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Case Study on Interlinking of Godavari and Manjra River

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ABSTRACT: The interlinking of rivers involving inter basin water transfer has canals, tunnels or water lifts, for water to flow from one river basin to another and making use of excess water. In India rainfall is dependent on the south-west and north-east monsoons or on the shallow cyclonic depressions and disturbances and on violent local storms which form regions where cool humid winds of the sea meet the dry winds from the land and occasionally reach cyclonic dimension. Hence some areas are affected by the droughts while other areas are affected by seasonal floods. There is a general perception that with growing human population and rising standards of living, the available supplies of fresh water on the planet are becoming insufficient to meet demand. It will be scarce, expensive to develop and maintain and valuable in use.

KEYWORDS: interlinking, droughts.

I. INTRODUCTION

While the projects are the building blocks for development, the irrigation reservoir projects at times result in submersion of houses and house sites rendering people homeless besides causing loss of valuable agricultural land affecting the over all social fabric of the affected people. Such adverse social impacts due to irrigation projects are generally unavoidable keeping in view the benefits likely to accrue from them. However it is imperative to minimize such adverse affects and for providing alternative sites for re-settlements through provision of house sites, housing, infrastructure related to education, roads, drinking water, electricity, hospital, etc and also extending suitable rehabilitation support and thus enabling the adversely affected people to regain at least their former levelsof living.

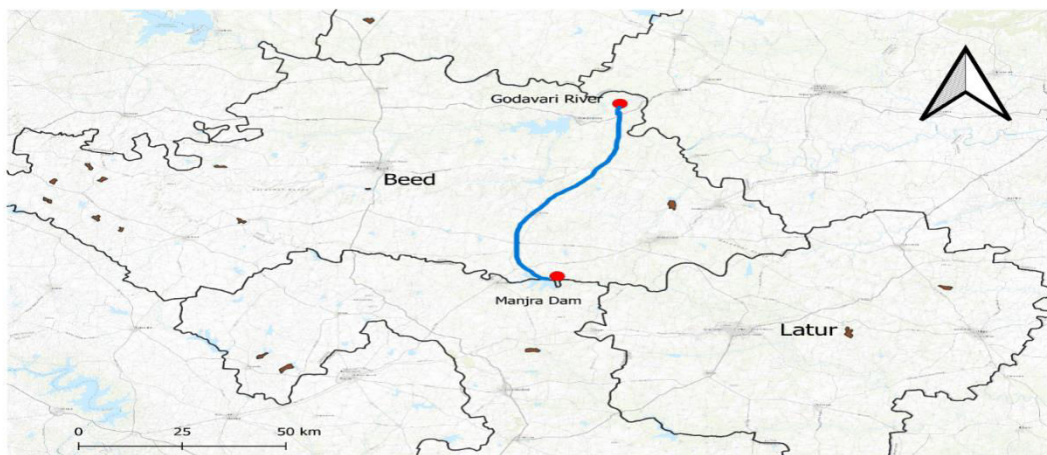


Figure 1 Plan Made by QGIS

The same requires careful planning and implementation of the resettlement and rehabilitation management plan with built in monitoring system both by the project managers as well as the affected people. 1.02 The Ministry of Environment and Forests (MOEF) and Central Water Commission (CWC) of the Government of India are the nodal agencies for scrutiny and sanction for the irrigation projects. In addition, requirement for clearance of the project and obtaining permission from the Ministry of Social Justice and Empowerment and Ministry of Tribal Affairs (MOTA) Government of India are also essential.



The MoEF is very keen on minimizing and if possible avoiding both direct and indirect adverse impacts while approving such projects. The National Water Development Agency and the Government of Madhya Pradesh are also equally interested in minimizing the adverse/negative impacts on the ground and on population before implementation of the project. Therefore, there is an urgent need for formulation and implementation of a detailed Resettlement and Rehabilitation Plan for minimizing adverse socio-economic environmental impacts and making provisions for alternatives for reducing /avoiding such adverse effects, if any.

II. AIMS & OBJECTIVES

Aim:-

The main aim of the study is to be able to connect the GODAVARI TO MANJRA rivers to solve problem facing to flood And drought In Marathwada region.

The Objectives are as following:

- 1) Flood prevention.
- 2) Generation of electricity.
- 3) Transportation.
- 4) Ecological issues.
- 5) Aqua life.
- 6) Areas getting submerged.

III. AREA OF STUDY

The total planning is About to Make Latur city free from Droughts by Interlinking the Godavari and Manjra River By closed Canalar by open canal by gravity or lifting.

