

Stakeholders Participation in Groundwater Governance in Kerala

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Abstract: A new water policy for the Kerala State is required to implement the National Water Policy in a sustainable manner. The current regime of water resources does not recognise stakeholder participation or participatory approach towards water resources management. Water resources management entails the coordination of water related functions such as the issuance of authorisation for water use, the protection of water resources, water utilisation and conservation, water pricing policy, the development of the water resources, public safety and disaster prevention, monitoring, assessment and collection of data on water and related issues as well as the management of groundwater resources. It has already been recognized that groundwater has many discriminate uses and users. It is therefore of utmost importance that social concerns, such as the water rights, be clearly defined with due concern for the interests of local people, as important prerequisites for their existence. Mass awareness on conservation and protection of groundwater is also required. The general attitude at community level is that water is God given and a blessing from God and should therefore be accessed free of charge, used and misused by members of the community for whatever purpose intended. But it's high time that we should change our attitude towards water.

INTRODUCTION

Water resource is an integral part of our environment, which sustains life on earth. In a progressive society like our country, it is natural that demands for water continue to rise. Hence the issues related to water resources are varied and complex in India because there are remarkable variation in the availability of water on account of the regional rainfall and geography. Though Kerala is considered to be a water surplus state, the quantification of our water resources and its comparison with other states, have proved this to be a myth. Though Kerala is blessed with copious rainfall, water bodies and groundwater resources, there is a considerable imbalance in the availability of water resources through the state. Lack of effective management practices, stakeholders participation and indiscriminate exploitation are responsible for the paradoxical and impoverished situation.

Kerala state is a narrow stretch of land covering 38,863 sq. km. area, lies between North latitudes 08° 18' and 12° 48' and East longitudes 74° 52' and 77° 22'. Geologically, 88% of the state is underlain by crystalline rocks and the rest by sedimentary formations and alluvium. The weathered crystallines,

laterites and the alluvial formations form the major phreatic aquifers, whereas the deep fractures in the crystallines and the granular zones in the tertiary sedimentary formations form potential confined to semi-confined aquifers. The state is divided into three physiographic units, the coastal plains, the mid lands and the hill ranges. The hydrogeological set up is quite unique in nature in all these three units. The water regime of Kerala is characterised by high rainfall (over 3000 mm), a long dry season and a steep gradient from Ghats to the sea, rapidly carrying the rainfall back to the sea through several narrow, minor fast west flowing rivers and rivulets. The present settlement pattern of Kerala, can be termed as 'Rurban', is also not conducive for groundwater recharge.

GROUNDWATER SCENARIO OF KERALA

The blockwise groundwater resources of Kerala were computed based on the methodology recommended by the Groundwater Estimation Methodology (GEC-97). Out of 151 blocks, for which the groundwater resources were computed, 101 blocks are falling in safe category indicating a vast potential to be harnessed. Thirty blocks fall under semi-critical category and 15 blocks under critical category. Five blocks come under over-exploited category (CGWB, 2005). The over-exploited blocks are Athiyannoor (Trivandrum), Chittoor (Palghat), Kozhikodu (Calicut), Kasaragod (Kasaragod) and Kodungallur (Trichur). The trends in groundwater levels over the last decade were taken into consideration along with stage of groundwater development for categorisation of blocks. It is observed that there has been a spurt in the groundwater development during the last decade. All the development blocks in the state were in safe category during 1992. The situation was found changed during 1999, when three blocks were categorised as over-exploited, six critical and six semi-critical (a total of 15 blocks moved out of the safe category). However, during 2004, the number of such blocks increased from 15 to 50, which is about one third of its total. This indicates that the groundwater extraction in the state is showing an increasing trend. The demographic revolution, irrigation and industrial needs have put tremendous strain on groundwater resources during dry season. Since water rights in India vests with property owners, uncontrolled extraction of groundwater through motorised bore wells is taking place. According to the national water policy 2002, there should be a periodical assessment of the groundwater potential on a scientific basis, taking into account the quality of the water available and economic viability of its extraction. Further, the exploitation of groundwater resources should be so regulated, so that it does not exceed the recharge possibilities. The over-exploitation of groundwater has to be effectively prevented so as to avoid detrimental environmental consequences.

