

Participation of Rural Youth for Sustainable Livelihood Promotion through Watershed Management

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ABSTRACT: In our country rainfed areas constitute about 65 percent of arable land which is characterized by low productivity, less technological change, highly prone to natural resources degradation and weather uncertainties. Watershed is an area that drains all the water falling in it to a common outlet and watershed management is the integrated use of land, vegetation and water in a geographically discrete drainage area for the benefits of its residents with the objective of protecting and conserving the hydro-ecological services that the watershed provides and reducing or avoiding negative downstream or ground water impacts. Though the watershed programme in India was initiated during 1950s, the vigour came only during 1990s. Watershed development programme is based on participatory and bottom-up approach with single window, integrated as well as sustainable area development programme. Local people mainly youth (most energetic and productive mass with more than 50 percent of country's population) must play an active role starting from project design, moving to implementation and the project maintenance. The main objectives of Integrated Watershed Management Programme or IWMP (implemented in 2009) are to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil erosion, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table. This enables multi-cropping and the introduction of diverse agro-based activities which help to provide sustainable livelihoods to the people residing in the watershed area. For watershed management emphasis should be given on components of watershed management i.e. (i) Entry point activity which involves rapport building with local people (ii) Capacity building of people through training encompassing awareness creation, development of technical skills and managerial fictions etc.

Keywords: Youth; participation; watershed; sustainable; management

INTRODUCTION

In this era of ever increasing water demands and rapidly depleting water resources coupled with overpopulation, it has become necessary to develop the means to recharge the ground water resources which are necessary for future requirements. A watershed is an area that drains water to a common outlet. One of the definitions of watershed management is "the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal, and human communities within a watershed programmes is an important strategy of government of India for making watershed programmes successful. Participation of local beneficiaries is mandatory in planning, implementation and maintenance of watershed development projects as per common guidelines issued by Ministry of Agriculture, Government of India. Youth's participation is, however, not a new idea in India. In fact, it emerged long ago in the vision and actions of Tagore and Gandhi, rural youth, as development actors were the central feature of their rural reconstruction programmes (Santhanam, 1982). The project not only accounts soil and water conservation measures but also incorporates the overall development of families through various supporting activities of livestock development, Wadi development (horticulture plantation), women welfare

activities and improvements in livelihood of landless families. A raindrop, when flows along the slope, carries the loose soil along it. In this case the topmost layer of soil is lost rapidly. Due to high intensity rainfall, it is estimated that, more than 100 tons of soil is lost. The techniques used to avoid this soil and water loss are one of the best techniques of watershed development. Watershed Development program is a revolutionary program aimed at fulfilling the water needs in the water scarce areas. If we take steps to encourage each drop of rainfall to penetrate in the ground at the point where it strikes earth, it will result in addition of one drop to our useful water supply and subtraction of one drop from a potential flood. It is the management of each raindrop falling on the ground. In areas where there is inadequate water supply watershed management offers an ideal solution. It helps in utilizing the primary source of water and prevents the runoff from going into sewer or storm drains, thereby reducing the load on treatment plants.

Objectives:

1. To harness, conserve and develop degraded natural resources such as soil, vegetative cover and water.
2. To promote multi-cropping, diverse agro-based activities and engineering measures to conserve water.

3. To provide sustainable livelihoods to the people residing in the watershed area by harvesting rain water and recharging ground water table.
4. To create employment opportunity by engaging local youth in the watershed development programme.

Literature Review: In India, a lot of work has been done on Participatory watershed management to promote sustainable livelihood.

1. Different Organizations such as WOTR (Watershed Organization Trust), CMLR (Centre for Management for Local Resources), Sehgal Foundation, TCSR (Tata Chemical Society for Rural Development) are trying to handle the problem of water scarcity through development of watersheds.
2. Verhagen (1980) gave the opinion that “participation is generally presented as the active involvement of target groups in the planning, implementation and control programmes and projects and not merely their passive acquiescence in performing predetermined tasks, not merely their exploitation in order to reduce the labour cost. Participation guarantees that the beneficiaries’ own interests are taken into account. This enhances the likelihood that programmes and projects will prove effective in meeting felt development needs and that participants share equitably in all benefits.”
3. Anna Hazare et al. (1980) was the first for developing the Adarsha Gaon Scheme. This seeks to replicate Ralegan Siddhi Model in 300 villages by combining the technical staff of Jal Sandharan Program with social organizations. Throughout the world and particularly in India now Watershed Development Programme has also evolved as a comprehensive development concept for sustainable and efficient utilization of natural resources for the benefit of the local community with special attention to the rural poor. The basic objective under the watershed programme ought to be that the conservation and development measures be conceived as means and the production systems compatible with the concept of ecological security as ends. “Watershed development is, thus, holistic development seeking sustainable livelihood security system for all life forms in the area (2001).
4. Moulik (1978) was of the opinion that “participation in development process implies stimulating individuals to take the initiative and mobilizing people to work for overall societal development”.
5. B.Mishra et al., 1993 conducted a field study to determine the effect of various bioengineering

