

SUMMER INTERNSHIP
AT
WATERSHED SUPPORT SERVICES AND ACTIVITIES
NETWORK (WASSAN)



A REPORT ON:
UNDERSTANDING WATERSHED MANAGEMENT

Submitted by:

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(0091)



Celebrating 35 Years of Institutional Excellence

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And lastly my classmate Avinash Gaurav who was also an intern at WASSAN almost every day we had long discussion on the trainings we received.

Signature

Sunny Singh

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ACRONYMS

NGO = Non-Governmental Organization.

WASSAN = Watershed Support Services and Activities Network.

NRM = Natural Resource Management.

WASP = Wassan Action Study Project.

PIA = Project Implementing Agencies.

BRLF = Bharat Rural Livelihood Foundation.

MGNREGA = Mahatma Gandhi National Rural Employment Guarantee Act.

UNICEF = United Nation's Children Fund

QGIS = Quantum Geographical Information System.

IWMP = Integrated Watershed Management Programme.

DPAP = Drought Prone Areas Programme.

DDP = Desert Development Programme.

WDT = Watershed Development Team

GoI = Government of India.

SECTION-1

ABOUT THE ORGANISATION

WASSAN emerged as an informal accumulation of NGOs in the year 1995 to work towards influencing the Watershed Development Programs of the Government which were already being implemented in major drought prone areas keeping in mind the overall economic development of the poor, women, and the various marginalized sections of rural India. We need to understand the fact that prior to this initiative all the work related to Watershed development was taken up by the government. WASSAN initiated towards finding a creative space within this government system with other major aims such as capacity building of the stakeholders, influencing various policies related and empowering the rural community were some of the main agendas of WASSAN.

The 1994-95 Participatory Watershed Development Program Guidelines can be termed as one of the most important driving forces to start WASSAN, they are looked up as historical landmark in India's fight towards land degradation and the related livelihood around. The most significant change these guidelines brought was the shift from department centered and thinly spread investment to an area based investment and this area being managed by an external organization. The public funds were to be handed over to the community to plan and execute and invest in the regeneration of natural resources with the synthesis of participatory and community centered approach.

It also brought a twofold challenge for the various associated NGOs firstly changing the nature of how they work meaning now the NGOs had to play a new role altogether from being part of the implementation now they had to act as facilitators and secondly working with large scale publicly funded program.

To initiate this important and long journey many NGOs came together in Andhra Pradesh this accumulation was named Centre for World Solidarity in 1995. The major concern they were looking at dealt with finding proper ways of grounding the program and also building an interface with the government for the NGOs.

WASSAN Action Study Project taken up as a network initiative along with three NGOs to work on six Watersheds to promote participatory process of community organization. As the magnitude

of efforts required rose with time, thus came WASSAN as a full-fledged support team to serve the agenda as an independent, nonprofit network based organization in 1999 with Sri. B N.Yugandhar as managing trustee.

The organization has incorporated more and more partners to promote participatory initiatives and enhancing capacity building. Major steps include working with community-based organizations since 2003, partnership with Mandal Mahila Samakhyas to promote learning on larger grounds. In the year 2004 working with NRM based cooperatives and Panchayat Raj institutions also studying on wage issues in partnership with Agriculture Labour Unions.

VISION

WASSAN vision is all about establishing a habit, an attitude, a belief through participatory processes including a well-organized, well established network approach that fortifies the Natural Resource Management (NRM) and work towards providing livelihood for the people in drought prone areas. The participatory process can be further divided into three different branches of the organization performing different duties but with a common goal these are:

❖ RESEARCH, MONITORING AND EVALUATION

WASSAN Group of Institutions accepts that exploration contemplates, observing and assessment related tasks give a chance to orchestrate the encounters from genuine circumstances and convert them into valuable information items (reports/experiences created from field work/investigation). These information items are valuable apparatuses for advocacy and capacity building

❖ NETWORKING AND POLICY ADVOCACY

Networking is one of the significant guiding principles of WASSAN Group of Institutions. WASSAN accepts that fitting advancement arrangements could be investigated by uniting pertinent mastery, encounters and concerned organizations, on to a common stage. Networking requires participation, conjunction and composed endeavors. Perceiving and recognizing job/commitment of every part in this interaction is a significant necessity. Networking likewise works on the nature of strategy and program plans, as this incorporates various measurements. Further developing adequacy of public investments through cooperation, value and ecological sustainability is the key for policy advocacy as well.

