Available online at www.elixirpublishers.com (Elixir International Journal)

Agriculture

Elixir Agriculture 36 (2011) 3091-3093

ISSN: 2229-712X

Intersectoral competition for land and water policy between users and uses in TamilNadu, India

Suresh S

Department of Civil Engineering, Sona College of Technology, Salem 636 005, Tamilnadu, India.

ARTICLE INFO

Article history:

Received: 9 May 2011;

Received in revised form:

21 June 2011;

Accepted: 30 June 2011;

Keywords

Rainfall,
Runoff,
Hydrology,
Land use, SAARC,
Policy,
Maf, Mm^3.

ABSTRACT

The national water policy of India is not concomitant with its land use pattern. The countries constituting the SAARC recognise trade and economic relationships among the member countries of Pakistan, Bangladesh, Srilanka, Nepal, Bhutan and Maldives but does not attempt at a comprehensive land and water resources policy for the region. But the rivers flowing in the SAARC region are not confined to national boundaries. In a similar manner no such policy exists among the member states of India. Population growth, unchecked urban migration against limited land and water resources has led to piecemeal and short term approaches to management rather than attempting at holistic global solutions in land and water sharing among the member states of India. For instance in Tamilnadu, water starved state, sharing of waters from the 45 rivers from neighbouring Kerala state has not been successful so far. With the result these rivers originating in Kerala flow waste to Arabian sea. One of the major drawbacks occurring in these exercises is the Tamilnadu has so far been concerned at its own interest in procuring water from Kerala rather than attempting to point out the benefits accruing to kerala which has no space to store the water. Research done in this regard reveal that benefits accruing to Kerala state are substantial in comparison with Tamilnadu.

Introduction

While political tensions have precluded any comprehensive agreement over the waters of the SAARC (South Asian Association for Regional Co-operation) countries and the states within the countries, unilateral development in each country or state has tried to keep pace with the water needs of growing populations and economies.

All of the countries and territories in the peninsular riparian to Himalayan rivers - India , Pakistan, Nepal, Bhutan and the Bangladesh are currently using 10 per cent of the annual renewable freshwater supply. Hence the most viable options include regional co-operation with comprehensive water policy as a minimum pre requisite.

Objectives

This presentation gives a holistic view of comprehensive land and water policy for both Kerala and Tamilnadu in safeguarding the land and water resources and bring prosperity to both regions. The fond hope of this presentation is such an exercise, should be attempted among the other states of India as well as the sates of in the SAARC region

Need For inter basin transfers

Though river basin could be a basic unit for water resources planning, this may not lead to the optimal utilisation of the surplus water resources in various regions of the country.

There are many basins in the country which would be surplus in water resources even in the ultimate stage of development, while other basins would already be facing situations of water shortages. For meeting the shortages in deficit regions, inter basin transfers of water may be necessary. This will lead to equitable distribution and optimum utilisation of water resources.

Demand for different uses

Water for irrigated agriculture, industry and domestic needs in India will go up to 7700, 1200 and 520 billion m^3 by 2025 AD respectively. The per capita availability of water will be less than 1500 m^3 (a reduction of 39 per cent from the water availability in 1990). In the state of Tamilnadu the water need during 2010 for irrigation, domestic, livestock and industrial sectors are 541, 18, 6 and 7 billion m^3 respectively against the available supply of 349 billion m^3 of surface water and 253 billion m^3 of ground water during the same period. Though these statistics brings about a easy balance between need and supply, it is often not the case. By the year 2050 some 60 per cent of the world's people (some 5 billion) will live in cities. In India and Tamilnadu 38 and 43 per cent of the people will live in cities (Tamilnadu is the second most urbanised state in India with 39 per cent of its 1991 population living in cities). This urban push shall demand a larger share of the common water resources and most of the reservoir systems shall be facing increased water demand for non agricultural purposes, bringing in imbalances in other sectors, namely agriculture. Contrary to mounting demand, the growing need for water is, however, much more difficult to deal with.

Intersectoral competition for land and water policy between users and uses involve 1) Water 2) Water policy 3) land 4) human 5) livestock resources. Thus an integrated water, water policy, land, human and livestock resources management is necessary to avoid conflicts and ensure rational and sustainable utilisation of water resources.

Tamilnadu is one of the progressive state in India, which had already utilised more than 95 per cent of its water potential and has tried several inter and intra state water transfer,

Tele: +91- 9894305153
E-mail addresses: sansuresh86@hotmail.com

diversion from existing irrigation projects, ground water extraction, desalination of sea water etc., to augment water for domestic sectors. The crux of the entire problem lies in successful implementation and successive follow-up. Uncoordinated, unimodal, multiple jurisdictions, mutually exclusiveness, political motivations and a host of other factors are responsible for non implementation or improper implementation of the planned processes. The end users too feel that it is the duty of the government to take care their requirement.

