

Interlinking of Rivers and Construction of Dams in Gujarat

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ABSTRACT:

India is a country which has reasonable amount of land and water resources. It has good amount of rainfall every year, but the problem is that the rainfall is not evenly distributed which results in water scarcity in some places and floods in other. Rivers play an important role in irrigation, transportation and generation of electricity. Some holy rivers pass through the major states. Hence good management of river water is necessary. Interlinking of rivers and construction of dams may help overcome this problem.

KEYWORDS: *Scarcity, Floods, Drought, Interlinking of rivers.*

INTRODUCTION:

Water is without doubt one of the most undervalued resources on earth. Without water life would not exist on the planet. All living things rely on water and without it they die, quite quickly. Humans can survive without food for up to a month, but without drinking water survival is limited to a matter of days. It's not surprising that throughout history, people have settled near to water sources for drinking and to grow crops. The development of Indus valley civilization and Harappa civilization in India is a great example. India is has reasonable amount of rainfall every year during the monsoon season, but it is unevenly distributed throughout the country due to which some regions have scarcity of water where as some face floods. Gujarat is prone to drought once in three years while states like Rajasthan, Haryana, Andhra Pradesh and Karnataka tend to have two years of drought in a period of five years. 'Drought, Crisis Management Plan-2015' says that around 16% of the country and 68% of the sowing area nationally is drought prone. In the states mentioned above, droughts are caused mainly because of the failure of the South-West monsoon which is responsible for 75% of the rainfall in the country, the report says. (The South-West monsoon is active in the country from June to September.)

METHODOLOGY:

The Saurashtra region has been drought prone for decades due to scarce rain. it has to face famine every three to four years. The topography of Saurashtra region is like an inverted saucer in which central area of Chotila and Jasdan are situated on higher altitude. There is no slope on each side of this area and there exist rivers of very short length. There is no big or perennial river in the Saurashtra region. The shortage of water in this region continues even though the intensive efforts to harness the rain water of Saurashtra are made through construction of the water harnessing structures like big dams, thousands of check dams, deepening of existing tanks, khet talavadios, bori bandh, etc.

INTERLINKING OF RIVERS IN GUJARAT – SAUNI YOJNA:

It has been gathered from the experience of the irrigation projects of Saurashtra region that, most of the dams are not filled up completely every year. On the other hand, in south Gujarat and central Gujarat, the rain water flows into the sea as the dams situated in this region do not have enough capacity to store all the water hence the natural and essential resource is wasted.

Government has made planning for the beneficial use of additional 1 MAFt (1 million acre feet) i.e 43,500 Mcft (million cubic feet) flood water of sardar sarovar dam and accordingly allot for Saurashtra region to fill 115 existing dams in interest of the farmers and people. The project is known as “Saurashtra Narmada Avatarana Irrigation Yojana” at the estimated cost of about 10 thousand crore rupees , (Sauni Yojana) has been launched to divert one MAFt excess over flowing flood water of Narmada allocated to Saurashtra Region. The excess over flowing flood water of Narmada will be distributed to 115 reservoirs of eleven districts of Saurashtra through total 1126 km long four link pipelines benefitting 10,22,589 acre land.

These links are as follows:

Link 1: From Machhu-II dam of Morbi district to Sani Dam of Jamanagar District: Having carrying capacity of 1200 cusecs, 30 reservoirs of Rajkot, Morbi, Devbhoomi Dwarka and Jamanagar Districts will be filled and 2,02,100 acre area will be benefitted. The works for about 57.67 Km long pipeline of initial reach of this link are

awarded and are under progress.

Link 2: Limbdi Bhogavo-II Dam of Surendranagar District to Raidi Dam of Amreli District: having carrying capacity of 1050 cusecs, 17 reservoirs of Bhavnagar, Botad and Amreli Districts and area of 274700 acres will be benefitted. The works for about 51.28 Km long pipeline of initial reach of this link are awarded and are under progress.

Link 3: From Dholidhaja Dam of Surendranagar District to Venu-I Dam of Rajkot District: having carrying capacity of 1200 cusecs, 28 reservoirs of Rajkot, Jamanagar, Dev bhoomi Dwarka, Porbandar, Morbi and Surendranagar Districts and 198067-acre area will be benefitted. The works for about 66.30 Km long pipeline of initial reach of this link are awarded and are under progress

Link 4: From Limbdi Bhogavo-II Dam of Surendranagar District to Hiran-II Irrigation scheme of Junagadh :having carrying capacity of 1200 cusecs , 40 reservoirs of Rajkot, Surendranagar, Junagadh, Porbandar, Gir Somnath, Amreli and Botad Districts and area of 3,47,722 acre will be benefitted. The works for about 54.70 Km long pipeline of initial reach of this link are awarded and are under progress.