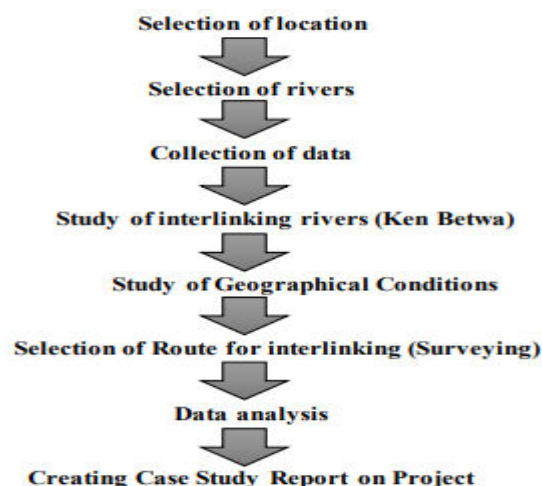
The National River Interlinking Project will comprise of 30 links to connect 37 rivers across the nation through a network of nearly 3000 storage dams to form a gigantic **South Asian Water Grid**. It includes two components:

▪ **Himalayan Rivers Development Component:**

- This component aims to construct storage reservoirs on the Ganga and Brahmaputra rivers, as well as their tributaries in India and Nepal.
- The aim is to conserve monsoon flows for irrigation and hydropower generation, along with flood control.
- The linkage will transfer surplus flows of the Kosi, Gandak and Ghagra to the west. A link between the Ganga and Yamuna is also proposed to transfer the surplus water to drought-prone areas of Haryana, Rajasthan and Gujarat.

▪ **Southern Water Grid:** It includes 16 links that propose to connect the rivers of South India. It envisages linking the Mahanadi and Godavari to feed the Krishna, Pennar, Cauvery, and Vaigai rivers. This linkage will require several large dams and major canals to be constructed. Besides this, the Ken river will also be linked to the Betwa, Parbati, Kalisindh, and Chambal rivers.

IV.METHODOLOGY





- 1) **Selection of location:** First select where this project needed, where Drought will happens in future or present condition.
- 2) **Selection of River:** After selection of location then find out perennial rivers and seasonal river to overcome flood situation or drought situation. In this we select perennial River as Godavri River And Seasonal River as Manjra River.
- 3) **Study of interlinking River:** In this we take Ken-Betwa project as reference for project because Ken-Betwa is successful project.
- 4) **Study of Geographical Condition:** After selecting or finalizing river we study the Geographical condition means where hilly area is Available where not.
- 5) **Selecting of Route For interlinking:** After Geographical Survey we finalize the route for interlinking, mostly we preferred hilly region to minimize cost. As hilly region we do not need to provide lifting, water flows freely as because gravitational force.
- 6) **Data Analysis:** After all studying this area we analysis data for any correction.
- 7) **Creating Case Study Report on Project:** Finally we made report on Case study.

V. LITERATURE REVIEW

1) Nidhi Pasi (April 2012)

Paper Name :

theoretical foundations and relevant literature that has been used to develop and understand

Conclusion :

The overall objective of this study was to examine planning, management, policy formulation and decision-making for water resources development in India through the case study of the proposed ILR scheme in India. The aim was to explore specific events and processes associated with the ILR scheme to understand and find out why certain decisions are undertaken

2) Dharmendra Mehta , Naveen K. Mehta (19 Mar 2013)

Paper Name :

the basis of secondary data available from various sources along with literature review

Conclusion :

The secondary data was collected from magazines, books, internet, industry journals etc. Literature review has shown prior research work done in this area. Significant inputs were found in the subject matter with reference to interlinking rivers projects. The impact on the environment has been analysed

3) Mary C. Georgei, Prakash D. Korgaonkar & K. Geetha (2, Apr 2014)

Paper Name :

The concept of linking of rivers or inter-basin transfer of water is essentially based on the availability of surplus of water in the donor river especially at the point of diversion to the deficit river basin

Conclusion :

The solution for implementing the ILR project is centralization of all the rivers and to form a National authority consisting of expertise from various fields like policy makers, scientists, hydrologists, engineers, economists, NGOs, environmentalists, GIS experts, farmers from various regions of country.

4) Swathi Lakshmi, Sameer Saran , S.K. Srivastav , Y.V.N Krishna Murthy (09 – 12 December 2014)

Paper Name :

A WiFS Satellite image with green and NIR bands are used to generate Normalized Difference Water Index which helps in identifying the inundated areas

Conclusion :

It is indeed important to consider the decision of every individual in distributing the water resources. So, the obtained routing map from developed spatial decision model is published on to the GeoServer and the same is added on to the Bhuvan portal using the generated KML file.

5) Ravi Babu B and P Padmavathi(21-08-2016):

Interlinking of Rivers is nothing but joining the rivers of the country by networks of canals and reservoirs. Interlinking of rivers in India was proposed for the first time during British Colonial rule. The Indian Government has established the National Water Development Agency to study the interlinking of rivers under the Ministry of Water Resources.