measures like vegetative barriers of citronella, lemon, vetiver and Geranium grass and mechanical soil conservation measures like contour bund, graded bund and graded bund with vegetative single row live hedge of 0.40 m² cross section were evaluated to assess their effectiveness in reducing soil erosion and supplementing residual moisture. Popular hill millet i.e. ragi (*Elucine coracana*) grown in this area was selected as representative crop to assess erosion. A vertical interval of 1.5 m was maintained in case of different soil conservation measures while an area of 0.1 ha was maintained under each treatment. Average run off and soil loss during the year 2002 to 2004 on weekly as well as on annual basis revealed that run off (mm) was maximum in control plot (206.20) followed by plots with geranium grass (121.58), citronella grass (102.65), lemon grass (91.80), contour bund (85.80), graded bund (73.89) and graded bund with vegetative hedge (71.26), while the soil loss (t ha⁻¹) showed a different trend in all these treatments. Maximum soil loss was observed in control plot (8.63), followed by plots with graded bund (3.20), citronella grass (3.75), geranium grass (3.54), lemon grass (2.69), contour bund (1.74) and graded bund with vegetative hedge (1.56). Plots with graded bund with vegetative hedge (T7) were the most effective in reducing run off as well as preventing soil erosion, hence, it is recommended as the best soil conservation practice for this region.

METHODS

The methodology adopted for the present area include: The collection of data

1. By observation and discussion with local people.
2. By personal interviews of the local people.
3. Through Questionnaires prepared and getting filled them by people.
4. Through Social Mapping of the areas for developing the social relationship with the local people.
5. By adopting engineering and biological measures.

WATERSHED MANAGEMENT APPROACHES

1. Social Approaches:

- a. Multi Tier Approach- It includes a multi tier ridge to valley sequenced approach. Here the first tier is higher reaches of forest where water originates, second tier is intermediate tier just above agricultural land and third tier is plains and flat areas where farming happens. Contour bunds, check

dams can be constructed in upper to lower levels, which is a labour intensive work. It can create employment opportunity for youth.

- b. Cluster Approach- The approach envisages a broader vision of geo-hydrological units normally of average size of 3000-7000 hectares comprising of clusters of micro-watersheds. Product aggregation, provisioning of support services, better monitoring and supervision is possible by this approach.
- c. Consortium Approach- This approach emphasizes participation of all the stakeholders, improving awareness and skill for construction and management of watershed.
- d. Integrated Approach- This approach suggests integration of technologies within the natural boundaries of a drainage area for optimum development of land, water and plant resources to meet the basic need of people and animals in a sustainable manner.

2. Engineering Measures:

- a. **Check dams**-These are weir structures provided in stream in initial stretch to check the gradient and surface runoff velocity.
- b. **Contour terracing**- It involves the construction of banks along the hill slope into numerous small slopes, check the flow of water, promote absorption of water by soil and save soil from erosion.
- c. **Percolation Tanks**-small storage structures constructed across natural streams and nallahs to collect spread and impound surface runoff to facilitate infiltration and percolation of water into the subsoil.



Check Dam



Contour Terracing



Percolation Tank

3. Biological Measures:

- a. Plantation of 'Madras Anjan' grass on hilly slope, 'Stylo' grass on downstream of continuous contour trenches and 'Khus' grass on bund constructed on pond.
- b. Plantation of grass for muroom strata for first 3 to 4 years and CCT there afterwards.

CONCLUSIONS

The success of watershed development project depends on participation of local people with the financial help of Government; hence it will be economically viable. Farmers must be motivated to participate in planning meeting for watershed development, so that they can share information to their fellow farmers about watershed development and management. In implementation stage labour contribution by local people is essential for proper and timely construction. In maintenance stage, the combined effort of local people and government sponsored watershed development agencies lead to enhance the sustainable livelihood promotion through employment generation, environment (sum total of soil, water and forest) protection and increased agricultural production due to more availability of irrigation water.

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