



WATER SHED MANAGEMENT AND POLICIES IN INDIA

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MEANING OF WATERSHED MANAGEMENT

A watershed is simply the geographic area through which water flows across the land and drains into a common body of water, whether a stream, river, lake, or ocean. The watershed boundary will more or less follow the highest ridgeline around the stream channels and meet at the bottom or lowest point of the land where water flows out of the watershed, the mouth of the waterway. Much of the water comes from rainfall and storm water runoff. The quality and quantity of storm water is affected by all the alterations to the land--mining, agriculture, roadways, urban development, and the activities of people within a watershed. Watersheds are usually separated from other watersheds by naturally elevated areas.

Management of the environment has been primarily focused on specific issues such as air, land, and water. Most efforts have resulted in decreasing pollutant emissions to air and water, improved landfills, remediation of waste sites and contaminated groundwater, protection of rare and endangered species, design of best management practices to control water and contaminant runoff, and much more.

What is still a continuing problem for our waters are nonpoint source pollution and habitat degradation. These are the problems that are responsible for most of the water quality use impairments throughout. These are typically complex problems that are difficult to manage. Both nonpoint pollution and habitat degradation generally cross program purviews. To establish a method to tackle these remaining problems managements must come together to better understand the interactions between the environmental components and the actions that can be taken by all towards the goal of ecosystem integrity.

WHY POLICY ON WATER

Water policy is a set of guidelines and directives to the state for harnessing water resources to cater the various sartorial need like agriculture sector, industrial sector and domestic sector that leads to the sustainable development. The water policy should give sufficient information and sufficient guidelines as far as the various issues of sustainable developments are concerned. It is a statement that defines ownership and related rights with regards to its use. It has incentive and penalty awards towards conservation and deterioration of water resources. The policy statement should include water allocation to various sectors.

The policy statement should mention about water conservation. The policy statement should mention about the institutional structure for executing the planning, implementation and maintenance of the system. The water policy should be well defined. It should give the various aspects and various regulations, which are prevailing or which are supposed to be implemented as far as that resource is concerned.

COMPONENTS OF WATER POLICY

There are two components, first one is the legislative framework and second one is institutional framework. The legislative framework gives the legal framework that defines the rights to exploit or use water resources and provisions of award of incentives and penalties. Legislative framework gives the various rules and regulations and how implements that rules and regulations. So, all these aspects are given as far as the legislative framework is concerned. The second framework is the institutional framework. Institutional framework gives the details of administrative system responsible for assessments and management of water resources. As far as water policy is concerned, institutional framework shows the administrative system. It provides guidelines to administrator various aspects of the water resource on national level state level or block level or up to the panchayat level.

The Legislative Framework: Water in Indian constitution is in entry in 56 of union list and entry 17 of state list. Articles 246 and article 262 mentions about the water issues and empower parliament to make laws regarding developments and management of interstate rivers. As such water is mainly a state issues. The central government of India has adviser rules, but parliament can enact various rules and regulations that various states have to follow. Article 262 specifies neither the Supreme Court nor any other court shall exercise jurisdiction with respect to interstate river disputes. In India there are number of states and large number of rivers are passing through various states. There are various disputes between states as far as the water sharing issues are concerned from rivers. Article 262 mentions about the arbitration or arbitrate rules as far as the interstate issues are concerned. In India, as far as water legislation is concerned, the surface water and ground water are not defined separately. It is mentioned as far as ownership of water is concerned, the governments of India act as per 1882 rules, and it is with the state government. Withdrawal of water is concerned, it is a state subject, some of the states have enacted, implemented water resource legislation and usage of water. The wastewater disposal – government India act was implemented in 1947 and 1998. It states various regulations. The state pollution control boards deal with wastewater related issues, water management, water quality issues. In these matters, state has a major say and then government of India has got an advisory role.

Some of the important water legislations in India are listed here. Some of the legislations related to prevention and control of pollution act 1974, which was again amended in 1978 and 1998. So, these legislations deal with setting up of institution related to administration of water like central pollution control board and state pollution control board. It undertakes functions related to preventions and control, maintaining and restoring related to wholesomeness of water. So, water is considered as an issue in totality. It is not only quality of water is also a major issue. So various legislations for water sharing or water resources utilization and quality of water are there. The institution provides consent to establish industries based on applicability.

Environmental protection act of 1986 gives various regulations for the environment issues. So, this protection act lays down procedure for settings up of standards of emission discharge of pollution. Accordingly, the bureau of Indian standards have come up with various Indian standards, such as 3025 for sampling, 2373 for flow measurements, 10500 for drinking water specifications, contaminant wise related guidelines for wastewater etc. so, to deal with all issues, central pollution control board is there and various state pollution control boards are also to see that these rules and regulations are implemented appropriately for various issues.

