

# Evaluation Summary

## *Ex Post Evaluation of the Jodhpur Water Supply Project, Rajasthan, India*

Country: India

Sector: **Water and Sanitation, Sustainable Cities, Climate**

Date of the evaluation: 23/08/2021 – 28/02/2022

### Key data on AFD's support

**Projet numbers:** CIN 1029 & CIN 1056

**Amount:** € 94.1 MEUR (with 51% AFD share)

**Signature of financing agreement:** 02 Feb 2012 and 17 July 2013 for the 2nd agreement

**Completion date:** 15 September 2020

**Total duration:** Nine years and seven months

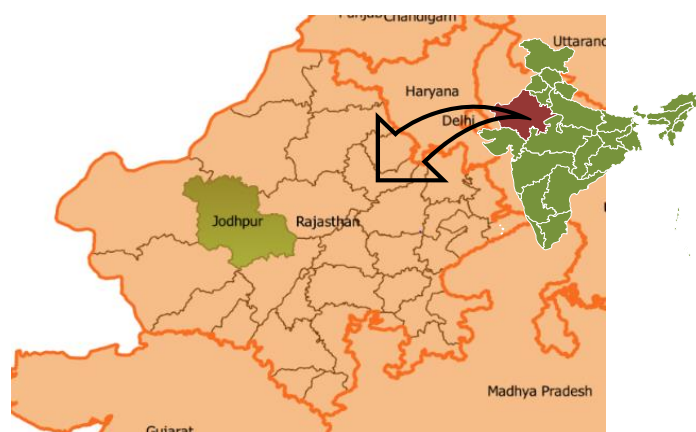
### Context

The state of Rajasthan, located in the north-western part of India, has historically experienced perpetual challenges not only in terms of adequacy of reliable water source, but also had issues pertaining to effective governance and management of associated infrastructure in the sector along with adequate water supply and demand accounting. Jodhpur, the second largest city in Rajasthan, faces similar issues strapped with a steady growth in population in the last decade. The city's water supply infrastructure needed immediate boost along with energy and water conservation efforts to ensure a forward-looking resilient system in future.

The Jodhpur Water Supply Project (JWSP) was thus conceived to cater to the water demand till the year 2029 with inbuilt systems for energy efficient and climate-smart water supply with raw water source and storage augmentation, enhancement of treatment facilities, network area expansion and reliable distribution.

### Actors and operating method

The project was implemented by the local water utility - Public Health Engineering Department (PHED) - Jodhpur, with necessary directions from the State department of PHED - Government of Rajasthan.



### Objectives

- Containing the emissions of the green-house gases (GHGs) through the hydraulic reorganization of the water distribution system, as well as energy and water efficiency measures in the city of Jodhpur.
- Improving water services through controlled augmentation of capacity and expansion, energy and water efficiency measures, and better management of operations.

### Expected outputs

- The substantial redevelopment of Jodhpur's drinking water supply system, with increased coverage and increased capacity to serve the future population along with a controlled distribution network, improved service delivery, achieved through improved energy efficient systems and hydraulic reorientation measures implemented under the project.
- These aimed to result in positive environmental impacts, induce water conservation by reduced NRW, and result in controlled greenhouse gas emissions from the water supply system of Jodhpur.

## Performance assessment

Performance Assessment has been done using the OECD Criteria, where outcome rating 'A' corresponds to Satisfactory (>80% achievement/ alignment with criterion considerations), outcome rating 'B' corresponds to Moderately Satisfactory, with some areas of improvement (>50-80% achievement/ alignment with criterion considerations), and rating 'C' corresponds to "Need Significant Improvement" (<50% achievement/ alignment with criterion considerations). The evaluation assessment are as follows;

### Relevance

Rated 'A' as per the findings of the assessment, as the project is deemed to be highly relevant for catering to the needs of different sets of end-consumers, contextual challenges faced by the city with respect to dated and sub-optimized infrastructure, socio-demographic and geographical characteristics, non-reliability of supply, skewed reliance on tankers/ borewells, etc., and in terms of adhering to futuristic policy priorities.