❖ CAPACITY BUILDING

Center order of WASSAN Group of Institutions is to build capacity of partners for development activities. Participatory strategies; empowering hierarchical and institutional engineering; steady strategy support (managing finances in best possible way) are foundations of capacity building. Preparing program; workshops/courses; seminars, training programs, hand holding support (post preparing support administrations); warning administrations by specialists; suitable establishment advancement/local area associations; methodical task arranging/survey frameworks, examination and development (pilots/tests) are some of the fundamental methods of building limits.

MAIN OBJECTIVES OF WASSAN

- To participate and engage in the errand of improvement and strengthening of poor and economically weak people concerning watershed advancement projects like Water Management, Crop Management, Afforestation, Pasture/Fodder Development, Rural Energy Management, Soil and Land Management etc. or to provide all the help and support to an organization performing the above mentioned tasks.
- To support and promote the movement of capacity building in watershed ventures. Including things that are incorporated and in a way related to the holistic development of the people participating in the particular watershed such as schooling, information sharing, skill development and attitude changes at all levels, through all conceivable media and technology, independently or together with others.
- WASSAN helps in guiding, advising people on watershed crop management and also acts as watershed facilitator or manager.
- To embrace, set up, prepare, keep up with, oversee, coordinate, create, advance, energize, help, finance, underwrite, approve and support any watershed improvement action and business endeavor that help the poor and tribal community, attempt, carryout and support advancement programs for advancing the government assistance and social elevate of the poor by adding to upgrade their abilities, give methods and direction in the space of farming practices, their item advancement and advertising, natural capacities, for example, soil and water preservation towards accomplishing fair friendly turn of events.
- To help, start, sustain, and advance, items in the interest of accomplices, advancement of business openings and promotion of business networking for goods produced.

Three interesting branches operate at WASSAN

Branch of Change, Branch of Knowledge and Branch of Human Institution Development

All these branches are inter-dependent this co-construction supports the organization to adopt strategic process, policies with ever evolving time. Each branch is led by two members the chief operating officer and associate chief operating officer. Together they form the Strategic leadership team headed by executive secretary of the organization. Both WASSAN Foundation and WASSAN Public Charitable Trust would foster a vigorous Management Information Systems (MIS) for following the arrangement and venture related assets (funds; results and different resources, and so on) WASSAN Public Charitable Trust and WASSAN Foundation would have normal letter head and sites to demonstrate cooperative game plans between these two organizations The ToRs of all staff of WASSAN Public Charitable Trust would plainly show that they would be conveyed to WASSAN Foundation according to the necessities of the activities that WASSAN Foundation and WASSAN Public Charitable Trust. The assets at WASSAN Foundation would be used for the normal motivations behind WASSAN Public Charitable Trust and WASSAN Foundation on need premise. The monetary requirements of WASSAN Public Charitable Trust would be considered on need premise by WASSAN Foundation as far as asset usage at WASSAN Foundation. Normal and intermingling gatherings would be coordinated consistently between these two associations to guarantee that there is a typical game plan at each level. Leader Secretary of WASSAN Public Charitable Trust is deputed as Managing Executive of WASSAN Foundation, to guarantee a typical strategy and combination between these associations.

SUMMARY

We all are very well aware of the fact that India is a rain fed nation meaning 60% of the net shown area comes under rain fed lands, depending on the rainfall received over a year. In terms of both extent and Value of produce India ranks highest among numerous countries. The rainfall in India is very erratic and unpredictable in nature hence many areas in the dry seasons have to go through tremendous problems such as productivity being low, the farmers often take high risk such as loans for the crops as compared to the uncertainties, although there has been tremendous advancement in technology used by farmers but it is an ongoing process and the farmers need to learn and practice accordingly and lastly the degrading natural resources. Few areas do receive well to heavy amount of rainfall but due to lack of any sustainable method to conserve and save the excess water it all goes waste damaging the soil, and also leading to floods in many areas. These extreme seasonal fluctuations makes the whole region even more underdeveloped, the people living the areas have a sizable number of unemployed, poverty stricken and undernourished population. The state also diverted or we can say kept more focus on the areas that already had good amount of water available for irrigation , hence the irrigated areas used to have more investment on infrastructure and technological intervention due to more productivity as compared to the rain fed areas.

The two most extreme situation or problem that rain fed areas are confronted with include:

1. Very heavy rainfall leading to surface runoff during the monsoon season resulting in soil erosion and siltation.
2. Severe or acute droughts.

The history of watershed development in India is an age old practice but the level of seriousness was raised even more after the drought of 1987 also known as the drought of the century with rainfall deficit of 19%, affecting 60% of crop area and 85 million people severely affected.

