

CHAPTER - I

AUDIT APPROACH

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1.1 Introduction

The Department of Water Resources (DoWR), Government of Odisha (GoO), is the nodal department with regard to all matters concerning to state's water resources. The mandate of the department in this sector primarily focuses on administration of various navigation embankment, water for irrigation and navigation canals, drainage embankments and water storage. The irrigation requirements of the state are met through various modes of irrigation including Major and Medium Irrigation (MMI) projects and Minor Irrigation (MI) schemes. The State of Odisha is endowed with an extensive network of rivers



Map 1.1: Map indicating the river basins of Odisha

and streams. There are 11 river basins¹ covering the entire State of Odisha.

1.2 Irrigation Potential of the State

Utilisation of Irrigation plays a significant role in poverty reduction and economic growth. The state has a cultivable land of 61.80 lakh hectares. It has been assessed² that 49.90 lakh hectares can be brought under irrigation coverage through major, medium and minor (flow & lift) irrigation projects. Irrigation development has not made much headway in the state in the pre-independence era. Hardly 1.83 lakh hectares of irrigation facilities were created. After introduction of Five Year Plan by Govt. of India in 1951, attempts were made for rapid harnessing of water resources and much emphasis was laid to accelerate the irrigation development. Numbers of major, medium and minor irrigation projects have been constructed in the state during last six decades, thereby increasing irrigation facilities from 1.83 lakh hectares in 1951 to 43.07 lakh hectares in 2020.

¹ Bahuda, Baitarani, Brahmani, Budhabalanga, Indravati, Kolab, Mahanadi, Nagavali, Rushikulya, Subernrekha, and Vansadhara

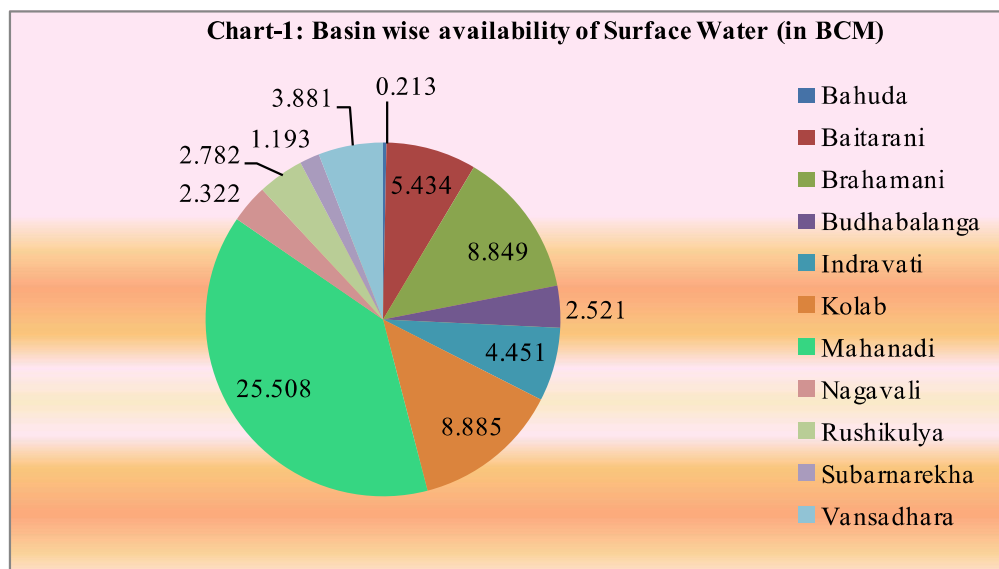
² As per Annual Report 2019-20 of Department of Water Resources, Government of Odisha

1.3 Statistics on irrigation in the State of Odisha

Odisha depends largely upon monsoon for its water resources. South west monsoon triggers rainfall in the state. About 78 *per cent* of total annual rainfall occurs during the period from June to September and the balance 22 *per cent* during the remaining period from October to May. In addition to seasonal availability of rain, the rain fall in the state also shows spatial variation *i.e.* from about 1,200 mm in southern coastal plain to about 1,700 mm in northern plateau. The long-term average annual rainfall in the state is of the order of 1,452 mm, which corresponds to an annual precipitation of about 230.76 billion cubic meters (BCM) of water. Out of the total precipitation, a portion of it is lost by evaporation & transpiration, a part goes towards increasing ground water storage and the remaining as surface run-off. The ground water reserve and surface run-off constitute the water resources of the State.