Conclusion:

Interlinking of rivers is definitely a good solution for the scarcity of water, if interlinking has to be done after detailed socio-economical studies without causing any problem to the environment or aquatic life. Interlinking of



rivers may affect the native species of Krishna River in the terms of their feeding and breeding activity. It is advised to do the environmental impact assessment before interlinking the rivers.

VI. ADVANTAGES AND DISADVANTAGES

ADVANTAGES OF INTERLINKING:

- This project can solve the problem of drought and flood because at the time of need the river which causes flood can give water to the area of the river which has a shortage of water
- because the water can be stored or water can be transferred from water surplus area to the deficit. Ganga and the Brahmaputra region can get rid of floods that come every year with the help of this project
- The irrigation, land will also increase by about 15 percent.
- 15,000 km of river and 10,000 km of navigation will be developed. Thereby reducing the transportation cost.
- Large scale afforestation and about 3,000 tourist spots will be built.
- It is also possible to get jobs for landless farmers in rural areas.

DISADVANTAGES / LIMITATION OF INTERLINKING:

- Rivers are being considered an integral part of our life from the beginning, and any kind of human intervention can prove to be destructive.
- For the completion of the Interlinking River project, many big dams, canals, and reservoirs will have to be constructed due to which the surrounding land will become swampy and will not be suitable for agriculture.
- This can also reduce the production of food grains
- State water disputes will lead to social unrest.

VII. RESULT

The main purpose of this project is to interlink the Godavari and Manjra rivers so that, flood water can be transferred to drought areas and agricultural fields even though many routes are obtained for the most possible routes are selected as our motto is to interlink the Godavari and Manjra rivers in a shortest path. constructing canal in hilly terrains and forest areas is avoided huge expenditures and damage.

The solution for implementing the ILR project is centralization of all the rivers and to form a National authority consisting of expertise from various fields like policy makers, scientists, hydrologists, engineers, economists, NGOs, environmentalists, GIS experts, farmers from various regions of country. The canals can be substituted with lined tunnels which may reduce water losses due to infiltration. Also the covering top of canals with solar panels will reduce evaporation losses and can generate electricity which will have benefit-cost ILR projects. Also the zero land acquisition cost by interlinking of river basins by tunnels can be investigated.

The use of different land use patterns for setting up of solar power projects can be curtailed by Solar panels covering canals. Thus the two crucial components of infrastructure i.e. water and power can be conserved and generated respectively. Also the crushing of basalt or dolerite rocks bored from tunneling can be used as construction material in form of coarse and fine aggregates which is becoming scarce a scarce commodity in India. The study by use of GIS with hydrological tools and geological study for availability of construction material, proper planning of conservation of environment, study of climate change.

VIII. CONCLUSION

Interlinking of rivers have many benefits. But this should be the last resort. India receives plenty of rainfall, but most of these rainwater is going into drains. If we capture all these rainwater, India will not face water scarcity in the coming years. If India invests enough on water conservation mechanisms such as rainwater harvesting, watershed management etc on a war-footing, we may not need Inter-basin water transfer projects. Interlinking of rivers is definitely a good solution for the scarcity of water, if interlinking has to be done after detailed socio-economical studies without causing any problem to the environment or aquatic life. The solution for implementing the ILR project is centralization of all the rivers and to form a National authority consisting of expertise from various fields like policy makers, scientists, hydrologists, engineers, economists, NGOs, environmentalists, GIS experts, farmers from various regions of country. The canals can be substituted with lined tunnels which may reduce water losses due to infiltration. Also the covering top of canals with solar panels will reduce evaporation losses and can generate electricity which will have benefit-cost ILR projects. Also the zero land acquisition cost by interlinking of river basins by tunnels can be envisaged. The use of different land use patterns for setting up of solar power projects can be



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- 5) Ravi Babu B and P Padmavathi(21-08-2016): Interlinking of Rivers is nothing but joining the rivers of the country by networks of canals and reservoirs. Interlinking of rivers in India was proposed for the first time during British Colonial rule.
- 6) Harikumar Pallathadka(October, 2020): Water is one of the principle elements which not only governs life on earth but also influences economic, industrial and agricultural growth of mankind. There is a general perception that with growing human population and rising standards of living, the available supplies of fresh water on the planet are becoming insufficient to meet the demand.
- 7) Jayanta Bandyopadhyay, Shamapervvee(December 11, 2004): All life forms and human economic activities are critically dependent on water, the movement of which is governed by the global hydrological cycle. At the global scale, “freshwater lakes and rivers, which are the main sources for water consumed by the human societies, contain on an average about 90,000 bn cubic meters (BCM) of water, which is about 0.26 per cent of total global freshwater reserves”



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