Watershed Management has been a dynamic process incorporating change with changes and needs. The most recent being the involvement and encouragement of people's participation. More than US\$2 Billion has been invested by the GoI through different ministries in the last 50 years. What is Watershed Management? What practical impact it has created? What are the people getting out as benefits from Watershed initiative? What are the different steps involved and impact it creates.

SECTION-2

SUMMER TRAINING REPORT

My internship at WASSAN (Watershed Support Service and Activities Network) has been a life changing experience for me. It has introduced me to this whole new concept of Watershed Management which is very fascinating and after going through numerous reports and articles about the success of such initiatives I really aspire to work in this field as effectively as possible.

In this internship I was given the opportunity to attend an online training programme conducted by WASSAN as part of their training initiative. The people attending the training were from different areas associated with different organizations which work on rain fed agriculture, watershed, water conservation and soil conservation. I got the opportunity to learn so much in the twelve day training program some of the key topics covered in the training were

1. The whole concept of what watershed management is? What are its different phases?
2. The brief history of various watershed initiatives in India. How with time things have progressed?
3. Soil erosion and simple soil testing methods.
4. How the whole concept of participatory Integrated Watershed Management as a process works in practical?
5. The different aspects watershed touches from employment to malnutrition also how village level organization are formed and the importance they hold.

The training program was full with regular interaction and different assignment to work on. The diversity really helped into bringing out a cluster of ideas and experiences from different members attending the training. The principle guidelines given by the GoI related to watersheds was also talked and discussed about.

This training program acted as a catalyst for me to read, research about watershed practices in India. The case study I have chosen for this report is about an initiative by WASSAN known as WASSAN Action Study Project (WASP) a learning and dynamic process that took the responsibility to create six Watersheds initiative in the Ranga Reddy district of Telangana with three Project Implementing agencies (PIA) named VIKASAM, Serene Services and Research in Environment and Education Development society. Based on my study on this project I have tried

to incorporate all the steps taken in the completion of the project and the overall impact it had in the respective villages.

I have also tried to incorporate all my learnings of the training I received in this paper and the current initiative “Jiwi Daah Hasa” which basically means life, water and earth respectively, the Government of Jharkhand , Bharat Rural Livelihood foundation (BRLF), Ministry of Rural Department (MGNREGA) and WASSAN have come together to work on this High Impact Mega Watershed Project.

MAJOR LEARNINGS FROM THE TRAINING.

1. Understanding what a watershed is and its various components.
2. The importance of Mapping exercises such as socio-economic mapping with the help of all the village members, resource-mapping of the area.
3. The various objectives of a watershed
 - National resource management through community participation.
 - Erosion Control.
 - Groundwater recharge.
 - Vegetation Development.
 - Socio-Economic Development.
4. Methods to achieve these objectives
 - Area Treatment Measures such as CCT, SCT, Community Forest Development.
 - Water Conservation and Water harvesting.
 - Renovation of traditional water bodies.
5. Evolution of watershed development programs in India.
6. Steps involved in the conducting a watershed initiative
 - Take an area on which the community is dependent (Area approach)
 - Organise the community for collective action
 - Make them understand the resources
 - Plan for the Regeneration of the area (regeneration of NR, Production and Livelihoods)
 - Ensure the effort and impacts sustain over a period
 - Set the area in a growth path.
7. The importance of people participation in watershed initiatives.

OBJECTIVES OF THE STUDY

- ❖ To understand what Watershed Management is?
- ❖ The general phases of a Watershed Management.
- ❖ A brief history of watershed management in India.
- ❖ What are the 1994-95 watershed development guidelines in India?
- ❖ To understand how practically a watershed is enforced through case study of WASSAN Action Study Project in Ranga Reddy district of Andhra Pradesh?
- ❖ The different steps involved in Participatory Watershed implementation.
- ❖ The impact Watershed has created in the area.
- ❖ Few limitations and recommendations.

METHODOLOGY

The report is based on secondary data. I have gone through numerous case studies of watershed practices in India with special reference to Andhra Pradesh.