Water Resources of SAARC Countries

The Ganges ranks among the top ten large rivers of the world in terms of annual runoff. The surface water availability of the Ganges on an annual basis is about 446 million acre feet(maf). The Ganges basin comprising a total area of 433,938 square miles spreads over India, Nepal and Bangladesh. The present population of the Ganges basin is more than 400 million and is likely to be doubled within next 30 to 35 years if the current growth rate is not effectively checked. The flow of the Ganges are highly seasonal. Although the annual flow of the Ganges is 446 maf, the dry season (January through May) availability (at Farakka, India) amounts to only 21 maf. Floods during the monsoon season (July-September) and scarcity of water during dry season are the two extreme flow characteristics of the Ganges. Because of extreme low flow in the Ganges during dry seasons when there is very little rainfall, there arises upstream-downstream conflicts over the use of water of this river. In 1975, India commissioned a large Barrage across the Ganges at Farakka only 11 miles upstream of the Bangladesh border to divert bulk of the dry season Ganges flows for the stated purpose of improving navigability of the of Calcutta in the State of West Bengal. Since then India and Bangladesh have been locked in a serious dispute over the sharing of Ganges flows.

For the last 20 years, India and Bangladesh had been discussing to resole the Ganges sharing issue. A lasting solution, however still remains a far cry. Since 1989 there is a total vacuum in terms of sharing of flows of the Ganges between the two countries and currently there is impasse in the negotiations. Consequently the dry season flow of the Ganges in Bangladesh is diminishing progressively. As a result 40 million people living in one third of the total area of Bangladesh are facing extreme hardships in every sphere of life and living. The impasse in the Ganges negotiations is also creating a major obstacle in the way of ushering multilateral co-operation among India, Nepal and Bangladesh towards flood management in the basin. Flood, therefore continues to cause extensive damage to crops, properties and lives in the co-basin countries, whereas mitigation of this hazard could have profound bearing on crop planning and agriculture strategies in the region.

In the absence of any comprehensive arrangement for upstream-downstream sharing of the precious flows of the Ganges during dry seasons, complacency has probably grown among the upstream users where consumptive use of water is being made lavishly without attaching the required importance to water use efficiency. Conjunctive use of surface and groundwater still remains to be effectively practised where there is considerable scope for increasing groundwater utilisation, particularly in the middle part of the basin. On the other hand acute scarcity of dry season flows in the Ganges in Bangladesh is causing adverse impacts on domestic and municipal water supply, agriculture, fishery, forestry, industry, navigation, salinity control and eco-system. The headwaters of some of the major tributaries of the Ganges lie in Nepal which contribute about 40 percent of the annual flows and 71 percent of dry season flows of the Ganges available at Farakka. The major difficulty of Nepal is that it does not have the resources to harness these rivers on its own. Nepal needs to irrigate all of its limited irrigable area as soon as possible to meet its growing requirements of farm produce, and to generate employment and income.

To every problem there is a solution if approached constructively. The co-basin partners could embark upon co-operation in harnessing the potentials of the Ganges and share the gains. A portion of the monsoon floods of the Ganges which cause widespread damages in the co-basin countries could be conserved in the upstream storages sites (particularly in Nepal) to mitigate flood intensities downstream. This in trun would enable significant augmentation of the dry season flows of the Ganges satisfying the reasonable water needs of the concerned countries. In addition, generation of large amount of hydropower from the storage dams could have eased the energy crisis in the basin area and create more job opportunities by facilitating rapid industrials in different parts. The tremendous pressure on fuel wood in the region as an energy source would also have reduced and the forest resources of Napal in particular could have been saved. The upstream storage's would also help improvement of navigation in the basin area, control salinity intrusion in the lower Gangetic delta and control pollution by increasing fresh water during dry seasons.

Water Resources of Tamilnadu and adjacent states

The state is drained by 34 rivers basins with about 55 major reservoirs and more 300 medium and small anicut, barrages and diversion structures. Thus almost 95 per cent of the surface water potential are brought into human control by way of construction of dams and anicuts. Most of the major river like Cauvery, Pennar, Palar are interstate rivers and their flows in the state is dependent on certain mutual agreement with the neighbouring states like Karnataka, Andhra Pradesh and Kerala. Rivers are state subjects and therefore there often exist disputes in sharing of waters between states. This problem is further aggravated when the political party in power in a state is different from the party that rules at the centre.

