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Analysis of Watershed Development in Rural Area of Yavatmal District

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Abstract: *This review paper delves into the Watershed Development is amid to improve the ground level, quality of water and water resources and is applied to an area of land that stream or river. Watershed Development aims to improve the natural resources for supports human needs for water, food, agricultural yields, energy and residence, while supporting other agreed attributes linked to delight, aesthetics and ecologic function. Common benefits from successful watershed development projects include improved agricultural yield and increased access to drinking water. The main aim of watershed management is conserve the soil, plant, water resources of a catchment area, store rainwater, reduce soil erosion, and improve soil nutrient and carbon content so they can produce greater agricultural yields, sedimentation control, increased biodiversity, wildlife and flood control. It also reduced the climate change and other natural disasters.*

Keywords: Watershed Development, Human Needs, Agricultural Yields, Aesthetic, Ecologic Function, Conserve the Soil, Store Rainwater, Increased Biodiversity, Wildlife, Flood Control, Reduced Climate Change.

I. INTRODUCTION

The conservation of water and improvement of water quality and conservation of soil is called as watershed development. Watershed management is the process of creating and execute plans, programs, and projects to increase watershed functions that affect the plants, animals and humans. Watershed development aims to balance the conservation, regeneration and use by humans of land and water resources within a watershed. Common benefits from successful watershed development projects include improved agricultural yield increased access to drinking water. The watershed development helps to improved agricultural yield, conservation of soil, increase lifespan of plants, improve soil nutrient and carbon content which is helps to produce greater agricultural yields, store rainwater, reduce soil erosion, and increase water resources of catchment area. An adequate amount of water available in a sustainable manner for future use.

II. OBJECTIVE AND SCOPE

A)Soil and water conservation - The main objective of watershed development is to conserving soil for farm use and increase agricultural productivity.

B) Ecological balance -The most important reason is ecological balance. it is the best way to maintain the right ecological balance in the environment through the right use of resources. It also gives chances to discover various land system which can be used for the safe use of land. Develop Infrastructure. It helps to improve the infrastructure of agriculture of agriculture with an improves way of marketing, storage and transportation. It can contribute a lot to improving the overall infrastructure and boosting productivity.

C) Support to farmers - It helps to improve soil health if efficiently store rain water for irrigation purpose it helps to increase agricultural productivity.

D) To improve resource conservation and land use - Due to watershed development we can store adequate amount of rainwater which can use for future.

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III. LITERATURE REVIEW

1. Yugandhar B. N., J. Venkateswarlu and Vijay Kochar (1999):
The rainfed areas of eastern Rajasthan in India are characterized by very low and erratic rainfall, frequent droughts; and agricultural production is uncertain and risky on the degraded soils and depleted water resource. Due to these adverse conditions, agricultural productivity termine the impact of integrated watershed programs on agricultural productivity and farmers' livelihoods. Most of these studies reported multiple benefits from the integrated watershed program in terms of water availability, soil loss, agricultural productivity, income and environmental and ecological status.

2. Reddy, V. Ratan (2000):
Irrigated agriculture in India has probably reached its limit and further sustainable increases in food production must come from dryland farming, especially watershed development and management. While the policy bias, resulting in intensive agricultural practices, has paid off in terms of meeting the country's food demands in the short run, it proved to be unsustainable, economically as well as environmentally, in the long run. This coupled with the limited scope for expanding irrigation (through traditional methods of damming the rivers) has prompted thepolicy shift towards dryland agriculture.

3. Anon. (2001):
Watershed Development programs aim to restore degraded watersheds in rainfed regions to increase their capacity to capture and store rainwater, reduce soil erosion, and improve soil nutrient and carbon content so they can produce greater agricultural yields and other benefits. As the majority of India's rural poor live in these regions and are dependent on natural resources for their livelihoods and sustenance, improvements in agricultural yields improve human welfare while simultaneously improving national food security

4. Khisagar, K. G. et al. (2003):
More than one-half of the terrestrial earth is vulnerable to drought each year. Because drought is a recurring phenomenon and typical for the majority of world zones, the most productive lands of all continents can lose millions of tons of agricultural production annually.

