Dryland Management in India: Backdrop, focus and the future

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Abstract: During the past five decades of planned development, India has achieved spectacular increase in food grain production. The use of high yielding variety seeds, fertilizers, plant protection chemicals have stepped up manifold. Development of major and minor irrigation projects had gone up. But still, the overall gains had not been equitably shared by the farming community. This is mainly because two thirds of agriculture in our country is under rainfed. According to one recent estimate, the availability of water for irrigation would emerge as a critical bottleneck. The requirements of ground water exceed its availability for irrigation nearly 30 per cent. Since, the requirement will exceed the replenishable supplies for irrigation at the existing rate of recharge of ground water, it will lead to over exploitation of ground water in several state and by 2020 as much as 71 per cent of irrigated area is likely to be from ground water. Closely related to this is the problem of degradation of land in the rainfed areas. As it is, the rate of degradation of land in such areas in the 1990s is likely to have proceeded at more than twice the rate observed in 1980s, basically on account of soil erosion from run-off.

Keywords: Rainfed agriculture, watershed development, issues, India

I. INTRODUCTION

Rainfed agriculture in India is characterized by low productivity, degraded natural resources and widespread poverty. Most of the millions of people living in our country depend on agriculture and natural resource management for their livelihoods, so development planners are eager to implement productive, environmentally sustainable land and water management. It is in this context, the concept of watershed development has been introduced in our country. A watershed is a geographical area that drains to a common point, which makes it an attractive unit for technical efforts to conserve soil and maximize the utilization of surface and subsurface water for crop production. It is an ecosystem or bio-geographical unit in which the interdependence is internalized. Watershed development has been conceived basically as a strategy for protecting the livelihoods of the people inhabiting the fragile eco-systems experiencing soil erosion and moisture stress. The aim has been to ensure the availability of drinking water, fuel wood and fodder and raise income and employment for farmers and landless labourers through improvement in agricultural production and productivity.

Conceptually the present strategy of watershed development is prompted by the need to protect the inhabitants of the fragile ecosystem from acute distress caused by recurring droughts. In this sense, it is a strategy for survival, even though in quite a few cases the successful implementation of the watershed development programme has led to a substantial increase in income and employment of the people. Even the many cases of outstanding success pioneered by the eminent NGOs reveal that such efforts were originally driven by acute distress caused by recurring droughts. But this is nowhere comparable to the policy framework and infrastructure available to the areas in the country which have experienced green revolution to the rainfed area is essential not only for deriving full benefit from soil and moisture conservation already accomplished in some area through the watershed development programme which Anil Shah has aptly described as “Watershed plus” (Shah 2000). But more fundamentally to provide the necessary economic incentives for turning watershed development into truly spontaneous and demand driven movement of the people in dry land areas not covered so far, and to sustain watershed development already undertaken when the current official programmes comes to an end. As millions of rupees spent on watershed development programmes it is essential that the programmes become successful. Keeping these issues in view, the present paper aimed to critically analyse the key issues faced by our country to achieve sustainability in watershed management.

II. WATERSHED DEVELOPMENT IN INDIA

Watershed development has emerged as a new paradigm for planning, development and management of land, water and biomass resources following a participatory bottom-up approach. Some important ongoing watershed
development programme include, Drought Prone Area Programme (DPAP), Desert development Programme (DDP), River Valley Project (RVP), International programmes of DANIDA, DFID (UK), SIDA etc., State funded watershed development programmes etc. In addition, based on the experience, the Government of India (GOI) has recently created Watershed Development Fund (WDF) in collaboration with NABARD. The objective of the fund is to create the necessary conditions to replicate and consolidate the isolated successful initiatives under different programmes in the government, semi-government and NGO sector. In addition several initiatives of peoples’ participation in resource management were taken place. Prominent among them are Chipko Movement, Save Narmada Movement, AVARD’s Irrigation Scheme, Water Council (Pani Panchayat), Ralegan Siddhi etc., The Ralegan Siddhi is the one among the very successful model of peoples’ participation.