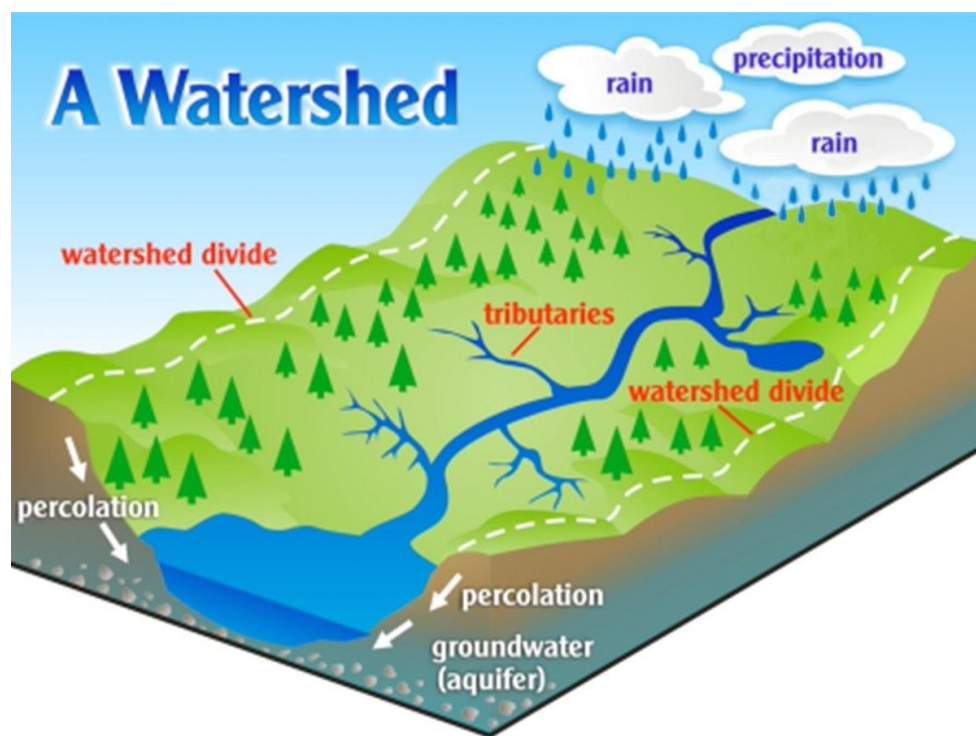
The core of the report is based on the study of WASSAN ACTION STUDY PROJECT (WASP) report which included the implementation of 6 Watershed by 3 Project Implementation Agencies in the Ranga Reddy district of Andhra Pradesh.

Through the study of the report I have tried to explain the methods used at every phase of implementing a watershed because this whole project was initiated to demonstrate that participatory Watershed Management process can be actually be put in practice based on the 1994-95 guidelines. Impact and effectiveness of watershed development programmes paper by Central for Rural Studies which analyzed reports from 12 states with all the dimensions of watershed development programme under IWSM and DPAP now among these states in Uttar Pradesh WASSAN was the organization with the responsibility to conduct the study so I have included the various findings from that particular study as well.

Based on the different reports, articles, videos available about various programmes and initiatives individually, by private entities as well as collaboration of both reading them, analyzing them to note the major takeaways from the project, the impact it created.

UNDERSTANDING WATERSHED MANAGEMENT

UN estimates that 3.2 billion people reside in agricultural areas with high to very high-water shortages or scarcity. In order to understand the term Watershed, we need to look at the word carefully it comprises of two words 'water' and 'shed' we all understand what water is and the term 'shed' here basically refers to where in the water sheds such as the land, soil, various water bodies. To explain further the water that is coming in form of rain gets collected or deposited in some area at the end all this water has a common outlet this whole region is known as a 'watershed'.



Watershed is all the land that drains into one location or a body of water, any land whether it is a park, a farm, forest, even the soil we build our home on is also a part of watershed. Think of a watershed as a funnel, collecting all the water within a specific area and draining it into the nearest water body, drop by drop the water is channeled into the soil, groundwater, small river streams making its way to larger rivers and eventually the ocean. Everyone in the world lives in a watershed. Our environment, our economy and our society all depend upon a healthy watershed. In a more scientific term a watershed is a hydrological unit of land that nourishes all the water running under it and drains at a common outlet.

Management here basically refers to the process of administrating or dealing with or people. Management consists of engaging functions of creating policy and organizing, planning, controlling and directing an organization's resources in order to achieve the objectives. Watershed Management is comprehensive, integrated, multi-resource management planning process that seeks to balance healthy ecological, economic, cultural/social condition within a watershed. The judicious management of three basic resources of soil, water and vegetation on watershed basis. To conclude efficient management and conservation of surface and ground water is watershed management.

KEY STEPS IN WATERSHED MANAGEMENT

1. RECOGNITION PHASE

An all-inclusive watershed initiative should start with identifying the various characteristics of the watershed keep a note of all the natural resources in the watershed. All this needs to be done to come up with a baseline of the quality and nature of the watershed so that proper intervention planning can be conducted and changes or improvements within the watershed is measured.