Boreholes are dug indiscriminately; groundwater reserves are also being polluted by seepage from septic tanks, contaminated soils, and disposal of sludge, toxic wastes, and agricultural chemicals. Once contaminated, aquifers are costly or virtually impossible to clean up. Consequently, emphasis must be placed on preventing pollution and measures designed to protect aquifers. This situation warrants a systematic and planned response through peoples' participation, more effective groundwater regulation and more intensive artificial recharge measures.

WATER MANAGEMENT STRATEGIES

Traditionally dug wells met the drinking water needs and rivers, streams and ponds met irrigation and other needs of rural people in the state. Urban population is mainly dependent on piped water supply (surface water) for their drinking needs. Now after introduction of piped water supply to the rural area,

the old Panchayath wells and other water bodies are being neglected. This has resulted in collapse, deterioration and abandoning of these wells and water bodies.

Recently, authorities and people realised the ground reality and started practicing water conservation measures. It includes cleaning of the existing dug wells (Fig. 1), ponds (Fig. 2), construction of bunds (Figs 3a and 3b) and awareness campaigns (Fig. 4). These people participatory programmes are giving fruitful results. Rainwater harvesting and artificial recharge schemes are also being implemented in the state. CGWB is organising mass awareness programmes and water management training programmes for the public, NGO and other stakeholders in the state. But all these measures are still not enough.

NEW APPROACH

A new approach is very essential for the governance and conservation of groundwater resources of the state. It involves the participation of local people, NGOs, government departments, planners, developers, panchayaths and gramasabhas.

The discussions on the Kerala state water policy (2006) are in good progress. The Kerala state water policy should ensure the stakeholders participation in the field of groundwater governance in Kerala.

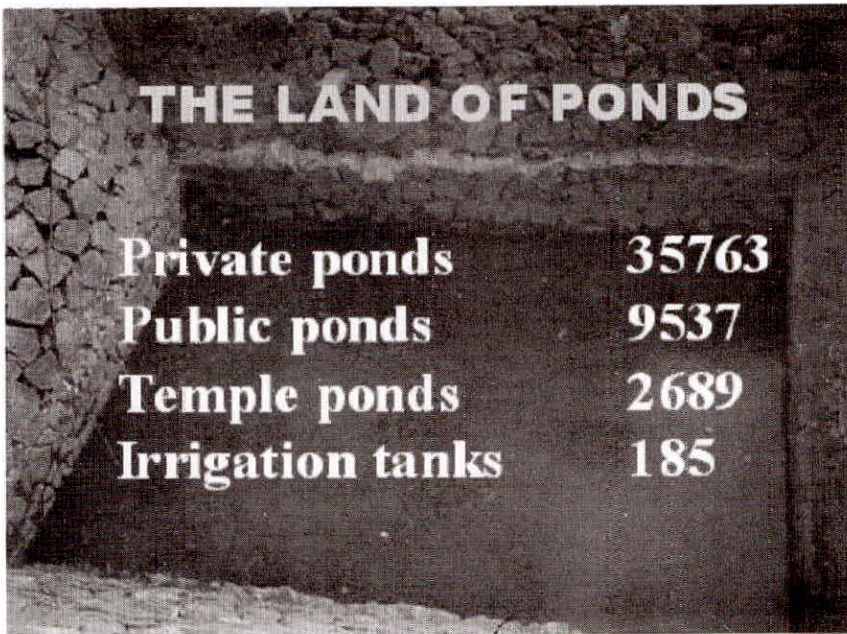
The new water policy of the state needs to address the following aspects:

