Interlinking of Rivers in Maharashtra
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Abstract:
India is one of the few countries in the world endowed with reasonable land and water resources. Being a monsoon country, the rainfall is erratic, unevenly distributed and hence water scarcity in some parts and floods in other parts frequently occur. In order to produce to feed the expected population of 1650 M in 2050, there is a need to bring about 150 M Ha under irrigation from 1

Water is undoubtedly the most important natural resource on the planet, as it sustains all aspects of life in a way that no other resource can. United Nations agencies and the World Bank have claimed that these scarcities will escalate in the future, creating serious problems for humankind and the environment. India needs to adopt a crystal-clear water mission that can help us to use available water resources to fields, villages, towns and industries round the year, without harming our environment.

Keywords: Interlinking, River Analysis, ElevationProfile, Interbasin water transfer.

I. INTRODUCTION

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. India has a monsoon climate. Except for a small coastal area in the South, almost the entire rainfall occurs during three to four monsoon months. Thus cultivation during non-monsoon months is irrigation dependent. A characteristic of the monsoon climate is variability of rainfall from year to year. India has an average rainfall of 1,000 mm, which varies from 500 mm to 2,500 mm in different parts. The variability makes farming uncertain and subsistence agriculture is impossible. The monsoon months is the period of one in five below-normal rainfall years. India is basically an agricultural country, and all its resources depend on agricultural output. In India, 55% of agricultural output is from irrigated lands. Moreover, average farm incomes have increased from 80-100 % as a result of irrigation, while yields have doubled compared with those achieved under the former rain-fed conditions. Water will no longer be cheap and plentiful. It will be scarce, expensive to develop and maintain and valuable in use.

II. WHY INTERLINKING OF RIVERS?

Drought, floods and shortage of drinking water: India receives about 4,000 cubic kilometers of rain annually, or about
1 million gallons of fresh water per person every year. However, the precipitation pattern in India varies dramatically across distance and over calendar months. Much of the precipitation in India, about 85%, is received during summer months through monsoons in the Himalayan catchments of the Ganges-Brahmaputra-Meghna (GBM) basin. The northeastern region of the country receives heavy precipitation, in comparison with the northwestern, western and southern parts. The uncertainty of start date of monsoons, sometimes marked by prolonged dry spells and fluctuations in seasonal and annual rainfall is a serious problem for the country. The nation sees cycles of drought years and flood years, with large parts of west and south experiencing more deficits and large variations, resulting in immense hardship particularly the poorest farmers and rural populations. Lack of irrigation water regionally leads to crop failures and farmer suicides. Despite abundant rains during July–September, some regions in other seasons see shortages of drinking water. Some years, the problem temporarily becomes too much rainfall, and weeks of havoc from floods. This excess-scarcity regional disparity and flood-drought cycles have created the need for water resources management. Rivers inter-linking is one proposal to address that need.

III. PROPOSED INTERLINKING PROJECT FOR MAHARASHTRA:

LINK OF GODAVARI TO BHANDARDARA DAM:

LINK OF BHANDARA DAM TO SINA ORIGIN

Water is diverted from Bhandardhara to sina Origin.

LINK MANJARA DAM TO TERNA RIVER ORIGIN (OSMANABAD)

Terna River is an important tributary of Manajara river in Osmanabad district which flows through AUSA and NILANGA talukas in Latur.

MODEL: OVERVIEW OF THE PROJECT TO BE EXECUTED

The Proposed view of Interlinking to be executed.

Figure.4. The Model Of the Interlinking of rivers proposed
IV. RESULT ANALYSIS

TOTAL DISTANCE COVERED BY THIS LINKING PROJECT: 399.8KMS(Approx)  
TOTAL COST OF CONSTRUCTION REQUIRED FOR THE PROJECT: 5349.842Crores

Table 1. Diversion Used in River Linking

<table>
<thead>
<tr>
<th>Starting point</th>
<th>End Point</th>
<th>Straight distance (KM)</th>
<th>Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhandardara</td>
<td>Kotul</td>
<td>25.26</td>
<td>717.7 m or 2354.8 feet</td>
</tr>
<tr>
<td>Kotul</td>
<td>Pokhari</td>
<td>37.31</td>
<td>695.5 m or 2281.8 feet</td>
</tr>
<tr>
<td>Pokhari</td>
<td>Ghogargoan</td>
<td>82.08</td>
<td>596.2 m or 1955.9 feet</td>
</tr>
</tbody>
</table>

BHANDADARA TO SINA ORIGIN  
Distance: 143.36 KM

ADVANTAGES OF INTERLINKING OF RIVERS
1. Create the potential to increase agricultural production by an additional 100 per cent over the next five years;
2. Avoid the losses of the type that occurred in 2002 to the extent of $550 million by the loss of crops because of extreme drought or flood condition;
3. Save $ 565215000 a year in foreign exchange by avoiding importing oil;
4. Unify the country by involving every Panchayat as a share holder and implement agency;
5. Provide for enhancing the security of the country by an additional waterline of defense;
6. water crisis situation by providing employment to the 10 lakh people for the next 10 years;
7. Eradicate the flooding problems which recur in the north-east and the north every year;
8. Solve the alternative, perennial water resources;
9. The large canals linking the rivers are also expected to facilitate inland navigation too;
10. Increasing food production from about 200m tones a year to 500m

DISADVANTAGES OF INTERLINKING OF RIVERS
1. Environmental costs (deforestation, soil-erosion, etc.)
2. Rehabilitation: not an easy task
3. Social unrest/Psychological damage due to forced resettlement of local people (for example, Sardar Sarovar Project)
4. Political effects: strained relationship with neighbors (Pakistan, Bangladesh)

V. CONCLUSION

The inter-basin transfer project is to be funded mainly by the government of India, international agencies and market borrowings. The interlinking of rivers, therefore, will bring relief to utilize surplus water flow to water deficit regions in southern and western India, control twin problem of flood and drought, irrigate additional areas, help to produce additional food grain to cater to the needs of country’s ever growing population and generate electricity to an otherwise energy starved country. However, inter-linking of rivers alone may not solve all the water related problems of the country, some other ways to conserve water like rainwater harvesting, water reuse, watershed management and regulating the optimal exploitation of underground water resources need to be developed at a much faster rate and efficient way than what is existing today.

VI. ACKNOWLEDGEMENT

Firstly I would like to express our gratitude to my guide Mrs.Sneha.P.Mahalle for the opportunity to work on this project under their guidance. They have provided an invaluable help with ideas and discussions throughout my entire time working on this project. It was an honor and a privilege to work with them. They also provided help in technical writing and presentation style and I found this guidance to be extremely valuable.I thanks to all who have contributed directly or indirectly to this work.

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