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The Administrative structure: The government of India has a ministry of water resource. Many state governments also have this ministry of water resource. The ministry of water resource is the nodal agency for planning development and management of the water resource of the country. This ministry advises the state government on developmental issues, implemental issues and issues of sustainable water management. Under ministry of water resources, there are departments like a central water commission for surface water related issues, central ground water board is there for ground water related issues. National water development agency is there to provide technical support to ministry of water resources and various state governments. They develop detail project report and then come with various issues. They come up with models and supports system for the government of India and its project implementation. Various institutions like water and land management institutes in various states, various agriculture universities, various water related departments in states and union territories are there for research and development issues for water related issues. There are the details of administrative structure for government of India and some other ministries. The ministries included are listed here: ministry of rural development, so this ministry deals with the land and then rural area development. Some of the project or some of the issues, which ministry of rural development will be dealing are desert development program, drought prone area programmed, integrated wasteland development programmed, etc.

This paper purposes to discuss the concept of watershed management and various government policies formulated for sustainable development in India

Watershed Development Program (WDP) is one of the most popular development programmers' implemented across the country. It is widely admitted that WDP is seen as the panacea. This program has been directed towards the promotion of overall economic development and improvement of the socio-economic conditions of the resource poor sections of people inhabiting the program areas through natural resource enhancement (GoI, 2001b). Over the years there is much visible impact of watershed development program among different communities across various regions.

It was found that there was good quality water harvesting structure in some watershed areas, but in some other watershed areas, it requires further attention. Maintenance of WHS during post implementation phase is poor in many states. Micro watersheds in DDP areas perform better in this regard.

Contribution to WDF is as per norm practiced in some states. While in some other states there is variation in terms of contribution to WDF.

There was reduction in soil erosion in the watershed areas. However, the variation in the percentage of reduction primarily depended on quality of soil and moisture conservation activities in the respective regions.

There was marginal increase in ground water level in some states but some other states exhibit better increase in groundwater level.

It was observed that the program is mostly successful in maintaining runoff reduction.

There is positive change in the land use pattern reported in most of the WDP regions. In these regions, more waste land was converted for productive use by the farmers. This has resulted increase in net sown area in majority of the states. Further, better land use pattern has helped

increase in agricultural intensification and thus enhance agricultural production. Crop diversification is resulted out of more irrigation facilities available in the watershed areas. However, the concern is that the people invest more in good class of land. The investment in low quality land has not received much attention.

Watershed program resulted positively in reducing the workload of women in terms of fetching drinking water, collecting fuel wood and fodder for livestock in almost all the study states.

The income of the community members has increased to some extent but watershed activities have been unable to make much visible impact in enhancing employment opportunities.

The Watershed Committees had been actively involved in the implementation of watershed program in majority states. User groups are formed in majority states, but their degree of involvement varies. The user groups are hardly visible in watershed activities after completion of the project. Very few CBOs seem to have survived after withdrawal of the project.

The position about common property resources leaves much to be desired and, therefore, it calls for concerted efforts from the authorities concerned.

Migration was mostly reduced during the project implementation stage. But further attempt is necessary to stop migration completely.

The analysis of women empowerment shows that the women participation was not adequate. Mostly, women lack in mobility, voice in decision making at home or in community. Same is the case with landless members. It seems that the livelihood conditions of landless communities have not be significantly improved. Apart from some minor labor work, there was nothing much to improve their livelihood. It was realized that the position with regard to flow of funds and social audit is limited to some watershed areas.

It was realized that participation of local community member is key to success of the watershed projects. Participation also enhances community empowerment. The participation of beneficiaries in planning and execution of the watershed was seen more from LMF group. Poor rural households were less involved in planning and decision making processes in the watersheds.

Economic impacts across the schemes reveal that the performance of DPAP watersheds is relatively as good as that of IWDP watersheds. DDP watersheds have scored better under some activities like quality of water harvesting structure but in some areas like reduction in soil erosion, runoff reduction, etc DDP has scored less. However, it must be considered that this scheme is implemented in the extreme environmental conditions. Hence, even this limited impact can be judged as positive. Nevertheless, there is a need to find out the gaps and reasons so as to make it even more effective and realize full benefits of the program. It was also found that majority of the households across all the study areas had reported slight improvement in their standard of living. The benefits of WSD have not been fully translated into disposable income or net gains to improve the standard of living.

The study also suggests that the impact of watershed is more focused towards physical and biological achievement, but the focus on social aspects is limited. There are certain positive trends towards growth of water level, soil regeneration capacity, land use pattern, cropping pattern, livestock production, etc. However, social achievements have not been properly addressed with implementation of WDPs. Majority of the reports suggest that the positive effect of watershed development on lives of the community is greatly limited.