A very simplistic analysis will reveal that the benefits for Kerala from the diversion of about 43 flowing rivers in 45 watersheds from kerala to Tamilnadu territory are as follows. As there is no space in Kerala, the amount of water required for Kerala can be stored in Tamilnadu space for utilisation in Kerala. In these days of spiralling land costs, this will be an asset to Kerala. An agreement can be easily reached as in the case of Parambikulam Aliyar Project (PAP). By such diversion it is proposed to divert 863 Mm^3,that is 255 Mm^3 from Nirar, 71 Mm^3 from Sholayar, 468 Mm^3 from Parambikulam group of reservoir and 71 Mm^3 from Anamalaiar. With the desired water agreement and allocation, Kerala can easily provide a better quality of life by supplying water to various sectors in time and where needed. The revised hydrology and water resources is bound to improve the small and marginal farmers along the coastline who now barely make out a living for their families. Hydro power generation will pick up with assured water availability. Now the flora and fauna are dependent only on seasonal flows of limited duration. Dependable flows with a assured minimum will sustain the fresh, brackish and marine aquacultue throughout the year. Soil erosion from steep

mountains to flat lands will be arrested preserving the landscape. The living standards of the people will improve locally and dependence on other states and abroad will decrease.

Open Questions

Whether water development and management can be planned in administrative/ political unit like a state basin or basin state:

A total basin wise planning approach towards increasing the national well being alone, ignoring state wise or regional consideration may not be unacceptable. For example such policy may make the upstream states suffer larger submergence while reducing their irrigation benefits through costly canals in rugged topography in favour of simpler canals in plain lands lower down. Even of more efficient it terms of national economy such actions may be objectionable. The fact that states in India represent not only political administrative units, but also sub-cultures which need to be preserved and development may give more credence to such objections. Thus, while the basin has to remain a national planning unit, the regional, non co-basin and state interest would also have to be safeguarded. The issue is complex and considerable debate may be necessary to guide the location specific solutions.

Are inter basin transfers within the basin state to be allowed or encouraged:

A state can plead that once a certain quantity of basin water is allocated to it, it is free to use it anywhere in the state including outside the basin. Another state may plead that only the inbasin needs be either considered or allowed. In the case law in India mostly (but not always) the former view of allowing the state to transfer water outside the basin has been favoured. Also traditionally, many projects when the irrigation is within the boundaries of the owner state (or group of states), but outside the basin, have been planned. For example, Nagarjunasagar, Tungabhadra, Ukai, Sardar Sarovar etc., can be quoted in this regard. If the latter view has to prevail, it has to consider these ground realities as historical abberations. It has also to disregard the fact that if the basin is a natural geographic unit taking a holistic view within its territory. The latter view, however, would strongly support the basin wise planning concept.

Conclusions

1) There are immense possibilities of converting water of the Ganges into wealth. While so much could have done, achievement in terms of comprehensive management and sharing of water resources of the Ganges through multilateral co-operation has been practically nil. Mistrust, fears, misperceptions and myths have impeded progress towards mutual co-operation. But this cannot be allowed to continue unabated. The integrated development of these common resources must be pursued in the interest of the teeming millions. There is no doubt that resolution of the problem of sharing the Ganges flows at Farakka between India and Bangladesh would remove a major irritant and create a climate of trust and confidence among the co-basin countries, congenial for closer co-operation. In the interest of all, the political and conceptual problems need be more purposefully addressed especially as the underlying commonality of interests in the Gages is overwhelming. The management of a river basin like that of the Ganges is a matter of regional concern because it is a transbounary environmental resource. Isolated individual development cannot yield the desired and optimal results. Development and management of the Ganges should be holistic, for which the essential prerequisite is meaningful co-operation among the co-basin countries. Greater transparency, joint planning, management and interdependence can help instil confidence to commence the journey towards such co-operation.

2) The approach should be made from a purely ecological perspective in seeing the land water and human as part of the ecosystems. The decisions should generally be taken in the short term and micro-level perspective, whereas policy making should be on long term and global perspective.

3) In order to conserve and manage soil and water integrated land and water management concept should be conceived. For example erosion measures like construction of check dams, providing contour bunds, percolation pond, gully control structure etc., but at the same time the water availability to downstream should not be affected. Normally at high flows these measures will improve the water availability of the entire system. But at low flows this will reduce the inflow to the downstream areas. Hence a policy should be drawn for low, high and medium flows separately for equitable distribution between upstream and downstream.

References

1. S Suresh. (2002). Sustainability of Integrated Water Resources Management in Indian Rivers Basin with Special Reference to Flood, Second International Symposium on Flood Defense, Beijing, 10-13, September 2002, PP 382-388.
2. Kegang Wu and John Thornes B. (1995), Terrace Irrigation of Mountainous Hill slopes in the Middle Hills of Nepal: Stability or Instability. Water and the Quest for Sustainable in the Ganges Valley, pp. 41-63.
3. Pradhan, B K and Shrestha, H M (1986) Oportunity costs of Delay in the Development of Himalayan Water Resources - A Nepalese Perspective, Kathmandu: N.p.
4. Rameshbabu, P Unnikrishnan, N Somasundaram M V and Pundarikanthan N V (1994)Parabikulam group of resurces: an inflow outflow and command area analysis. A report by Centre for Water Resources, Anna University, Madras 25 Tamilnadu India.
5. World Resources 1994-95: A Guide to Global Environment (1995) A report by world Resources Institute, 346.