Critical Study on Kochi Barrage

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ABSTRACT

Barrages are hydraulic constructions erected across gutters to deflect water inflow into irrigation conduits or power generation channels. The utmost of these structures are innovated on a passable foundation. The optimum cost of those structures is seepage forces under the structure are caused by a nonlinear function of factors. There is, still, no procedure to determine the essential shower parameters like depth of distance piles or cut offs and the length and consistency of bottom in a cost – effective manner.

In this paper, what was the environmental impact assessment of kanhan swash (kochi shower).

The end of the design is to develop a design proposed for supplying water for irrigation, artificial need and drinking purposes. Being this design involves in land accession, relegation of people and submergence aspects; this is likely to produce some adverse environmental impacts, though these are anticipated to be minimum. In order to alleviate the likely adverse environmental and social impacts; to insure that the being environmental and socio-profitable conditions will further ameliorate, but in no case deteriorate; an Environmental Impact Assessment (EIA) report and Environmental Management Plan (EMP) are essential.

Keywords: Subsurface flow ·Hydraulic structures ·Barrages · Submergence.

INTRODUCTION

The Maharashtra government has prioritized the development of irrigation systems in order to transfigure unused dry regions into perpetual green fields and enriching lives of people, particularly in the failure prone areas. The Pench Project is one of such systems accepted in the history and flushing considerable extent of Nagpur quarter through its Left Bank and Right Bank Conduits. The Pench Right Bank Canal (PRBC) provides irrigation to the areas falling between Kanhan River within the north and Nag River within the south. In addition to husbandry, PRBC inventories water to Koradi Thermal power factory (KTPS) and libation to Nagpur megacity. On account of diversion of substantial amount of PRBC waters meant for irrigation in the command area to KTPS and Nagpur megacity, the downstream areas beyond Nagpur megacity, have started facing water dearths for irrigation. This has forced the authorities to suspend water force to 3960 ha irrigable command area south of National Highway-6 which fall in the tail end portions of the PRBC command area in Kamptee tehsil of Nagpur quarter. These conditions have redounded in agitations by the affected growers of the tail- end portions of PRBC command area for restoring irrigation in their area.

In view of the very fact there aren't any other reliable water coffers away from Kanhan

River to revive irrigation installation within the affected area; and no point away from at Kochi is suitable for storing the share of 15 TMC Kanhan River water allocated to Maharashtra with least submergence, the only most-suitable point at Kochi has been named for construction of a barrage.

Necessity of EIA & EMP for Kochi Project

Kochi Project is a water coffers development design proposed for supplying water for irrigation, artificial needs and drinking purposes. Being this design involves in land accession, relegation of people and submergence aspects; this is likely to produce some adverse environmental impacts, though these are anticipated to be minimum. In order to alleviate the likely adverse environmental and social impacts; to insure that the being environmental and socio-profitable conditions will further ameliorate, but in no case deteriorate; an Environmental Impact Assessment (EIA) report and Environmental Management Plan (EMP) are essential. Also from the statuary point of view, that the proposed irrigable command area under this design is about 3960 ha; this design requires environmental concurrences from the Ministry of Environment and Forest (MoEF). In order to satisfy the statutory conditions, the EIA and EMP are prepared by covering the posterior major aspects

1. Establishing the being environmental and socio-profitable conditions in the proposed design area through review of literature and conducting primary environmental monitoring, covering Pre-monsoon, Monsoon, Post-monsoon seasons of time 2009 and downtime season of 2010;

2. Environmental Impact Assessment i.e. assessing the impacts of the proposed design on colorful environmental and socio-profitable parameters;

3. Developing an Environmental Management Plan for outlining mitigation measures for limiting any likely adverse environmental and social impact due to the proposed design and to insure the environmental conditions in the design area would ameliorate further for environmentally sustainability and in no circumstances, these would deteriorate;

4. Social Assessment for assessing the Socio-profitable status of the design affected persons and displaced persons from the submergence area;

