap water connection. Since its introduction in 2019, the programme has considerably strengthened rural water supply infrastructure by expanding piped water connections and reducing the burden of fetching water, particularly for women and children.

Although the mission has made significant progress in Himachal Pradesh, where rural tap water coverage has almost reached universal levels, it is still necessary to examine whether these connections are functioning efficiently and supplying adequate, regular, and safe drinking water to households and their socio-economic impact on beneficiaries. Therefore, there is a need to undertake a study to assess the socio-economic impact of the mission on rural households, including improvements in water availability, changes in living standards, health conditions, and reduction in time spent collecting water, and the overall effectiveness of rural water supply systems. The study specifically covers rural

households in the Kangra district of Himachal Pradesh. The present study aims to provide an overview of the mission with respect to the availability and accessibility of drinking water and to assess its socio-economic impacts on rural households of Himachal Pradesh.

## V. Objectives of the Study

The objectives of the study are as follows:

- 1) To examine the progress of functional household tap water coverage and the performance of the Jal Jeevan Mission in Himachal Pradesh.
- 2) To evaluate the awareness level and the socio-economic impact of the Jal Jeevan Mission on rural households in Himachal Pradesh.

## VI. Research Methodology

- a) **Study Area:** To examine the coverage and level of awareness among rural households, as well as the social and economic impact of the Jal Jeevan Mission, the study covers rural households of Kangra district in Himachal Pradesh.
- b) **Data Collection:** To accomplish the objectives of the study, both primary and secondary data have been used in this study. Primary data have been collected from beneficiaries of the Jal Jeevan Mission through a questionnaire. The secondary data and other related information collected through the Jal Jeevan Mission Dashboard, economic survey reports, newspapers, research publications and internet sources, etc. Furthermore, discussion sessions were held with stakeholders and rural households to obtain information about the coverage and effectiveness of the Jal Jeevan scheme in the state of Himachal Pradesh.
- c) **Population and Sample Size:** The population of the study consists of 3,869 villages of the Kangra district, which are covered under the Jal Jeevan Mission in Himachal Pradesh. Out of these villages, 390 rural households are selected as the sample size.
- d) **Sampling Technique:** A multistage area sampling technique was adopted in the study to select the respondents. In the first stage, the entire population was classified into 16 blocks and 390 number of panchayats have been selected on the basis of proportionate stratified sampling. In the second stage, 390 number of villages with the maximum number of rural households were selected from the panchayats. In the third stage, one rural household from each village was selected as the sample respondent conveniently.
- e) **Statistical Methods:** Statistical methods such as descriptive statistics and Pearson correlation analysis were employed to analyse the collected data.
- f) **Hypothesis Formulation:** For the purpose of analysing the outcomes of the study, the following hypotheses have been framed:

H1: There is a no significant level of awareness about the Jal Jeevan Mission among rural households in Himachal Pradesh.

H2: There is no significant relationship between awareness level and the social impact of the Jal Jeevan Mission.

H3: There is no significant relationship between awareness level and the economic impact of the Jal Jeevan Mission.

## VII. Results and Discussion

Table No. 1 shows the year-wise household tap water coverage under the Jal Jeevan Mission in the state of Himachal Pradesh. Initially, when the Jal Jeevan Mission was launched in 2019, 7,63,000 of the 17,09,000 rural households in Himachal Pradesh had access to tap water, representing 44.6 per cent coverage.

**Table No. 1**

### **Year-Wise Functional Household Tap Water Coverage under Jal Jeevan Mission in Himachal Pradesh**

<b>Year</b>	<b>Total Rural Households</b>	<b>Households with Tap Connection</b>	<b>Coverage (%)</b>
2019 (At launch)	17,09,000	7,63,000	44.6%
2020	17,09,000	10,80,000	63%
2021	17,09,000	13,95,000	81.6%
2022	17,09,000	16,20,000	94.8%
2023	17,09,000	17,05,000	99.7%
2024-2025	17,09,000	17,09,000	100%

**Source: Jal Jeevan Mission Dashboard (<https://ejalshakti.gov.in>) and Economic Survey Reports of Himachal Pradesh**

However, from the year 2020, the number of households with tap water connections increased significantly in Himachal Pradesh from 44.6 percent to 63 percent coverage. During the year 2023, the coverage reached to 99.7 per cent, with 17,05,000 households having tap water out of 17,09,000 total rural households. Lastly during the year 2024-2025, the programme reached 100 per cent coverage, revealing that all 17,09,000 rural households in Himachal Pradesh have received their functional tap water connections. Overall, the study reported that the Jal Jeevan Mission played an important role in expanding and full coverage of households with tap connection facilities in rural areas of Himachal Pradesh.