The community-based organizations (CBOs) involved in managing watersheds are the Watershed Association (WA), the Watershed Committee (WC), User Groups (UGs), and Self-Help Groups (SHGs). The WA is made up of members who are directly or indirectly dependent upon the watershed area. The President of the watershed association is the chairman of the Watershed Committee, which carries out the day-to-day activities of watershed management. Self-Help Groups are homogeneous groups whose members share a common identity such as agricultural labourers, landless households, women, shepherds and scheduled castes/tribes. These groups focus on micro-finance thrift groups, small shops, goat-rearing.

Generally, watersheds in India are allotted a budget of approximately Rs. 6000 per hectare. Thus, a watershed with a total area of 500 hectares receives Rs.30 lakhs for a five-year period. The bulk of this money (80%) is meant for development/treatment and construction activities. The WC opens a bank account and directly uses these funds. To promote participation of local villagers in the implementation of watershed programmes, guidelines for watershed development were first issued in 1995 and subsequently revised in 2001. These guidelines emphasized the formation of community-based organisations. But, by and large, these community-based watershed management initiatives have not produced the desired results in terms of people’s participation particularly once the state withdraws its support (Rao, 2000; Jo et al, 2004; Palanisami and Suresh Kumar, 2002).

III. ISSUES IN WATERSHED DEVELOPMENT

Despite the noticeable improvement in performance, the experience outlined above raises a number of important issues which have a bearing on the sustainability of watershed development when the official programme comes to an end. The important issues that are emerging in relation to watershed development and programme are: (i) Rainfed agriculture and watershed development research, (ii) Decision support system for watershed development, (iii) Socio-economic and institutional issues, (iv) Participatory watershed development, (v) sustainability and replicability, (vi) Equity issues, (vii) Supply driven to demand driven models, (viii) Capacity building, (ix) Institutional Issues, (x) Administrative Issues, (xi) Cost sharing and (xii) Conflict resolution and (xiii) Monitoring and evaluation.

A. Socio-economic and institutional issues

Though the watershed development has considerable merit in economic, agricultural and environmental impacts and socio-economic conditions of the people who belong to it, watershed development has not produced desired results in many parts of the country. The watershed interventions need hitherto in many situations have failed to make any discernible impact on adoption of technologies by the farmers even in the adjoining villages. There are several socio-economic constraints responsible for the poor performance of watershed development programmes. The factors which responsible for poor performance of watershed development programmes in the country are: (i) Poor socio economic status of people, (ii) Low literacy and conservatism, (iii) Remote locations, (iv) Socio-political conflicts, (v) Inadequate credit facilities, (vi) Subsistence orientation, (vii) Inadequate marketing facilities, (viii) Absentee Landlordism, (ix) Subdivision and fragmentation of land holdings, (x) Inadequate storage facilities, (xi) Lack of proper infrastructural facilities, and (xii) Lack of legal mechanism. In addition to those factors, there are several issues centered around the watershed development which include, financial, technological, people’s participation, criteria for selection of watersheds, capacity building, institutional support, awareness creation, monitoring and evaluation, energy and co-ordination.

The other village level issues concerned are: Some people live outside the watershed area but their lands are inside the watershed area, some people live inside the watershed area and use several of its resources, but their lands are outside the watershed area, some people are landless but use the resources in the watershed area, some people have clear titles to their lands, while others do not and may be unwilling to make investments on the
lands they are cultivating, some lands are publicly owned by parties with whom the people may or may not be able to negotiate, lack of transparency in work and financial issues and some people are solely dependent on their lands and are willing to invest on it, others may not be as concerned, as they may have other major livelihood sources. These issues should be looked into by the nodal agency and the project implementing agencies.