5. Khalid, M. A. et al. (2004):
The impacts of major watershed development programmes have been outlined in terms of biophysical impacts, environmental impacts, socio-economic impacts and overall economic impacts. It is pointed out that the watershed development activities have made significant positive impacts on various biophysical aspects such as soil and water conservation, soil fertility, soil and water erosion in cropped area, changes in cropping pattern, cropping intensity, production and productivity of crops.

6. Biswas A. K. et al. (2005):
Quite often Integrated Water Resources Management (IWRM) is promoted as an efficient method of improving quality of life, poverty alleviation, employment generation, and achieving sustainable development. Regrettably, two fundamental questions have never been assessed: whether IWRM is an implementable concept or not, and, if applicable, to what extent. This book, edited by three distinguished water experts, aims to find out the current status of IWRM in South and Southeast Asia and determine the extent to which this concept is implementable.

7. Government of India (2007):
India's five year plans are also supervised by the Planning comission The economy of India is based on planning through its five-year plans, developed, executed and monitored by the Planning Commission. With the Prime Minister as the ex-official Chairman, the commission has a nominated Deputy Chairman, who has rank of a Cabinet minister. Montek Singh Ahluvaliya was the last Deputy Chairman of the Commission.

8. Sen, Sucharita (2008):
Watershed management needs to take a multipurpose approach to improving land and increasing water availability for crop growing, livestock and human use through soil and moisture conservation measures. An effective watershed project should aim to drought-proof areas by capturing every falling raindrop.

9. Palanisamia, K. et al. (2009):
To increase the overall agricultural production and to improve the living conditions of the farmers depending on the rainfed lands, watershed development programmes are being widely implemented in the state. The aim of Drought

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Prone Area Programme is to promote the overall economic development of the watershed community through optimum utilization of natural resources, employment generation and restoring ecological balance.

10. Pascual, U. et al. (2009):

Agriculture constitutes a key driver of ecosystem change, evident from the wide-scale changes in land cover, stream flow and groundwater systems. It is closely linked with the health of surrounding ecosystems and should be considered an agro-ecosystem. Agricultural activities often undermine the processes that support ecosystems and the interconnections of complex ecosystems that make up the landscape. Nevertheless, agriculture depends on ecosystem functions such as pollination.

IV. METHODOLOGY

Selection of site

- To control damaging runoff and degradation and thereby conservation of soil and water.
- To manage and utilize the runoff water for useful purpose.
- To protect, conserve and improve the land of watershed for more efficient and sustained production.
- To rehabilitate the deteriorating lands.
- To moderate the floods peaks at downstream areas.
- To increase infiltration of rainwater.
- To improve and increase the production of food crops, horticulture, fodders and wild life resources.
- To enhance the ground water recharge, wherever applicable

Pre-field Research-

In pre -field work we collected Topographical sheet from Survey of India and studied previous literature data about Watershed management and development in India.

Investigation of site-

Survey of Watershed: In preliminary survey we studied about the selected region considering on various parameters. Observation of previous soil and water conservation structure.

V. FUTURE SCOPE

The future scope of watershed development involves all actions and programs aimed at achieving an overall balance between utilization and conservation of natural resources in watershed. It can be improved the ground level of natural resources and its helpful for agricultural purpose. Watershed development goal to balance the conservation, regeneration and use by humans of land and water resources within a watershed.

VI. RESULT

As compared to conventional concrete cubes, there is reduction in weight of concrete cubes containing plastic waste.

- For 10% partial replacement, there is reduction of 6%.
- For 15% partial replacement, there is reduction of 14% (Plastic + Fly ash)
- For 30% partial replacement, there is reduction of 18%

VII. CONCLUSION

Watershed development are important because the rainwater, surface water features and stormwater runoff within them eventually drain to other bodies of water. When developing and implementing water quality protection and restoration actions, it is critical to consider these downstream effects. The greatest way to encourage people to participate in these techniques is through appropriate information and awareness; people support will strengthen the capabilities and advantages of such management strategies. Local partnerships and alliances between the government and the people must be improved in order to increase awareness.

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