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RBOs; the Effective way for Implementation of the Interlinking of Indian Rivers.

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Abstract

The aspect of river Linkages vis-à-vis Implementation , in general, was discussed in group discussion at SAWAF II, Islamabad, Dec2002.when my Paper "Dams and Urbanization, case studies of some cities in India" was selected for presentation in the said Forum.It was felt by many delegates that as India is already having actual long experience in the field of River Basin Organizations, as one of the S.A. Countries , the subject may be discussed at GWP and WWFIII level. I did share my views at WWFIII,Kyoto ,Japan (March-2003) and also had oral Presentation of my Paper at International River Symposium,Brisbane, Australia(Sept-2004). My present Paper covers this aspect keeping in view the ACTUAL FIELD EXPERIENCE of about eight years of RBOs formed in Maharashtra State .

Keywords

River Linkages , Implementation,River Basin Organizations, Eight Years

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INTRODUCTION

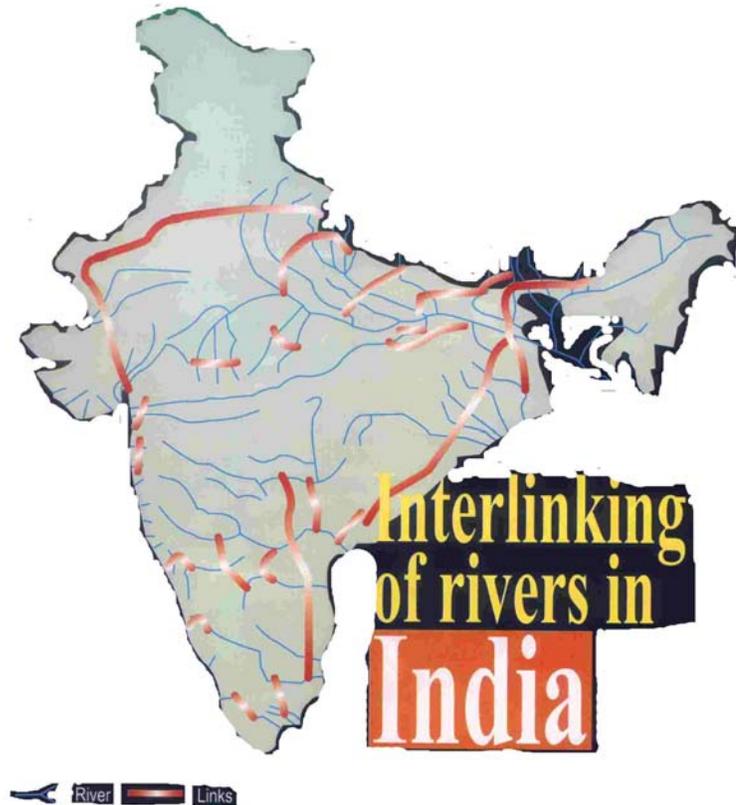
Most of us are aware that only about 2.5% of Water Resource available on this Planet Earth is potable and remaining 97.5% is Sea Water. If we remove Water in the form of icebergs on North and South Poles hardly 0.26% Water is available for Humanbeing ,Irrigation Industry etc. This is true for past thousands of years and future thousands of year. The Quatum is fixed but the Population /Inustrial demands are not!

Therefore the efficient Water Resources Management and storing / diverting available water Resource is the need of the day. The construction of various storages as and when required in and/ for isolated pockets ,without planning, is the most undesirable approach.. India is a vast Country with varying climatic conditions- snow clad peaks of Himalaya, Desert of Rajsthan , place like Cherapunji getting the highest rainfall area in the World. (1000cm.). About 40% of rain water is going to sea unutilized. The Dams / Storages are not the only solutions. Here comes the important aspect of River Diversions. This is not a new concept at all ,and is under study for about last thirty two years. Not only Developing Countries has adopted it but even China has recently completed Three Gorges Project. We ,in India , have also tackled it in the rt past .