B. Participatory watershed management

Like all other development programmes, watershed development programme is banking heavily on participatory approach. In fact watershed development programme envisages an integrated and comprehensive plan of action for the rural areas. Therefore, people’s participation at all levels of its implementation is very important. This is so because the watershed management approach requires that every field/piece of land located in watershed be treated with appropriate soil and water conservation measures and used according to its physical capability. For this to happen, it is necessary that every farmer having land in the watershed accepts and implements the recommended watershed development plan. If these factors are looked into in an efficient manner, the watershed development could be hastened in the country. Hence, people’s participation is the key element in the success of any development project, because they are going to be the beneficiaries and promoters of any development activity. As the issue of sustainable natural resource management becomes more and more crucial, it has also become clear that sustainability closely linked to the participation of the communities who are living in close association with these natural resources. The slowing down, arresting and reversing the degradation of the important natural resources like land and water will be possible only if it becomes a people’s movement involving the rural community and all those who work with them and have any stake in their development. This requires sustained effort to inform and educate the rural community, demonstrate to them the benefits of watershed development and that the project can be planned and implemented by the rural community with expert help from government and non-government sources.

Over a period of time, people have become dependent on the state for all investment for development in the form of subsidy. The excessive reliance on the state will have to be replaced with a spirit of self-reliance and the people have to find resources for the development of their own land leaving work on common lands to be done by the state with some contributions from the people. The rural society is plural and stratified. There are divisions based on gender, castes, land relations, religions etc. Homogenous groups need to be identified on the basis of commonality of interests, gender, etc such as Self-Help Groups, User Groups and Women’s Group.

C. Sustainability and Replicability

The basic issue of watershed management projects is that of enabling the beneficiaries to sustain and maintain the assets created with or with little or no support after the implementation of the project. It is also important that the activities are replicable with minimal government support. First of all, communities must be willing to participate and share costs in the implementation of project activities. The best way to achieve sustainability is to hand over the ownership of the programs to the community. However, since most watershed programs are implemented with the poorer sections, the cost sharing should primarily in the form of labour and not necessarily cash. To effectively achieve the sustainable management of watershed development projects the issues such as cost sharing, reform process, replicability, linking with other institutions, ownership rights are flooding into the minds of economists.

D. Equity Issues

Equity is perhaps the most difficult objective to achieve within the context of a watershed development programme, and even more difficult to sustain. Watershed development is aimed to improving the productivity of land and water. The benefits therefore primarily go to those who own or control the land and the water resources in the watershed. Those who do not see these sections are helped to maximize such benefits. It is not possible to redistribute rights over land in the short term, so this avenue towards equity is not really open. The same applies to rights over water except where it is common property (e.g., for drinking and domestic use and for livestock). In the planning and execution of watershed treatment works it should be possible to try and ensure that benefits go to the assetless people and women. Once a decision is taken to take up a watershed for development, the processes of building awareness of the project in the community should reach the disadvantaged and the women. Similarly for the processes of promoting community organizations, one should try and ensure that these sections are also represented in “user groups” and the watershed committees.
E. Capacity Building

Capacity building is an important component in watershed management. Different people have different roles and responsibilities in project implementation and there is a need to train people involved in the watershed. Training enhances knowledge, skill, attitude and relationships. The objectives of the training programme are: (i) to strengthen those processes and skills that help in the delivery of programmes/activities, (ii) to convey technical subject matter, (iii) to develop communication skills and (iv) to increase community participation. The broad areas can be technical information and skills, managerial skills, conceptual skills, human resource development, decision power and communication.

In addition, capacity building focused only on watershed development team members, training primarily addressed theoretical and technical aspects, poor performance in administration and monitoring of the programmes, functionaries at administrative level and village levels neglected, and issues of sustainability, equity, gender and community organizations have received limited attention. In view of these observed drawbacks of the watershed development programmes, the training needs must be redesigned according to the roles and responsibilities of the various actors in the programme. These actors are also the target groups for the capacity building process.

F. Institutional Issues

Major changes taking place in the overall context of watershed development include: (i) Increased government commitment, evident in the increased resources available for central government programmes, (ii) Increasing demand for improved transparency and accountability in the implementation process, and (iii) Increasing pressure towards clarity and transparency in decentralization of decision-making. The major issues in the Changing Scenario are: Inter-relationship between Panchayat Raj Institutions and Community based organisations, involvement of state governments and line departments and scope for creating competition among service providers.