The foremost important step in planning of watershed is the understanding and use of maps to delineate various things which includes the boundaries of the watershed, smaller drainage basins within the watershed, all the present resources in the watershed, clear demarcation between man-made and natural drainage systems, listing and mapping the land use and land cover pattern. The understanding of maps and use of various types of mapping provides with concrete data to work on and plan accordingly. Most of these maps are available on government websites, many individuals organization working in this field also maintain maps. Applications such as QGIS, Google Earth are being adapted to utilize and adapt to new technology of mapping. All other types of important required information is collected from different surveys like soil survey , land capability survey, forest, engineering and socio economic survey etc. .

With all this data collected it helps in recognizing the problem of the watershed area along with this the various causes of the problem and its effect and finally it helps in developing alternative solutions of the problem.

2. RESTORATION PHASE

Restoration means bringing back to a former position or condition the restoration phase includes two brief steps the watershed is looked after and proper step by step initiatives are taken as steps to find the best solution to the problems identified and all these solutions are gradually adopted in the watershed to restore it in its best form.

This process in brief includes checking the water quality available, if there is any water damage that has to be repaired and repopulating the watershed with plants and animal species. Also in some watershed are left out to natural repopulation of native species to allow restoration.

We can divide as restoration in two categories that are reestablishment and rehabilitation. Reestablishment refers to the new adaptive methods , steps that are taken to restore the various characteristics of the watershed in its original form whereas rehabilitation is more towards repairing the watershed by rebuilding the physical parts of the watershed it helps in working and improving the short-term. Through restoration our focus is on restoring the ability of the ecosystem to function. The ecosystem has a huge number of interactions starting form between the inhabitants of the watershed, water level and flow, the changes occurring over time resulting in changing the dynamics of the ecosystem such as soil erosion, replacement etc.. While restoration we need to keep in mind that change in one dynamic will have effect on the other aspects so we need to have a broad view to take steps forward.

3. PROTECTION AND IMPROVEMENT PHASE

The word protection basically refers to adopting important steps and measures to safeguard the watershed. Keeping a regular check on the functioning and also adopting new course of action methods so that the watershed be as effective as it can. There are various tools and techniques developed for the protection of watershed Such as land use planning because it has a strong influence on the overall quality of the watershed it has to be critically analyzed, land and conservation, the aquatic buffers, the erosion and sediment controlling tools, keeping a check on the discharge can be really helpful in protecting the watershed and for each of these tools there are specific methods designed. Lastly comes the improvement phase of the watershed in this phase we look at the overall improvement of in the watershed various aspects such as agriculture ,forest management , the production , how the watershed has managed to bring about socio-economic changes to achieve the aim and objective of the watershed. Watershed management activities look forward to moisture conservation through control of portion of precipitation which is normal runoff. The longer the water stays on the land surface more chance it has of entering the ground. Effective methods include Contour Binding/ graded binding, Check dams and gully control structures, land levelling, bench terracing, farm ponds, diversion drains.

For each of these phases to be a success we need to keep in mind that the whole watershed management is a comprehensive system and there are several components and the interaction between these components defines the watershed system.

The watershed should have participation and partnership of the locals, the concerned planning authorities. A successful watershed planning includes a combination of social values with scientific and technological know-how. The chances of a watershed being successful depends more on the human aspects more than the technical element so any sort of planning should focus on the population living in the area. Multiple disciplines such as geology, social science, hydrology, engineering, economy and forestry all these fields together contribute to a healthy watershed. Apart from these core principles some other include all the stakeholders should participate in the decision making process, sustainable use of all natural resources including soil and water, focus on both economic and environment development as well as protection and lastly increasing the resource productivity sustainability.

WATERSHED MANAGEMENT IN INDIA

India supports over 15% of the world population in the 2.4% of the geographical area this huge number difference presses on the limited natural resources such as land and water etc. we have. The overuse and continuous practice has transformed into badlands. To restore all the ecological imbalances it is very important to develop the degraded non-forest wastelands. It is very important and a multi-dimensional along with developing human resource in watershed along with generating awareness about importance of sustainable development and maintenance of existing work force and skills in rural youth to work in watershed development in a well-managed approach.