Table No. 2

## District-Wise Status of Jal Jeevan Mission in Himachal Pradesh

District	Household Tap Water Coverage	Regular Supply (%)	Adequate Quantity (%)	Water Quality Compliance
Bilaspur	100%	99.3%	100%	100%
Chamba	100%	91%	97%	95%
Hamirpur	100%	94%	98%	94%
Kangra	100%	90%	96%	92%
Kinnaur	100%	88%	95%	90%
Kullu	100%	87%	95%	91%
Shimla	100%	68.1%	94%	90%
Sirmaur	100%	88%	96%	91%
Una	100%	92%	100%	100%
Mandi	99.8%	86%	95%	92%
Lahaul&Spiti	99.6%	85%	94%	91%
Solan	99.6%	87%	95%	92%

Source: Jal Jeevan Mission Dashboard (<https://ejalshakti.gov.in>) and Economic Survey Reports of Himachal Pradesh

The data in the above Table No. 2 presents the district-wise status of Jal Jeevan Mission in Himachal Pradesh, including household tap water coverage, regular water supply, adequate water quantity and water quality compliance. The majority of districts, including Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Shimla, Sirmaur, and Una in the state of Himachal Pradesh, have achieved the 100 per cent household tap water connection. Whereas three districts, including Mandi, Lahaul&Spiti and Solan, have not achieved 100 per cent coverage of tap water connection under Jal Jeevan Mission.

Further, the regular supply of water under the Jal Jeevan Mission varies across the districts. Bilaspur district recorded a high percentage of 99.3 per cent regular supply of water, followed by Hamirpur, Una, Chamba, and Kangra with 94 per cent, 92 per cent, 91 percent and 90 percent respectively. Whereas Shimla district recorded the lowest percentage of 68.1 per cent regular water among all the districts of Himachal Pradesh.

Additionally, all of the districts of state reported an adequate quantity of water ranging between 94 per cent and 100 per cent, revealing that the majority of the households receive a sufficient supply of tap water for daily needs. Among all the districts, Bilaspur and Una received 100 per cent tap water adequacy under the Jal Jeevan Mission. The water quality compliance is also high across the districts of the state. Bilaspur and Una districts reported 100 per cent water quality compliance; meanwhile, other districts recorded water quality compliance levels ranging from 90 per cent to 95 per cent.

Overall, the study found that irregular water supply in Shimla, resulting from mountainous geography, limited water sources, and old water infrastructure, along with seasonal variations and heavy water demand in city areas. The districts of Mandi, Lahaul & Spiti, and Solan have not yet achieved full 100 per cent household tap water connection under the Jal Jeevan Mission, mainly due to a combination of geographical challenges, infrastructural constraints, and limited water resources.

### **Awareness Level and Socio-Economic Impact of Jal Jeevan Mission on Rural Households in Himachal Pradesh.**

The awareness level and the socio-economic impact of the Jal Jeevan Mission have been analysed on the basis of statements related to awareness, access to drinking water supply, and the social and economic effects experienced by rural households in Himachal Pradesh. Respondents were asked to express their views on various aspects of the mission, such as the availability of water supply, duration of water supply hours, quality of water, regularity of supply, and access to household tap water. The statements also examined the programme's social and economic outcomes, including improvement in hygiene, reduction in time spent collecting water, productive use of extra time saved, improvement in children's school attendance, increased participation in community decisions related to water management, reduction in medical expenses, and the emergence of new livelihood opportunities due to improved water access.