As per an assessment made in the Annual Report 2017-18, the average annual availability of surface water from State's own drainage boundary is estimated at 82.84 BCM. Considering the topography and geological limitations, 65.68 BCM of water can be utilised for irrigation purposes. Besides, there was an estimated inflow of surface water of 37.56 BCM annually from neighbouring states through interstate rivers, of which, the utilisable resources was assessed as 29.86 BCM and the remaining 7.70 BCM of water would flow into the sea. Due to increasing demands of water for various uses, DoWR had made an attempt to assess the availability of surface water by the year 2051. The assessment revealed that the surface water availability from its own drainage boundary remains more or less fixed but the inflow of surface water from neighbouring states would be reduced from 37.56 BCM to 25.27 BCM³.

The Basin-wise availability of utilisable water is given in the Pie Chart below:

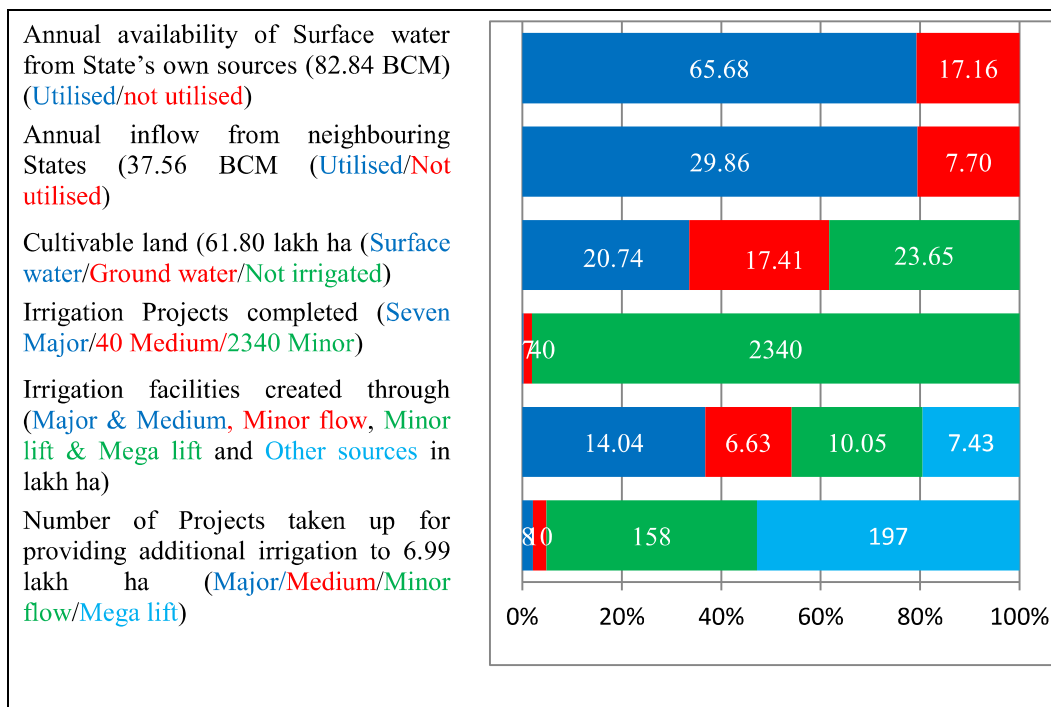


For utilising 95.54 BCM (65.68 BCM from own water resources and 29.86 BCM from water flowing from other states), the state of Odisha has taken up 15 major irrigation projects (seven completed, eight ongoing); 50 medium

³ Annual Report 2017-18 of DoWR

irrigation projects (40 completed, 10 ongoing); 197 mega lift projects (nine completed, 188 ongoing) and 2,498 minor irrigation projects (2,340 completed, 158 ongoing) to create irrigation potential of 52.37 lakh ha against which the state has claimed to have achieved irrigation potential of 38.15 lakh ha.