BACKGROUND

After independence(1947) ,India witnessed an upsurge in the developmental efforts for harnessing of water for the Country's immediate needs. In the early days, after independence, growing more food was the prime consideration. The latest technology of buildings dams, gates, canals, aqueducts, hydropower stations, pumps, pipelines and elevated reservoirs was mastered by the new Indian generation and the water sector was made fully self reliant. That coupled with Government's priority to these works in the successive plan period led to

remarkable physical achievements over the five decades of the republic. Emphasis is now shifting towards the improved management of the water infrastructure, higher efficiencies in water use and, protection of water quality.



In the past, the concept of development remained centered round the 'Administrative District' of the Government as unit. But it did not have in many situation any meaningful significance particularly in the context of the management of natural resources like water, There has to be a clear shift from the earlier ' Law and Order' oriented administrative set up for revenue collection to that for ensuring sustainable all round development, based mainly on the scientific management of the natural resources. The watersheds ,the sub basins and the basins have been linked hierarchically as more meaningful natural units with which the people should be able to relate themselves in a purposeful manner. Proper governance structures to meet with the new requirements of these natural units are coming up now. The water resources administration was restructured for meeting with the new requirements for efficient management of water in an environmentally sustainable and socially acceptable manner. Proper institutional mechanisms for managing the water resources in the most effective manner for the different types of basins are now planned effectively. Keeping in view this aspect at State level, to start with ,for achieving that objective, a time bound programme for establishing truly purposeful governance structures in the different river basins and sub basins was studied indepth and handled in State.

This experience may prove as a Pilot Project useful to form RBOs with entire River Basin as an unit

Water Account of India			
◆ Total Flow in Rivers	-	1953	BCM
◆ Replenishable Ground Water	-	432	BCM
◆ Utilizable Water Resource	-	1086	BCM
Surface Water	-	690	BCM
Ground Water	-	396	BCM
◆ Present Agri. Use	-	525	BCM
◆ Return Flow expected for utilization in 2050	-	169	BCM
◆ Geographical Area	-	329 M. Ha.	
◆ Culturable Area	-	186 M. Ha.	
◆ Created Irrigation Potential	-	93 M. Ha.	
◆ Average Annual Rainfall	-	1170 mm	
◆ Annual Precipitation	-	4000	BCM

