



CHAPTER-VI

SUMMERY AND CONCLUSION

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Watershed development receives an increasing attention by the policy makers to overcome the problem of land degradation, soil erosion, water availability etc. The implications of watershed for the development of all five types of assets defined in the sustainable livelihood (SL) framework viz., human capital, social capital, financial capital, natural capital and physical capital has been well documented. In spite of huge irrigation potential, about forty per cent of India's demand for food will have to be met by increasing the productivity from dry land agriculture through watershed development. Women play a vital role in agricultural development and the management of natural resources and they have a right to an equal say in the way those resources are developed, managed and used. In addition, land-based activities usually generate more income, and carry less risk, than the non-land-based activities that women are often encouraged to take up. It was found that women are tended to be marginalized in watershed management because of the focus on land development, which is purely male-focused in our country. The status quo can be changed by strengthening women self help groups and drawing their membership into government programmes like watershed management. Thus, this study will have to examine women's participation in watershed management through SHG institutions so as to achieve increased rural household income and sustainable watershed management.

The present study is designed with five major objectives, to explore the process, pattern and the dynamics of women's participation in the watershed development project with special reference to the role of SHGs in the management of watershed programmes. The impact of watershed development on livelihood condition and the building of assets such as human capital, natural capital, physical capital and social capital among the rural poor on effective participation and implementation of watershed management. To analyse the objectives, the integrated wasteland development project (IWDP) under Hariyali guideline has been chosen for study, which has significant policy implications for people participation giving special priority to women.

A total of thirty numbers of Micro-watersheds has been implemented under IWDP in Nayagarh district of Odisha. The study was conducted in three micro watersheds comprising

of 10 villages. 25% of worker population was taken by random sampling method from each selected village. Thus a total no. of 460 beneficiaries was taken for the study from members of SHG & Non-SHG. The data has been collected by developed questionnaires, personal interview and PRA method.

Important findings of the study have been summarized along with conclusions below:

- 1- The level of participation is found to be very high among the members of SHGs as compared to those of non SHGs in each and every phase. It is found that all the beneficiaries belong to SHG have knowledge about the project where as a few peoples belongs to Non-SHG having knowledge about watershed management.
- 2- Very unequal distribution is noticed in the work participation rate of men and women in the study area. Women are reported to perform more works in household chores, children education and health care, sanitation etc. Women belongs to landless families are least involved in children education which leads to more school dropouts in landless families.
- 3- Participation of men found to be higher as compared to women at different stages of watershed management programme such as identification, planning, implementation and monitoring etc. Awareness generation and capacity building at grass root level is required in this context.
- 4- It is clear that technology alone can't efficient to meet the need of growing demand, the good management of natural resources plays a crucial role in improving livelihood & alleviating poverty.
- 5- Women participation is found to be higher in agriculture, both in pre-production and post-production operations. Women are highly engaged basically in activities like cleaning seeds, Transplanting, gap-filling, winnowing of grains, cleaning, drying and storage of grains.
- 6- An important component of watershed management is animal husbandry, in which women involvement is found to be higher as compared to men in the activities like

feeding the animals, cleaning of cattle shed, milking of cattle, processing and delivering of milk.

- 7- Men beneficiaries have been participated at every stage of watershed management activities irrespective of member of SHG, whereas women belong to SHGs found to higher participation than Non-SHG women.
- 8- Utilization of degraded forest area increases the easy access of Fuel, Fodder and Forest products resulting the reduction in work burden of village women.
- 9- Area under irrigation increased in almost all watersheds. The extent of this increment ranged from 12.8% to 45.33 % in different watersheds. The variation in increase related with available arable land and size of population.
- 10- Ground water level raised by overall 24% resulting significant increase in number of wells and decrease in the depth of wells which able to solve the problem of water scarcity in the local area.
- 11- The availability of drinking water increased on all project villages. The quantity of water use increased by 35.29% and time in fetching water decreased by 54.23%. It reduces the work burden of local women increasing their participation in developmental activities.
- 12- The cropping intensity increased. Dual crop area increased by 23.78% and single crop area increased by 12.09%. It has direct impact in increase of crop production and income of beneficiaries.
- 13- Agricultural productivity increases and net return increased significantly. Increase in production of food grains and vegetables are found to be high in women participation after the implementation of project.
- 14- The outcomes of crop yield shows an interesting result that in the villages where more water and soil conservation measures are constructed, gains higher growth rate and villages having more treatable area evidenced higher growth.

- 15- It is found that the dependency of the beneficiaries upon money lenders decreases and the dependency increases on SHGs and Banks.
- 16- Equal wage rate implemented in watershed management project villages where as in other private area women workers getting less wages.
- 17- Increase in livestock population is registered in the watershed area due to increase in fodder availability, which is an additional source of income after agriculture in the study area.
- 18- Employment opportunities increase noticeably. Increase in employment generation registered to be higher among SHG beneficiaries as compared to Non-SHG beneficiaries. The increment in man days observed due to the income generating activities created by watershed management programme.
- 19- Reduction of migration reported in the study area during the project and after the project period. The rate of migration decreased found to be higher in case of SHGs. During the project work the out migrants are engaged as daily labour and after the project some of them again started to go outside for work.
- 20- The living standard does not reported any growth of Non-SHG members in small size and less populated villages, because of land focused technique of watershed intervention.
- 21- MPCE of SHG households grows higher as compared to the Non-SHG house holds indicating, that the benefits created by the watershed management programme acquired more by the members of SHG.
- 22- The percentage of increase in income is found to be higher in case of women having land as compared to land less women. This replication is also similar incase of members of SHG and Non-SHG. The result encourages the need of including more landless people under the sphere of watershed management which can possible by group formation.