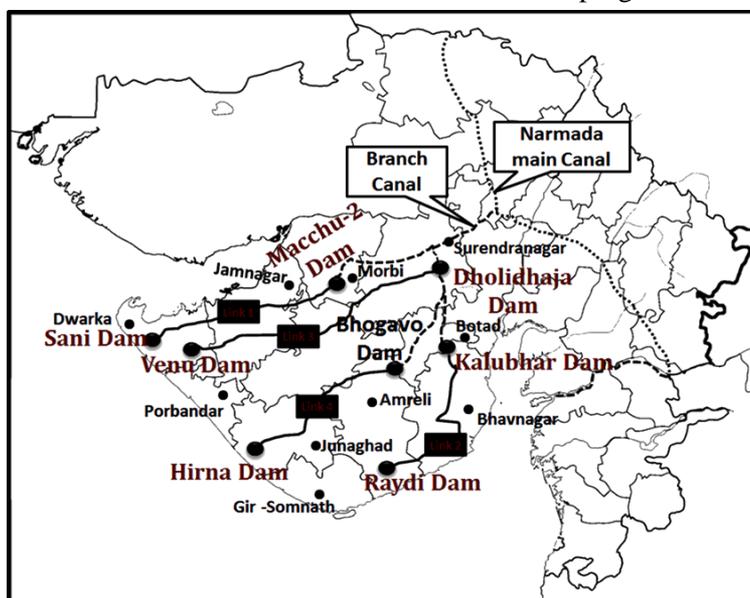


Fig 1: SAUNI YOJNA (4 LINKS)

Table No 1: Details of Links (Ref: examrace study material)

	Link 1	Link 2	Link 3	Link 4
Path	Machhu-II dam Morbi to Sani Dam Jamanagar	Limbdi Bhogavo-II Surendranagar to Raidi Dam of Amreli	Dholidhaja Dam of Surendranagar to Venu-I Dam of Rajkot	Limbdi Bhogavo-II Dam of Surendranagar to Hiran-II of Junagadh
Carrying Capacity	1200 cumecs	1050 cumecs	1200 cumecs	1200 cumecs
Reservoirs	30	17	28	40
Area	2,02,100 acres	2,74,700 acres	1,98,067 acres	3,47,722 acres
Districts	Rajkot, Morbi, Devbhoomi Dwarka and Jamanagar	Bhavnagar, Botad and Amreli	Rajkot, Jamanagar, Dev bhoomi Dwarka, Porbandar, Morbi and Surendranagar	Rajkot, Surendranagar, Junagadh, Porbandar, Gir Somnath, Amreli and Botad
Lengths	180 km	253 km	245 km	448 km
Started	56.67 km	51.28 km	66.30 km	54.70 km

Taking into consideration the growing needs of people it has become the need of the hour to develop techniques and compatible methodologies which utilize the existing resources. This chapter suggest the application of interlinking of dams to solve the severe drought problem as achieved in Saurashtra region. Such techniques with some modification can be applied at different parts of the country facing severe drought problem.

FUTURE SCOPE:

Maharashtra witnessed the worst drought in the year 2015, only 49% of Maharashtra’s total dams were filled in year 2015 where as almost 72% of dams were filled in year 2014. The highest number of these drought affected villages 8,522 are from the Aurangabad division which covers Marathwada. It is in a part of the scanty rainfall area of Central Maharashtra

The solution to droughts in Marathwada using advanced construction techniques:

The region suffers from complete lack of water management policy.

- Residents of the Krishna Basin have the first natural right over this water, but this massive 2715 MCM water is not to be released for the Krishna basin, but is slated to flow to water surplus Konkan and down to sea. This is when the whole Krishna basin is facing severe water scarcity.
- This water is currently slated to be diverted out of the drought affected Krishna basin. It is technically feasible to release this water into the Krishna basin rather than diverting Konkan and then to sea.

Marathwada is a landlocked region. The entire region is drained by the Godavari River. Major dams in Godavari basin are,



Table no 2: Major Dams in Maharashtra

DAM	REGION
1. Bhandardara	Ahmednagar
2. Jayakwadi stage 2	Aurangabad
3. Upper buldhana	Jalna
4. Dudhna	Parbhani
5. Sindgpana, bendsura	Beed
6. Majira	Latur
7. Ujjani	Aurangabad

According to the civil engineers, Mrs. Parineeta Dandekar (Pune) and Mr .Himanshu Thakkar (Delhi),

- It is a very big irony that water is transferred from water deficit area of Bhima Basin to surplus area of Konkan region. The hydropower stations of Khopoli, Bhivpuri, Bhira has more than 136.64 MCM of water till July 2015
- Water released from Tata dams could flow to Ujjani dam (which is at Negative Storage or below the zero live storage level currently) and from there can be used in the basin. It can be taken to Beed and Osmanabad in Marathwada through pipelines already in place for drinking water supply.
- Through the Bhima-Seena Link Tunnel, it can flow into Seena River and can be used by bordering parts of Marathwada and Solapur District for drinking water, provided it is possible to ensure that it does not get used up for sugarcane and sugar factories and such other non essential water use activities.

The water released by these dams through tunnels can be taken used across the basin in multiple ways in the interest of the drought affected farmers and others and leads to sustainable future.

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