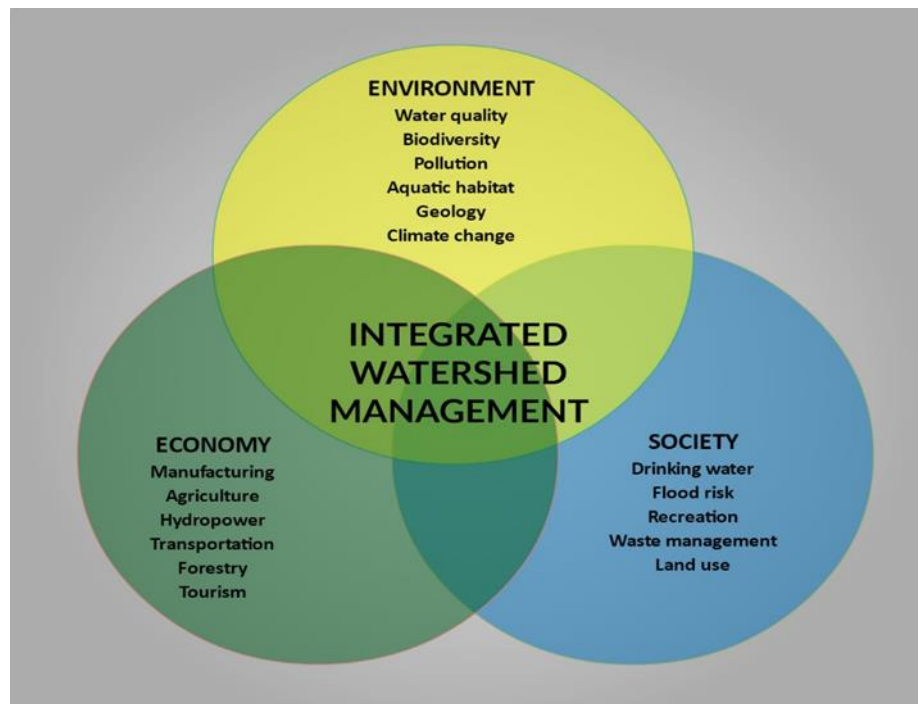
Watershed in India has a long history and it is as long as growing crops in a systematic irrigation and this leading to development of tanks/reservoirs to increase the production to meet the ever growing demand. Different rulers who ruled the country executed certain works based on the need of the people and these beneficiaries were taxed and revenue was collected from them. In the year 1844 and 1845 under the British Government Sir Arthur Cotton submitted two reports based the survey conducted by him. of the entire area from Papi hills to Sagaram and his initiatives led to the implementation of preserving the river water of Godavari and use it for agriculture barrage type storages were formed. During the British rule watersheds were mostly managed by village level members of different government bodies with firm grip and strict rules including punishments for people who damaged natural resources.

After the country's independence all the power that the village executives had gradually declined due to changes in policies in the democratic set-up and liberalization of spirit of freedom leading to damaging the vegetation in rural areas. Slowly and steadily many initiative were taken by the Government such as afforestation measures, soil conservation measures, run-off water utilization programs etc. As much as these efforts were appreciated they were not able to achieve the expected results and did not on a constant and continuous basis. Watershed Development programs were launched in the year 1983-84 by the Government of India to conserve and utilize natural resources with ultimate goal to improve productivity and socio-economic status.



Integrated Watershed Management Programme (IWMP)

Three programme Integrated Wasteland Development Programme (IWDP), Drought Prone Areas Programme (DPAP) and Desert Development Programme (DDP) were centrally sponsored programs implemented by the Department of Land Resources, Ministry of Rural development, and Government of India. Separate norms, funding patterns and technical components were implemented based on their respective objectives. The DDP was more about reforestation to arrest the growth of hot and cold deserts, DPAP focused on non-arable lands and drainage lines for in situ soil and moisture conservation, agro forestry, pasture development, horticulture and alternate land uses. IWDP worked on developing pasture, soil and moisture conservation as prominent activities on wasteland. The most common theme was sustainable management of land and water resources.



To bring everything together and an integration of all a new initiative was taken named Integrated Watershed Management Programme (IWMP) developed keeping in mind the aspect of a holistic and participatory planning , generating scope for livelihood growth of the people

1. Delegating Powers to States - The states had the power to sanction and oversee the whole implementation of watershed projects within their areas.

2. Well Structured Institutions - There are dedicated agencies with well trained professional teams at national, state and district level for managing the watershed programs.

3. Financial Assistance to the above mentioned dedicated institutions it will provide strength to the institutions and will ensure professionalism in management of watershed projects.

4. Duration of the Programme the overall time period has been modified in the range of 4 to 7 years depending upon how much the initial phase of preparation then implementation phase and lastly the amalgamation phase.

Activities Include

-The treatment of the area by practicing soil moisture conservation and vegetation measures example Agro forestry, horticulture etc.