Based on the responses of the participants, answers were coded using a scale where 1 represented "Yes" and 2 represented "No." The scores obtained from all statements were summed to calculate the total awareness score, social impact score, and economic impact score for each respondent. These composite scores were then used to apply the Pearson correlation method to examine the relationship between awareness level and the social and economic impact of the Jal Jeevan Mission on rural households.

**Table No. 3**

#### **Awareness Level Regarding Jal Jeevan Mission among Rural Households**

<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
Awareness Level	390	6.00	11.00	8.0897	1.10137
Valid N (listwise)	390				

**Source: Data Collected through field survey and analysed using SPSS**

Table No. 3 represents the awareness level among rural households regarding various aspects of the mission, such as the availability of water supply, duration of water supply hours, quality of water, regularity of supply, and access to household tap water under Jal Jeevan Mission in the state of Himachal Pradesh. The above table reveals that the score on awareness level scale ranges between a minimum of 6 and a maximum of 11, having awareness mean score, i.e. 8.0897. This mean score indicates a moderate level of awareness among rural households regarding Jal Jeevan Mission in

Himachal Pradesh. Further, the value of standard deviation, i.e. 1.10137, reveals a moderate level of variation in the respondents' opinions regarding awareness of Jal Jeevan Mission.

**Table No. 4**

**Correlation between the Awareness Level and the Social Impact of Jal Jeevan Mission**

		Awareness Level	Social Impact
Awareness Level	Pearson Correlation	1	.115*
	Sig. (2-tailed)		.024
	Sum of Squares and Cross-products	471.859	127.487
	Covariance	1.213	.328
	N	390	390
Social Impact	Pearson Correlation	.115*	1
	Sig. (2-tailed)	.024	
	Sum of Squares and Cross-products	127.487	2627.190
	Covariance	.328	6.754
	N	390	390
*. Correlation is significant at the 0.05 level (2-tailed).			

**Source: Data Collected through field survey and analysed using SPSS**

Table No. 4 portrays the correlation between the awareness level and social impact of Jal Jeevan Mission among respondent households in Himachal Pradesh. The calculated Pearson correlation, i.e. .115, indicates a positive correlation between awareness level and social impact of Jal Jeevan Mission. The calculated p-value of  $.024 < 0.05$  at 5% level of significance reveals a statistically significant relationship between the awareness level of rural households and the social impact of Jal Jeevan Mission. Hence, we reject the null hypothesis ( $H_0$ ); i.e. there is no significant relationship between awareness level and the social impact of the Jal Jeevan Mission on rural households.

Further, the above result demonstrates that rural households' awareness of the Jal Jeevan Mission has contributed to its social impact, leading to better hygiene, less time spent fetching water, productive use of saved time, improved children's school attendance, and increased involvement in community water-related decisions.

The data in Table No. 5 shows the correlation between the awareness level and the economic impact of Jal Jeevan Mission on respondent rural households in Himachal Pradesh. The calculated person correlation, i.e. .156, indicates a positive correlation between awareness level and economic impact of Jal Jeevan Mission. The calculated p-value of  $.002 < 0.01$  at 1% level of significance reveals a statistically significant relationship between the awareness level of rural households and the economic

impact of Jal Jeevan Mission. Hence, we reject the null hypothesis ( $H_0$ ) i.e. there is no significant relationship between awareness level and the economic impact of the Jal Jeevan Mission on rural households. Hence it can be stated from the above results that awareness level of respondents regarding the various aspects, such as the availability of water supply, duration of water supply hours, quality of water, regularity of supply, and access to

**Table No. 5**

**Correlation between the Awareness Level and the Economic Impact of Jal Jeevan Mission**

		Awareness Level	Economic Impact
Awareness Level	Pearson Correlation	1	.156**
	Sig. (2-tailed)		.002
	Sum of Squares and Cross-products	471.859	109.205
	Covariance	1.213	.281
	N	390	390
Economic Impact	Pearson Correlation	.156**	1
	Sig. (2-tailed)	.002	
	Sum of Squares and Cross-products	109.205	1032.974
	Covariance	.281	2.655
	N	390	390
**. Correlation is significant at the 0.01 level (2-tailed).			