### Coherence

Rated 'B' as per the findings of the assessment, as internal coherence has been achieved in terms of supporting other sectoral and infrastructure projects/ programs getting executed by PHED in Jodhpur (like the AMRUT and JJM programme). There is scope of improved co-ordination of the implementing agency with other key actors such as the Municipal Corporation of Jodhpur and JDA (responsible for overall development work). External consistency warrants further scope of improvement aligned to the sectoral strategies adopted by other IDAs particularly in areas of reduction of NRW, improvements in information management systems and institutional strengthening for management of water demand and ensuring water supply service delivery.

### Effectiveness

Rated 'B' as per the findings of the assessment, as the JWSP has been effective in achieving the desired objectives. Project is currently serving more than the target population of 1.15 million and is set to meet the demands of 2029 population (1.9 million). The project achieved hydraulic reorganization (with a total of 180 MLD treatment capacity augmented at Takhatsagar and Surpura WTPs, located at an elevation, ensured gravity flow to its distribution network and providing drinking water through network of 15 ESRs), contributed to energy efficiency (19 GWH, achieved through hydraulic reorganization and 49.8 GWH through efficiencies in Raw Water Pumping and employing ESCO model), and expansion of service area of Jodhpur City (which will further add 1,74,000 people to piped water supply by 2029) have been achieved. While water supply coverage and frequency have been maintained proportionately to the growth in city population, there is an inherent need to improve the *duration of water supply* as per domestic beneficiary demand.

### Efficiency

Rated 'C' as per the findings of the assessment, as the results highlight the importance of further improvement in efficiency in terms of delivering/ achieving the desired outputs/ outcomes of the project in an economical and time bound manner. Drawbacks in initial project planning, timely approvals from other government departments on land related issues, and lengthy NOC process from the donor agency. Lack of project management efficiency at the onset of the project resulted in € 45.23 MEUR canceled due to underutilization.

### Impact

Rated 'B' as per the findings of the assessment, as benefits accruing to the domestic and non-domestic beneficiaries warrant reduced prevalence of water borne diseases, improved energy efficiencies and reduced GHG emissions (to the tune of 59,227 tonnes CO2 equivalent per year), informs about the sustainability of the project. Further, transformational impacts identified in terms of gravity flow of the system, enhanced capacities of service reservoirs and water treatment facilities.

### Sustainability

Rated 'B' as per the findings of the assessment, as the project fared well in ensuring adequacy of water and financial sustainability through private sector participation. However, more emphasis needs to be laid on the monitoring mechanisms and on exploring innovative water conservation options that can be used as a source of drinking water (catering to water security), sustained technological advancement and institutional capacity strengthening to ensure continuity of service delivery and technical absorption capacity.

### Added value of AFD's contribution

Deemed to be adding 'significant value' in terms of funding and technical support for achieving water security and sustainability of Jodhpur, the AFD funded project brought in dimensions related to energy efficiency and GHG emission reduction in the water supply sector, which was a concept ahead of time in the sector in India. The project has generated a blueprint for improved efficiencies related to these environmental and social parameters for water supply projects going forward

## Conclusions and lessons learnt

The project has been an excellent initiative by the Jodhpur PHED, the Government of Rajasthan and AFD. It has managed to achieve most of its ambitious outcomes with respect to reduction of GHG emission through energy saving initiatives, improving the water availability, ensuring water security to a larger population base. However, with effective preparatory planning, the project could have been more efficient with respect to delivering the outcomes and outputs in an economical and timely manner.

Key recommendations also warrant consideration of slum population in the preparatory, planning and budget allocation stages to enable improved water supply to all, along with a focus on softer aspects of utility governance, collection of User Charge, NRW Reduction etc. in DPRs with clear provision for utilization of the same ensuring sustainability. Future projects of similar nature could also assess technology readiness and develop roadmaps for Technology Integration.

Additionally, IEC, BCC and Capacity Building Activities warrant the scope to be mandated and provisioned to be mandatorily executed in similar projects going forward.

In terms of project execution and management, the JWSP highlighted the need for more robust monitoring and reporting mechanisms and the reporting of AFD's log-framework to be monitored on regular basis, E&S reporting and mitigation action taken reports to be managed by the Implementing Authority.