-The land being used for practicing multiple crop system and activities to develop the land as whole.

-Promotion of natural practices to regenerate the land to go back in its original state.

- Encouraging agro-forestry and other safeguarding techniques for the development of land.

- Changing the common practice of using wood and fuel for regular and daily practices and substituting it.

-Training, and creating greater awareness among the participants.

-Promotion of people participation.

WATERSHED DEVELOPMENT GUIDELINES

Numerous Central as well as state governments took the watershed development program. Until 1997 the GoI dispatched various projects namely the Drought Prone Area Program (DPAP), Desert Development Programme (DDP) included aspect of watershed in 1987. The Integrated Watershed Development Project (IWDP) started by the National Wasteland Development Board in 1989 additionally pointed toward creating badlands dependent on the idea of incorporated watershed advancement. In the year 1994 the Ministry of Rural Development (MoRD) issued new inclusive guidelines for all its projects.

The guidelines put special focus on improving the economic and social conditions of the resource-poor and socially backward, disadvantaged sections of the watershed community. Few key guidelines included.

- ❖ More impartial dispersion of all the benefits from land and water, opportunity to generate income and improve farm resource development.
- ❖ The villages willing to start a watershed initiative should be willing to participate and voluntary contribute to the success of the project and once they project is over it's the people who take the responsibility to sustain the watershed practices.
- ❖ Minimum of 5% of the total expense should be contributed by the village community, or Panchayats, and 10% by people who will directly benefited from the project.

- ❖ In the selected village a watershed of 500 ha has to be identified by Watershed Development Team (WDT) with the proper consultation and guidance by the village Panchayat.
- ❖ Area has acute shortage of drinking water or Population of scheduled caste and scheduled tribe's dependent is large.

WASSAN ACTION STUDY PROJECT CASE STUDY

Key learnings from WASSAN Action Study project of 1998-2002.

The Project was initiated just to show that the participatory watershed management guidelines can be actually put into practice within the government policies and programs. (Guidelines of 1994-95). The project had three major objectives

- ❖ To show that yes participatory processes do work in the rural setting by the use of planning, community participation and organization, capacity building and implementation asserting that these practices will lead to fulfilling the aims of watershed management.
- ❖ To hold the district and state level government accountable for their administration and operational role.
- ❖ To act as a support service for other PIAs and NGOs interested or are working on other different watershed practices and are ready to apply the participatory practices in their respectable setting.

Selection of Watershed Areas.

Sr. No	Village	Watershed Name	Mandal	PIA
1	Girghitpally	Girghitpally-1	Vikarabad	REEDS
	Jambapur Thanda	Girghitpally-2		
2	Nazeerabad	Lothu Vagu	Pagiri	VIKASAM
	Mallomoniguden	Pedda Vagu		
3	Rompally	Vivekananda	Bantaram	Serene Services
		Maisammakatta		

Villages and watersheds under the Project

The traditional folk art of 'Palle Suddulu' was used to spread word about the process and how self-regulation is important.

A lot of mapping exercises were done such as the social mapping in which the marginalized, the poor are identified are motivated to be a part of self-help groups. Resource mapping of the area with the help of all the villagers was done, the watershed boundaries were delineated.

Preparation Phase

This phase lasts for a period of one year and it deals with the training to be given to the selected facilitator for each watershed. The facilitator attended a training of 30 days and we're responsible for two watershed each. There is a continuous communication between these facilitators and village members and guide them as per their training.

Entry Phase

In this phase the facilitators get there understanding about the village enhanced by analyzing the socio-economic conditions of the area, the youth pattern the opinions of the people and also identifying the hurdles that might affect the implementation. Awareness about the project was spread through regular meetings, interaction with Gram Panchayat and numerous cultural shows and videos were also used.

Community Organization Phase

This phase puts special influence on the role of people in making a watershed initiative a success. The people who are in any ways dependent on the watershed came together and formed Watershed Committees with more than 50% of women participation and one third from SC&ST. This promotes a sense of belongings to the people associated with the project.

Capacity Building

Various training programs, communication materials, on job training and hand holding were some of the methods used to promote and provide a support system for the individuals becoming part of the watershed.

Implementation phase.

This is the last phase and it includes two aspects planning and implementation all the planning part was done with full cooperation of the village people. The people were given responsibilities to take care of the watershed and we're designated different jobs and duties. Apart from the selected 6 many other watersheds were developed in nearby villages. The participatory process was used and adopted in these initiatives as well.

Once the planning step is completed the various stakeholders who are part of the watershed are to perform certain duties to make the watershed initiative a success.