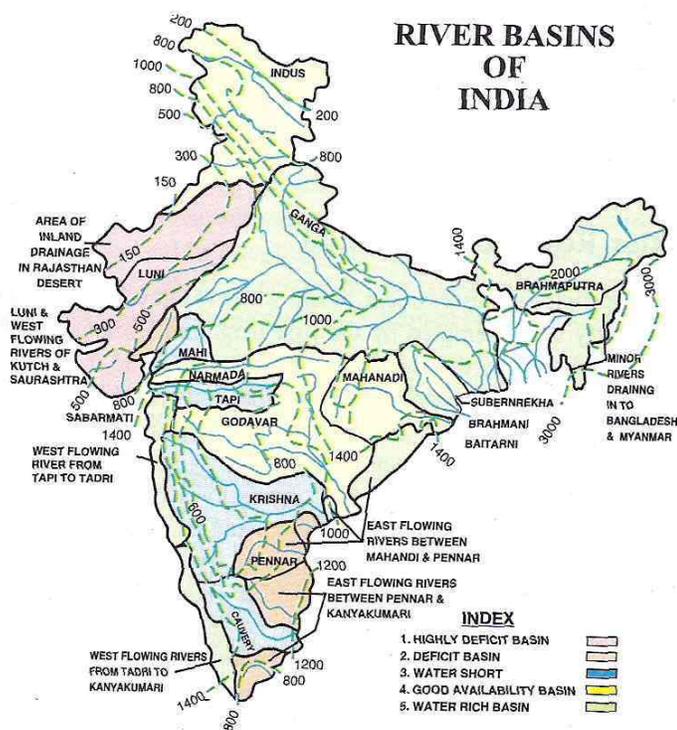
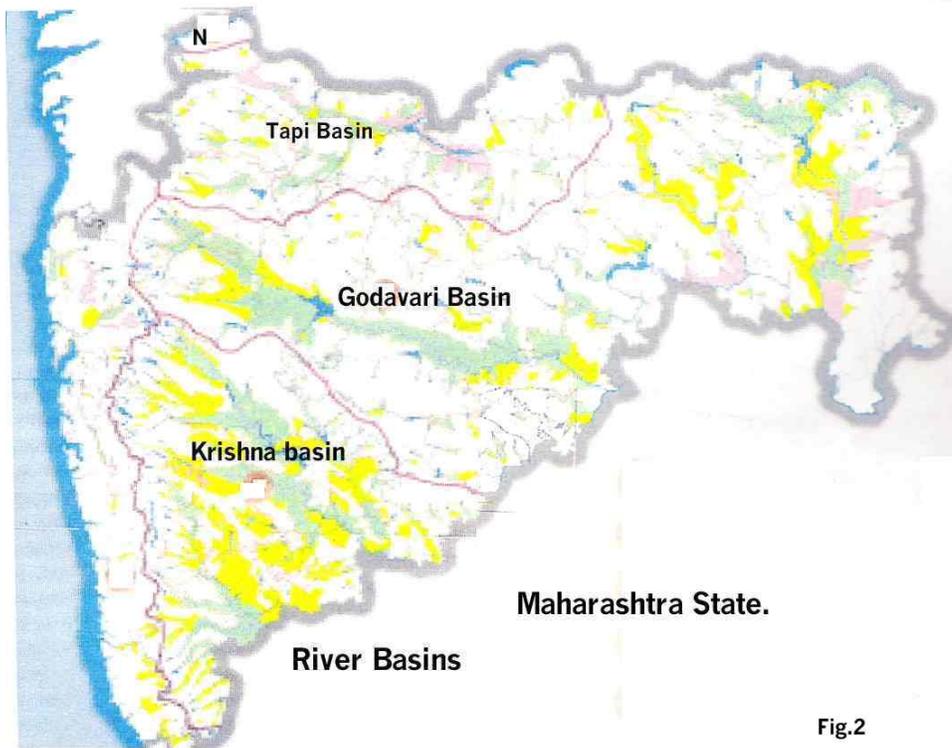


Fig.1

Availibility of Water in India	
India receives 4% of World water	
◆ 1950-----	5.20 Thousand metre cube
◆ 1991-----	2.20.Thousand metre cube
◆ 2000-----	1.80 Thousand metre cube
◆ 2025-----	1.00 (Projected) Thousand metre cube



River Basin Approach

The Central Water Commission ,India ,to my knowledge ,has already reorganised their entire field set up accordingly to basins and sub basins. The National Water Academy,Khadakwasla is deeply involved in the aspect of this proposal and also has come out with specific recommendations for effective implementation of this Project. The main indication is the necessity of the formation of River Basin Organizatiois irrespective of the State boundries. The Maharashtra State has already established five River Basin Development Corporations . They are functioning for last about eight years or so. This process has now been slowly extended further downwards to recognize the watershed wise ground level setups.

Proper governance structures to meet with the new requirements of these natural units are coming up now. The water resources administration was restructured for meeting with the new requirements for efficient management of water in an environmentally sustainable and

socially acceptable manner. Proper Institutional mechanisms for managing the water resources in the most effective manner for the different types of basins are now planned effectively. In order to achieve the objective, a time bound programme for establishing truly purposeful governance structures in the different river basins and sub basins was seriously and effectively framed .