1. Groundwater is a finite and vulnerable resource;
2. Groundwater development and its management should be based on a participatory approach, involving users, planners and policy matters at all levels;
3. Women play a central role in water resources management;
4. Water/groundwater has an economic value in all its competing uses and should be recognised as an economic good. Water should be given free of cost to the poor people for drinking purpose.
5. Create a data base on water levels and Panchayath-wise groundwater availability and process on GIS platform.
6. Demarcate the water scarcity areas in the state/areas showing water level decline more than 30 cm per year.
7. Separate schemes are needed for groundwater recharge in over-exploited areas identified by CGWB and Groundwater Department.
8. State groundwater authority should be strengthened and become active. Central Ground Water Authority shall be acting as an apex nodal agency for settling major issues.
9. Periodic assessment of the groundwater resources should be done by CGWB and GWD (Panchayath-wise)
10. Tanker water supply may be limited, instead encourage rainwater harvesting.
11. Putting in place an institutional structure at Panchayath level incorporating stakeholders, which accords high priority to the water sector in view of its paramount role to all social-economic activities and should have a control in the development of the water resources in that Panchayath.
12. Involvement of research institutions/University departments/NGOs and other stakeholders in the development of groundwater and adopting appropriate water conservation techniques and ensure their adaptability to local conditions.
13. For planning and development purposes, surface water and ground water may be viewed as a single unit. The real potential of groundwater resources of the state is not viewed seriously so far.

The Panchayath/Grama sabha shall have the control for the management of groundwater resources and preserving the ground water. The concerned people must be involved in planning, implementation and development of local water resources. The participatory approach to watershed development would secure the commitment of people to execute, monitor and maintain the project after implementation. Participatory approach implies a major role for local population in allocating rights and responsibilities over the resources. People should be educated through various means to understand the seriousness of the problems related to groundwater and remedial measures. The general attitude at community level is that water is God given and a blessing from God and should therefore be accessed free of charge, used and misused by members of the community for whatever purpose intended. But it's high time that we should change our attitude towards water.



Fig. 1. Domestic dug wells of Kerala.



THE LAND OF PONDS	
Private ponds	35763
Public ponds	9537
Temple ponds	2689
Irrigation tanks	185

Fig. 2. Ponds.

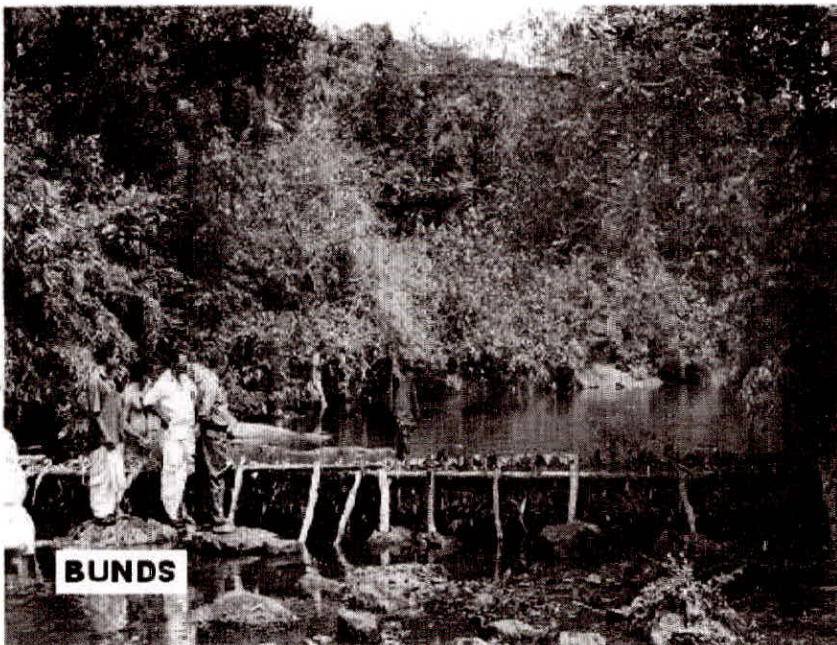


Fig. 3. Bunds construction through people participation.



Fig. 3b. Earthen bunds.



Fig. 4. Water awareness campaign.

REFERENCE

Dynamic Groundwater Resources of Kerala (2005). CGWB, Kerala Region Report, p. 50.

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