

**River Basin Organizations, Maharashtra State, India.
Seven years experience - of positive contribution
for Food, Water, Industrial developments, and also field
problems faced and solutions.**

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Abstract of Paper :

This aspect 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).with many delegates. My present Paper deals with this aspect in detail.

Keynote:

River Basin Organization .India Author:Er. Shirke. Oral PP Presentation..

INTRODUCTION

In INDIA the River Basin study and consequent implementations of various River Valley Projects in the past Century has got tremendous impact on development of the various cities and Socio Economic Developments of the rural area. This has indicated some guidelines which are really very useful not only to India but to many Developing Countries and in particular Asian Countries. The main pointers are to have one Authority for one River Valley with full decision taking power.. The construction of various storages as and when required in and/ for isolated pockets ,without advance planning, is the most undesirable approach.. As a matter of fact the Valley- as-a- whole approach is found to be very essential. The general trend of Urbanization and concentration of population in big cities ,has been decided by the Historical, Social and Economic conditions for the last few Centuries.. The main field problem in the past , in many of the Developing Countries, in my opinion, was the lack of concept of looking at the entire valley as one unit.

India is a very vast Country with varying climatic conditions; from snow clad peaks of Himalaya, Desert of Rajsthan ,North -Western India,to place like Cherapunji,North Eastern India.- the highest rainfall area in the World. (400 Inches/ 1000cms) Within the Maharashtra State there are heavy rainfall areas so also the acute scarcity areas. Thus on one hand people may suffer due to heavy floods while the other part may not even get adequate drinking water. This necessitated the Holistic Basin Organization Approach mentioned above. It has come to notice that the long-term and wide spread benefits are more in valley wise planning .It was therefore found necessary to form the River Basin Organizations . In this connection the State of Maharashtra has established Five River Valley Corporations which are effectively working for last seven years and odd and the results, in general , are encouraging. The Krishna river valley Organization is the pioneer one.

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, (1947)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. For achieving that objective, a time bound programme for establishing truly purposeful governance structures in the different river basins and sub basins was seriously and effectively handled in State