The detailed assessment of the Irrigation Developments has shown that development of all small size irrigation schemes (less than 2000 ha. each) can bring in to use. only about 10% of the utilizable resources. The remaining 90% of the resources will have to be put to use through medium size schemes (2000 to 10000 ha) and large schemes. Medium size schemes are expected to utilize about 25% of the potential and the rest will have to be put to use by the large schemes. The mix of these - small and large will differ from sub basin to sub basin according to the geographical features, hydrological characteristics, industrialization and urbanization. But all the projects- large and small; local or otherwise, irrigational or municipal, surface water or ground water are now managed more or less together in an integrated manner. The the stakeholders are now getting involved in the collective management forum, step by step.

The exact pattern of the partnership in the sub basin or basin and the financial management tools have not been considered to be the same in all the places, because of the different pattern of the mix in the types of water uses. The approach of integrated management, a conservation of water (quality wise and quantity wise) and net financial viability of the arrangements has been kept as the common guiding principals for all the water communities brought together for the governance of water.

Immediate Initial Results

In general ,water resource projects falls within State jurisdiction under the umbrella of the Central Government . The Individual Project after getting Administrative Approval is considered for Technical Sanction. After these steps budget provision is made as per the advance planning and rules . The project then can be taken up for execution by the field staff of the organization . At the time of Administrative Approval stage , the aspects of Financial yard sticks, Enviromental clearance ,Resettlemt of the Project Affected Persons, Afforestation aspects are the prime considerations. The RBO approach has helped in speeding of these issues. Just in one year i.e., by May 1997, in one of the RBO,Administrative Approval (AA) was accorded to Eleven Major Projects,12-Medium Projects and this was considered as Record that year in our Country.

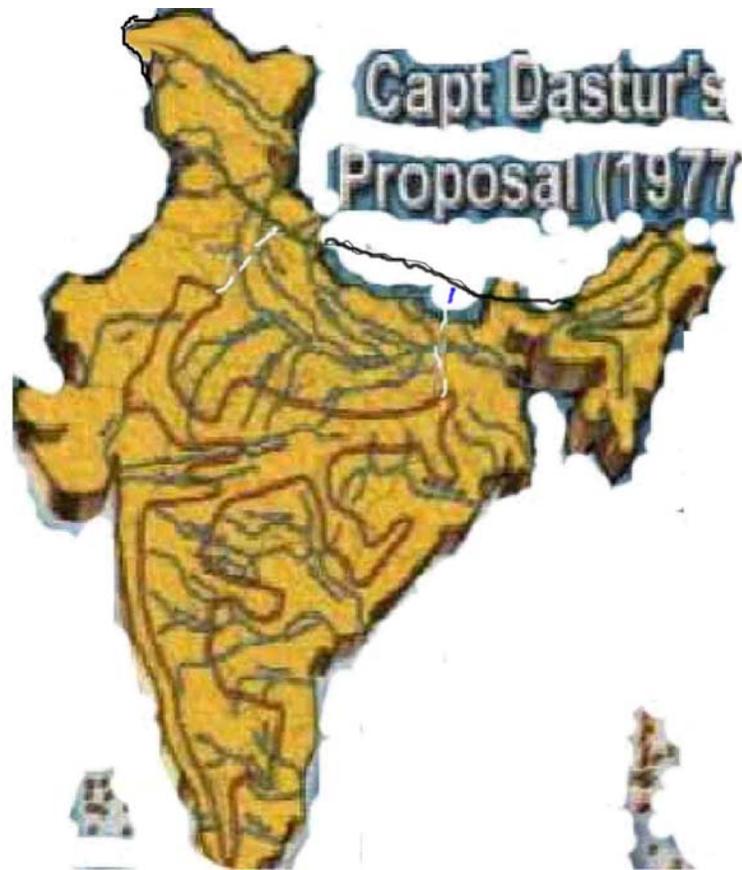
Major Achievements since Formation of one of the RBOs in 1996