Chart 1.1 : Water inflow, cultivable area, Irrigation Projects in Odisha

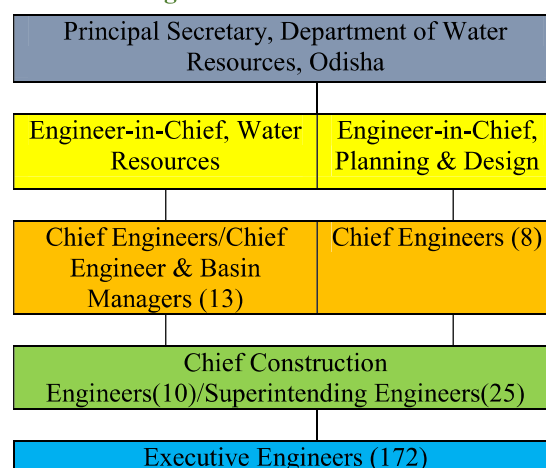


Source: Annual Report of DoWR for 2017-18

1.4 Organisational Structure

DoWR is headed by a Principal Secretary to Government of Odisha who is responsible for implementation of various schemes for construction, maintenance, improvement and creation of additional surface irrigation projects in the State. The above activities for surface irrigation are assisted by two Engineer-in-Chiefs (E-i-C), 21 Chief Engineers (CE)/Chief Engineer & Basin Managers (CE & BM), 10 Chief Construction Engineers (CCE)/25 Superintending Engineers (SEs). The creation, maintenance and improvement of surface irrigation undertaken through a number of schemes were implemented by 172 Executive Engineers (EEs).

Organisational structure chart



1.5 Audit Objectives

The performance audit was conducted to assess whether:

- Financial management of projects was adequate,
- Project deliverables were planned and executed in accordance with the intended objectives, and
- Coordination with all stakeholders was ensured and monitored for sustainable extension of benefits to the targeted population.

1.6 Audit Criteria

Audit Criteria is sourced from the following:

- State Irrigation Manual,
- State Public Works Department Code,
- Land Acquisition Act 1894 and subsequent amendments and orders,
- Government resolutions and instructions/orders relating to the works, rehabilitation *etc.*,
- General Financial Rules(GFR),
- Odisha Treasury Code (OTC),
- Annual Plan, Perspective Plan, Regulations and guidelines issued by GoO, and
- Detailed Project Reports (DPRs), standard specifications, Schedule of Rates (SoR), Analysis of Rates (AoR), contract conditions and agreements.

1.7 Scope of Audit

Performance Audit was conducted during June to September 2019 covering the period from April 2014 to March 2019. Audit test checked the records of DoWR, Project authorities, Special Land Acquisition Officers (SLAOs) of the sampled projects. The records of the implementing Units⁴ of the Department of Agriculture and Farmers' Empowerment (DA&FE) within the ambit of sampled projects were also test checked. Out of one completed major project, 17 partly completed major/medium projects, nine completed Mega Lift Projects (MLPs) and 23 completed/partly completed Minor Irrigation Projects (MIPs)(completed/implemented between January 2011 and March 2017), following projects were selected for detailed scrutiny:

Completed projects:

- (1) Upper Indravati Irrigation Project (UIIP) (extension),
- (2) Ten MIPs⁵
- (3) Nine MLP⁶

Partly completed projects:

- (1) Rengali Left Bank Canal (RLBC),
- (2) Rengali Right Bank Canal (RRBC),
- (3) Subarnarekha Irrigation Project (SIP) and
- (4) Lower Indra Irrigation Project (LIIP)

⁴ Chief District Agriculture Officers (CDAOs) of Bhawanipatna, Cuttack, Jajpur and Mayurbhanj

⁵ (a) Ankamara, (b) Barhanalla, (c) Brahamanijore, (d) Chitalparha, (e) Damkipali, (f) Jatakhalia, (g) Nagapara, (h) Nuapali, (i) Talijore and (j) Tiljodi

⁶ (a) Agalpur, (b) Amath, (c) Belgam, (d) Bharsuga, (e) Gudvella, (f) Kapsila, (g) Kusmal, (h) Laitara and (i) Utkela

1.8 Audit methodology

The Audit methodology adopted for performance audit of surface irrigation is as follows:

- An Entry Conference was held on 3 July 2019 with the Principal Secretary to GoO, DoWR to explain the Audit objectives, criteria as well as scope and methodology,
- Field Audit of offices selected by Audit team,
- Joint surveys (June – September 2019) of projects and beneficiaries with an objective to assess the veracity of the recorded data given by the audited entities,
- Physical inspections (June – September 2019) conducted jointly with the officials of DoWR for the assets created,
- Draft Performance Audit Report was issued on 27 July 2021 to Government. Replies to draft note was received on 30 July 2021 from Government. Audit findings were discussed in an Exit conference held on 10 August 2021 and deliberations of Exit conference and replies of Government were considered while finalising the Report,
- Present status of the test-checked projects has been updated based on the records subsequently furnished to Audit (September 2021).