- 23- It was found that middle age group and educated members are participated more in SHG. Member's irrespective socio-economic status and land holdings show their interest in SHGs. The result brought out an important fact that the involvement of SHG can be proved as the best in grabbing participation of women in to watershed management.
- 24- It is observed in the study of SHGs is that regular meetings are being arranged and the presence of women are more than men. By regular meetings they come across the group members and also with the Government officials and aware of the happenings occurring around them which leads their active and effective participation.
- 25- Self help groups are substantially engaged in income generating activities like goatery and dairy farming by increase and easy access of fodder. This indicates the indirect impact watershed management in the enhancement of income generating activities.
- 26- Gender disparity decreases raising the social capital of the local people after involved with SHG and watershed management. The decisions are taken by women only and jointly with men reported to high in SHG house holds, while it is found to be lower in Non-SHG households.
- 27- It was observed in the study that the community had experienced constraints such as low people participation and no choice to farmer during entry point activities, lack of understanding and competition for representation were constraints during formation of village level institution, while fear of loosing money, low attendance and irregular saving were constraints during SHG formation. Community had faced constraint such as slow process and low participation in the beginning, lack of transparency and clarity about use of contribution was observed. Community had also faced problem in taking up activities in common land.
- 28- The constraints expressed by the community includes, lack of co-operation and understanding by farmers during local institution building. The staff found that participating method raises people expectations. Limiting for few treatments of watershed development and lack of flexibility were constraints related to technical

aspect, with regard to project management vacancies, procedural delay were major constraints faced by the staff.

- 29- Some of the solutions offered were, exposure visits in the beginning, intensive training, involving local leaders, adopting transparency etc., to overcome these problems.
- 30- It was observed that self-help groups had given number of benefits to its members, they include easy access to finance, loan at low interest rate, saving habit, awareness about development avenues and increased social contact.

Conclusion

The overall analysis indicates that watershed development programme has given encouraging results and offers a ray of hope to the disadvantaged section of community in rural area. It has noticeable impact in the improvement of agriculture, income and employment generation. It improves high rates of return from crop yield. Watershed management improves the standard of rural livelihood through its positive impact on natural capital, physical capital, financial capital and human capital. This indicates the impact of watershed management on the overall development of rural people.

Creating space to women in watershed development and placing the vulnerable group in action is a welcome step for sustainable development through SHGs. Togetherness, always brings strength which helps in bringing out the vulnerable women out of isolation and give them community identity and strength catalyzing their capacity for collective action to overcome the traditional patriarchal system and the suppressive social structure of women. Proper effective mobilization and involvement of SHGs in the development process can bring the resource poor (especially women) for poverty alleviation and actualization of economic growth.

Implications of the study

Based on the findings of the study following recommendations are made

- ❖ There is need to fill the gap between scientific approach and funding of watershed with community participation.
- ❖ The remaining marginal farmers, landless and women groups should be given special priority in the watershed management and should be included through SHGs approach. This will help in the overall development of an area.
- ❖ Landless family members and artisans can play productive role in management of common property. Hence they have to be encouraged in management of community assets.
- ❖ The local institution should encourage participation of land less, women and marginal farmer. One village level institution per village is appropriate and SHG should be encouraged to cover all families. There can be one representative in SHG from each family.
- ❖ The linkage with different development departments like agriculture, horticulture, veterinary, agriculture university extension centers, banks, marketing and also non-government organizations is essential. Projects implement during the project period. Their role should increase towards project completion, so that they take over the responsibility of policy advocacy during post project period.
- ❖ The watershed team members are to be proactive in sowing the seed of awareness among the vulnerable section in the grass root level.
- ❖ Scientific based training on agricultural input and livestock management should be organized by efficient resource persons/agencies.
- ❖ The descriptive study of sustainability of NRM in the areas/villages where no watershed development activities was taken up is essential to understand the status and management aspects.

- ❖ The SHGs and UGs should be specially trained to manage their resources after the exit of the Government. Innovative income generating activities should be introduced for sustainability of the groups
- ❖ Qualitative assessment and periodical feedback needed for review and implementation of remedial measures by project implementing agencies.
- ❖ A cluster of group taking all the women SHGs should be formed at village level and they should given two to four hector of land in lease basis for initiating income generating activities. In this way the landless women will be benefited.

Future scope for research

Effective Watershed Management is a matter of great concern for maintaining the gap between degradation of natural resources and growing demand of the community. Community participation and group strategy are key factors in sustainability of Watershed Management. Further, Noticeable growth in livelihood Through Women's participation can be achieved by multidimensional developmental interventions by Watershed management programme. Hence, there is need for continuous research in this field.

- ❖ There is need to study sustainability of watershed management and its impact on livelihood of rural poor after completion of the project and after a duration of 5-10 years. That will give more meaningful insights about the sustainability of the programme.
- ❖ There is need to correlate the direct and indirect contributions of different development projects with sustainability of watershed management. It will help to create a holistic approach for sustainability of natural resources.
- ❖ There is need for long term research on quantifying and documenting the building up and loss of different natural resources over a period of time and establish association between management aspects and climatic factors.

- ❖ There is a strong need to evolve a methodology for monitoring and evaluating the new paradigms of participatory watershed management involving the women population.
- ❖ The multidisciplinary participatory research study on the performance of various Watershed development interventions, individually and in integration is necessary to evolve most suitable and effective package for sustainable natural resource management.