- ◆ The Projects undertaken by the Corporations are nearing completion.
- ◆ The action according of Administrative Approval & Technical Sanctions to all the Projects was completed in a very short time of one year which in routine would have consumed about three to four Years time.
- ◆ Practically all the Minor Irrigation Dams numbering more than 200, were completed within about two years time..These projects generally do not require rehabilitation and very little land acquisition .
- ◆ As regards Resettlement & Rehabilitation ,in Maharashtra State there is law for this item In one of the RBOs resettlement has been done in respect of about 300villages. Priority has always been given to this aspect. As a matter of fact even reasonable subsistence allowance is given to the Project Aaffected People till they are finally resettled.
- ◆ An Important project joining two sub-valley's was completed by constructing 19.2 Kms long Tunnel which may be one of the Longest Tunnel in Asia as far as Irrigation Projects are concern ed.

- ◆ Many of the Lift Irrigation Schemes are nearing completion . On completion they will provide perennial Irrigation to the area where there is difficulty these days in getting even Drinking Water.
- ◆ More and more Peoples participation by forming NGO's/ Co-Operative Society's is seen
- ◆ The activities like Tourism, Fisheries etc. are also getting benefited.
- ◆ One of the Projects viz. Khadakwasla Projects besides catering for Irrigation is also
- ◆
- ◆ supplying drinking water to about sixteen to seventeen Towns through Canal and to Major City like Pune to the tune of 225liters per capita per day which very few Cities of Developed Countries in Asia can claim.
- ◆ The recent action coordinated by the organization concerning Artificial Cloud Seeding Project has proved to be very effective and useful.

The main purpose was to have more or less full authority/ Autonomy at field level with more and more people /farmers participation .The Corporations / RBOs have made the use of Information Technology through computer network a reality in practice .This has resulted in effective monitory ,irrigation ,flood ,drinking water control quite possible. Even Canal Automation experiments are in progress for changing climatic conditions and fields conditions. The Internationally known level organizations like WALMI, Aurangabad; the State level Directorate Irrigation Research Development, Pune, Central Designs Organization, MERI, etc. are directly involved in RBO's activities.. The presence of Central Water Power Research Station Khadakwasla, National Water Academy, Khadakwasla have also helped for easy adoption of modern techniques, data transfer and so on.





Difficulties at field / Organization level and Solutions :

- ◆ The budget shortage to Irrigation & Drinking Water Projects in developing Country like India is not very uncommon. As such though there is no dearth of Administrative capabilities, Technical abilities and proper planning the projects cannot be handled with full tempo it is felt . This point was considered in detailed at World Water Forum-2003 , Kyoto Japan. The Form passed a favorable Resolution ,in respect of Dams and Developments funding by Word Bank ,International level NGOs and the same is on record.
- ◆ It has been noted that the aspect of Resettlement & Rehabilitation is some what emotional & Social. This aspect can not be fully sorted out by providing the financial aids alone. If however, it is properly handled with humane approach and creating proper social awareness about the need of water resource, there is full co-operation from the PAP's it is seen and EXPERIENCED..

Conclusions:

In the Monsoonic climate, with dwindling river flows, after the Rainy Season; in Developing Country like India; Irrigation, Drinking Water Supply, urbanization, Industrialization, depend closely on the assured supply of Water through Storages, Inter Basin / Intra Basin River Transfer and so on. The River Basin Organisations formed keeping in view the field conditions, varied types of Water requirements depending on field priorities; appear to be the very effective solutions. The actual experience of such RBOs of last seven years and odd, in general, is quite encouraging. It is desirable to form such RBO envisaging more than one State and complete one of the thirty link first on priority, which will serve as Pilot Project. If we are successful in achieving this within the time schedule; the other links will follow. The points concerning adjoining Counties can be tackled subsequently in due course with possible concrete results in hand. **The present day RBOs are of course in the process of evolution according to the emerging needs of the Society.**