**Source: Data Collected through field survey and analysed using SPSS**

household tap water etc. of Jal Jeevan Mission has contributed to its economic impact on rural households including saving water collection time, increased earnings, reduced medical expenses, and the emergence of new livelihood opportunities due to improved water access in the state of Himachal Pradesh.

### VIII. Findings of the Study

The study found that the number of rural households with tap water connections in Himachal Pradesh increased significantly after the year 2020. By the end of year 2023, coverage had reached 99.7 per cent, with 17,05,000 households having access to tap water out of a total of 17,09,000 rural households. During the year 2024-2025, the programme reached 100 per cent coverage, ensuring that all 17,09,000 rural households in the state received functional household tap connections. Further the study found that the majority of districts, including Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Shimla, Sirmour, and Una in the state of Himachal Pradesh, have achieved the 100 per cent household tap water connection. Whereas three districts, namely Mandi, Lahaul & Spiti and Solan, have not achieved 100

per cent coverage of tap water connection under Jal Jeevan Mission. One of the districts, Bilaspur recorded a high percentage of 99.3 per cent regular supply of water, followed by Hamirpur, Una, Chamba, and Kangra with 94 per cent, 92 per cent, 91 percent and 90 percent respectively. Whereas Shimla district recorded the lowest percentage of 68.1 per cent regular water among all the districts of Himachal Pradesh.

The study reveals that the districts of Mandi, Lahaul & Spiti, and Solan have not yet achieved full 100 per cent household tap water connection under the Jal Jeevan Mission, mainly due to a combination of geographical challenges, infrastructural constraints, and limited water resources. The water quality compliance is also high across the districts of the state. The districts of Bilaspur and Una reported 100 per cent water quality compliance. Whereas other districts recorded water quality compliance levels ranging from 90 per cent to 95 per cent. The study further revealed that irregular water supply in Shimla, resulting from mountainous geography, limited water sources, and old water infrastructure, along with seasonal variations and heavy water demand in city areas. The results of the study show a moderate level of awareness among rural households regarding the Jal Jeevan Mission in Himachal Pradesh.

The study indicated that there is a positive correlation between awareness level and the social impact of Jal Jeevan Mission. The calculated p-value of  $.024 < 0.05$  at 5% level of significance reveals a statistically significant relationship between the awareness level of rural households and the social impact of Jal Jeevan Mission. The study further indicated that rural households' awareness of the Jal Jeevan Mission has contributed to its social impact, leading to better hygiene, less time spent fetching water, productive use of saved time, improved children's school attendance, and increased involvement in community water-related decisions.

The study also demonstrates a positive correlation between awareness level and the economic impact of Jal Jeevan Mission. The calculated p-value of  $.002 < 0.01$  at 1% level of significance reveals a statistically significant relationship between the awareness level of rural households and the economic impact of Jal Jeevan Mission. This states, that rural households' awareness regarding Jal Jeevan Mission has contributed to its economic impact, including saving water collection time, increased earnings, reduced medical expenses, and the emergence of new livelihood opportunities due to improved water access.

## **IX. Conclusion and Recommendations**

Overall, the study concludes that the implementation of the Jal Jeevan Mission has significantly improved access to safe drinking water in the rural areas of Himachal Pradesh. The programme has achieved nearly universal coverage of functional household tap connections, though a few districts still face challenges due to geographical constraints, limited water resources, and infrastructural limitations. The findings also highlight that while water quality compliance remains high across most districts of the state, irregular water supply persists in some areas, particularly in Shimla, due to mountainous geography, limited water sources, and old water infrastructure, along with seasonal variations and heavy water demand in city areas.

Furthermore, the awareness among rural households plays a crucial role in enhancing both the social and economic impacts of the programme. Higher awareness levels are associated with improvements in hygiene practices, reduced time spent collecting water, better school attendance among children, increased community participation in water management, higher income opportunities, and reduced medical expenses.

Lastly, the study recommended to strengthen water supply infrastructure, address district-wise geographical constraints, target awareness programmes, ensure effective utilisation of water resources, ensure regular monitoring of drinking water quality and supply, and encourage the local community to participate in water management. Strengthening awareness initiatives and addressing district-level infrastructural challenges can further enhance the long lasting socio-economic impact of the Jal Jeevan Mission in Himachal Pradesh.

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