5. Developing a Rehabilitation & Resettlement Plan for resettling the displaced persons of 4 townlets from the levee seat and submergence area;

6. Developing a Compensatory Afforestation Plan for compensating the loss of timber due to the design;

Baseline Environmental Status

The being birth environmental conditions in the design area have been established through review of secondary data and primary field checks covering aspects related to land use,micro-meteorology, ambient air quality, water quality, soil quality, noise situations, submarine and terrestrial ecology, socio-profitable conditions of people, healthcare installations and structure development. The primary checks for assessing the face and groundwater quality, and groundwater oscillations were conducted in all 4 seasons of the time covering Pre- thunderstorm, Monsoon,Post-Monsoon seasons of 2009 and of and downtime season of 2010. All the other environmental checks were conducted during thePre-Monsoon andPost-Monsoon seasons of time 2009. The socio-profitable checks of the Project displaced persons were conducted formerly during the EIA period.

• Physiography of the Project Area The catchment receptacle of the design consists of colorful feathers of terrenes like hills, bottom hills, swash denes and plains. Still the command area The design has gently leaning terrain and facilitates irrigation by graveness. A many minor irrigation tanks and ponds live in the command area.

Environmental Impact Assessment

Kochi Project will provide immense benefits to the failure prone area by means of restoring irrigation installation in the severely affected command area, furnishing fresh artificial water for expansion of KTPS and drinking water to Nagpur megacity. While giving only benefits to the existing command area of PRBC, this project will not have any adverse impact on this command area. Due to its moderate submergence area this project is not anticipated to cause major environmental impacts, though some minor impacts related with land accession and submergence of zudpi jungle would take place; which still would be eased with applicable operation measures.

1. Impacts during Construction Phase
2. Impact during Operational Phase
3. Impact on Social Environment
4. Impact on Land Use
5. Impact on Surface Water Resources
6. Impact on Groundwater Resources
7. Impact on Ecology and Bio-Diversity

Environment operation plan

Kochi Project would have some social and environmental counteraccusations though they are anticipated to be the minimum. To further minimize the environmental losses and negating adverse impacts to the possible extent through specialized judgment and perpetration of Applicable mitigation measures, an Environmental Management Plan has been developed

Environment Management Plan during Construction Phase

Undertaking excavations and construction conditioning at the design spots with utmost care to the environmental aspects and safety measures;

- Using the generated muck from design spots for constructing the earthen levee if suitable, or filling the low-lying areas;
- Stacking the fat material in linked muck disposal spots down from the design point, with applicable pitches, in a methodical manner;
- Condensing of muck dumps, covering them with clod shoveled from construction spots and bearing colonies on them for minimizing corrosion;
- Espousing applicable measurers for minimizing climate and noise situations during firing; completing construction conditioning only during day so as to avoid noise impacts on the encompassing areas;
- Undertaking dust control measures similar as water smattering on the haul roads;
- Maintaining the diesel powered construction vehicles duly, for minimizing bank emigrations;
- Furnishing noise protection bias like earmuffs and earplugs to the workers operating the high noise generating outfit;

Public Health Management

Public Health management measures include:

- Undertaking adequate curative and preventive measures for eliminating the risk of outbreak of any water borne and parasitic disease in the area;
- Strengthening the prevailing healthcare facilities by appointing adequate number of medical and paramedical staff;
- Maintaining good environmental, health and sanitation conditions at the development camps; and Carying out regular surveillance and health improvement programs by the Health Department for preventing health disorders in command area.

Conclusions

The proposed Kanhan River Project will provide assured surface water irrigation facility to 3960 ha ICA. With provision of its immense benefits to the irrigation scarce drought prone area of Kamptee tahasil in Nagpur district, this project would lead for overall socio-economic and infrastructure development of the region. By supplying considerable quantities of food and non-food products, this project would be beneficial even to the other areas. With impressive Benefit Cost Ratio of 1.542 and least minimal environmental and social impacts; the proposed Kochi Barrage Project is maintainable.

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