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

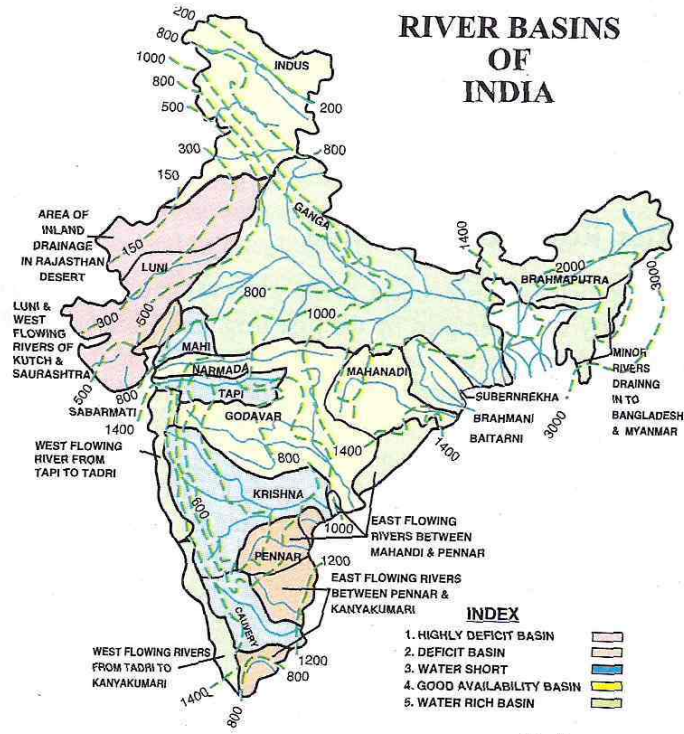


Fig.1

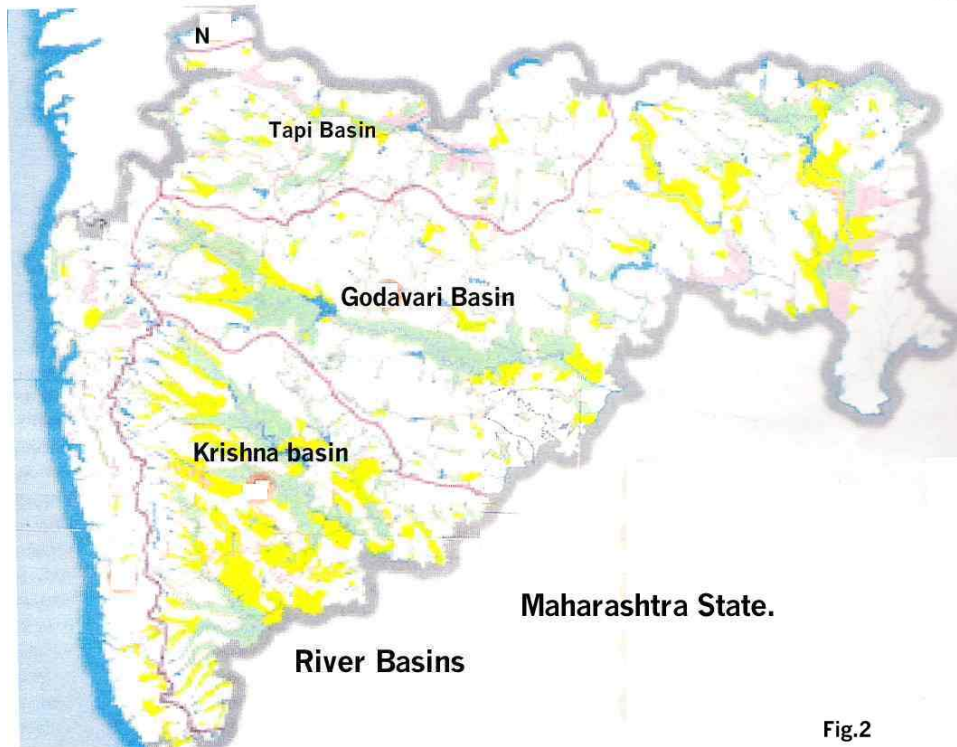


Fig.2

Availability 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

Irrigation Status in Maharashtra	
◆ Gross Area -----	30.8 Million Hectres
◆ Culturable Area-----	22.5 Million Hectres.
◆ Average Annual yield.-----	1,63,800 Mcum
◆ Completed Projects ----	52-Major, 202-Medium,2426-Minor
◆ Storages created (2002) -----	30,837Mcum.
◆ Ultimate Potential -----	8.5 million nectres.
◆ Potential Created -----	4.90 Million Hectres.

River Basin Approach

The Central Water Commission ,India has already reorganised their entire field set up accordingly to basins and sub basins. Maharashtra State had already progressed in that direction. The State has already established by law five River Basin Development Corporations . 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. For achieving that objective, a time bound programme for establishing truly purposeful governance structures in the different river basins and sub basins was seriously and effectively framed in State.

The Krishna River Basin Corporation was accordingly launched in Feb.-1996. As regards Krishna River Basin, to be very precise ,the area concernning Maharashtra is 22.6%. The Water Planning at the time of formation of Corporaton was 594 TMC (Thousand Million Cft./ 17.12MCM). 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. All 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 India ,water resource projects falls within State jurisdiction. 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 ,Resettlment 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, Administrative Approval (AA) was accorded to Eleven Major Projects,12-Medium Projects and this was considered as Record that year in our Country. The Basin covers about eight Administrative districts measuring about 69,000 Sq.Km.. The ultimate irrigation benefit will go to about 2.2 Million Hactres. In view of this there was immediate positive response to the Private Placement. The planning of Rs.1500 Million (about 33 M/usd) was responded with overwhelming amount of about Rs. 4370 Million (about 97M/usd). The first Public Issue had also very positive response.

Major Achievements since Formation of RBO 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 constructions of all the Minor Irrigation Dams numbering more than 200 were completed within two to three 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 Accordingly 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 Bhima- Sina 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 Irrigation to the area where there is difficulty in getting Drinking Water.
- ◆ More and more Peoples participation's 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 .This Corporation has 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, Directorate Irrigation Research Development, Pune are directly involved in Corporation 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. 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 Point . Many times 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.

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 h the assured supply of Water through Storages, Inter 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-- are the best solutions.The actual experience of such RBOs of last seven years and odd is very positive and encouraging.