The relationships are very vital for smooth functioning of a watershed program. New roles of PRIs have developed new relationship equations within the watershed. In spite of the weaknesses, the PRIs are here to stay. Fundamental requirements are: to enhance the technical capabilities and linkages of PRIs and to increase downward accountability by helping some members of Water User Association and Watershed Committees or of other community based organisations to get elected to Gram Panchayat.

State Governments are generally by-passed by funding direct from the Central Government to DRDAs. Hence, the States may not show any interest in ensuring that their line departments respond to watershed development needs, planning future locations of watershed development, and monitoring performance. Therefore, clear efforts to work with State Governments and line departments are needed. It is not difficult to place funds in the hands of the resource users or Project Implementing Agencies and allow them to “buy in” services.

All the government developmental programmes had been top down i.e. planned at the top level not based on felt needs and thrust upon the communities. Communities were not consulted in the design and implementation. Their needs and priorities were not given adequate importance. At the most, people were involved only as labourers. But in the recent watershed approach the project action plan has to emerge from people to who are actually facing the production related problems. The action plan with estimated budget will only be sent up for formal approval and release of the funds through a registered local institution.

G. Conflicts Resolution

The neglect of heterogeneity (rich and poor, varying interest on resource use, castes etc) in rural areas has led to the failure of many watershed development projects. The outcomes of this neglect are evident in the form of projects ridden with conflicts or the differential flow of project benefits among the poor and rich, with the poor, resource dependent farmers becoming worse off. This lack of understanding of the context results in further degradation of the natural resources, poor representation of the interests of the marginal sections in the decision making and the reinforcement of the power of elite leaders through their appropriation as leaders in village institutions (Manta Vardhan, 2000). The conflicts arises due to (i) village Panchayats rights over natural resources are still inconsistent with rights granted to other bodies under other legislations, (ii) Village Panchayats cover several villages and several natural resource user groups – conciliate or play off one against
the other, (iii) Likely domination by the elite group of farmers and (iv) Sometimes, village Panchayats do not correspond with watershed/natural resources boundary, therefore, potential lack of coherent management of natural resources. Conflict arises due to cost sharing is another major concern. The willingness to share the cost would depend on the benefits expected from any activity. Usually the interest of the community in developing a common land is low and their share could be as nominal as responsibility of watch and ward. On the other hand, in activities where the benefits are more direct, the individual families (eg.,) developing a water source for drinking or introduction of new crop varieties, contribution could be as high as 50 to 90 per cent.

H. Monitoring and Evaluation

Watershed management is a unique development approach in which watershed is used as a basic unit of planning and management of land, water and other resources. This approach is holistic and multidisciplinary. It enables the planners and managers to consider together various physical, biological, socio-cultural, economic and institutional factors operating within a watershed, and its surrounding environment, thereby they can formulate a comprehensive and integrated watershed development plan to achieve social objectives. The watershed management programme aims at improving the conditions of natural resources within a watershed. Local level institutions have to take charge of the programme so that the programme addresses the site-specific needs of the resources and of the people and sustain the development initiative. Monitoring the watershed development programme entails checking if these aims are being met successfully. It may not always be possible to measure the results that have been achieved because they may be intangible or it may be too costly to measure them effectively. In such cases indications that success is being achieved will make good proxies. Such indicators, however, must be chosen carefully so that they are reliable substitutes to direct measurement and are easy to measure in terms of time and effort. The choice of indicators is determined by who the end-user is.

IV. CONCLUSION AND RECOMMENDATIONS

Today watershed development has become the main intervention for natural resource management. Watershed development programmes not only protect and conserve the environment, but also contribute to livelihood security. The importance of watershed development as a conservation programme is being recognized, not only for rainfed areas, but also for high rainfall areas, coastal regions, and the catchment areas of dams. With the large investment of financial resources in the watershed programme, it is important that the programme becomes successful. For achieving the best results, it is necessary to keep in mind those issues to which attention have been drawn in this paper.

References

[12.] Palanisami. K and D Suresh kumar, Participatory watershed development programs: institutional and policy issues paper presented in the workshop on Rainfed agriculture in Asia: Targeting research for development, 2-4, December 2002, ICRISAT, Patancheru, India.