The people part of the watershed committee along with the facilitators take the job to take care of the watershed even after the project is over.

Other Major Impacts:

Development of Livestock

We need to understand that livestock is one of the most important natural resource and works as a livelihood asset for the poor. Although the issue of livestock is not part of watershed in project WASP this issue was also addressed and major steps were taken such as initiating activities related to water for livestock, development of common property for fodder and lastly numerous animal health workers were developed to provide and help and support to the people with animals so that they can get the maximum benefits out of them.

Agriculture

A number of demonstration cum trials were used on the land such as four improved short duration varieties of dry land rice, three varieties of green gram, three varieties of chick peas etc. were planted in small lands to see what is the best suited crop and what requires what sort of attention to grow in full potential. Along with this the practice of natural pest management, nursery in common lands were some of the more steps taken within the project.

Forming Institutions

The project was a success as people were organized and came together to be part of the different self- help groups, community organizations, and became stakeholders in the whole process. Although once the program was over these groups did not stay as active as they were but in the

four year of the project they became politically active and aware about how they can approach the administration for discussing issues and problem. Some of the SHGs still participate in different government initiatives to promote SHG movement.

Learning Grounds

These villages became a source of learning for many organizations and individuals. The Peda Vagu and Lotuvagu waterhseds have been visited by more than 5000 people. These are used as training grounds for people joining WASSAN.

Land Treatment

89% of cultivable and 29% of uncultivable land were treated in the waterhseds. 75% of the dry land was also taken care of and thankfully the returns have been great for the people associated.

Water Harvesting Structures

A lot of check dams, bunds, percolation tanks and gully control were constructed. About 70% of the total expenditure was on these and thankfully these structures are mostly permanent and intact they do not need any maintenance.

LIMITATIONS

- The whole process of monitoring and support was not as smooth as so many actors were involved decision making and fixing of responsibilities was always an issue.
- The irregularities in funds also led to lot of delays and problems the training initiatives and overall work was sometimes put on hold due to lack of funds.
- The whole process of community organization and bringing people together, handing over responsibilities to them takes a lot of time as compared to mainstream watershed it also created doubts in the mind of the stakeholders as the delays became common.

ASSESSMENT OF WATERSHED INITIATIVES IN UP – STUDY BY WASSAN under the Center for Rural studies.

A total of eighty-seven micro watersheds in sixteen districts of UP in which either IWDP initiatives or DPAP watershed initiatives were being conducted were analyzed by WASSAN to prepare a report to be used by NIRD and SIRD.

MAJOR FINDINGS

1. Quality and Status of Water Harvesting Structures

Out of the total 87 watersheds taken as sample for the study 23 were in good working conditions, 41 satisfactory and lastly 23 were in poor condition. In the study it was found out that DPAP initiatives have worked better than IWDP in terms of water harvesting. There are not proper maintenance of the structure constructed for harvesting also leading to siltation problems.

2. Community Contribution to WDF

The stakeholders are supposed to contribute 10% of the total cost of work and this is to keep the assets running even after the completion of the project. Out of 87 watersheds only 2 had

the total contribution as per the government norms. In almost 62 of the watershed no contribution was made from the beneficiaries and the amount from the labor component was used or sometimes from the estimated and calculated project expenditure.

3. Groundwater improvement.

There was not much of improvement in the groundwater level in UP as per the report a marginal rise was noted. Another reason for less rise in groundwater can be attributed to the fact that UP faced severe drought conditions after the completion of most of the watersheds.

4. Reduced Soil Erosion

A watershed is judged well when it manages to reduce soil erosion by 50% and more and luckily UP was one of the best states in terms of controlling soil erosion and this can be attributed to the good quality of water harvesting.

5. Agriculture Productivity

Out of the 87 watersheds nearly 84 have seen a rise in crop intensity in UP. There has been a significant increase in the production of cereals, pulses, cash crops etc. The rise can also be attributed to the fact that with watershed came source of knowledge to use high yielding seeds, proper use of water for irrigation, and judicious use of manures and fertilizers.

6. Debt Reduction.

The concept of debt reduction is liberating and a big step in itself it has a lot of social and economic impact on the society from reduction in poverty to a better and sustainable livelihood. In terms of UP the debt position of 54 watersheds improved over time but the level of reduction varied.

7. Community Based Organisations Participation.

One of the important components of watershed is the development of Common Property Resources which is managed and taken care by the people from active local community to do so in a successful way the people need to participate actively and they do this through various SHGs, watershed committee etc. In UP only 12 of the 87 watersheds have a proper functional CBOs.

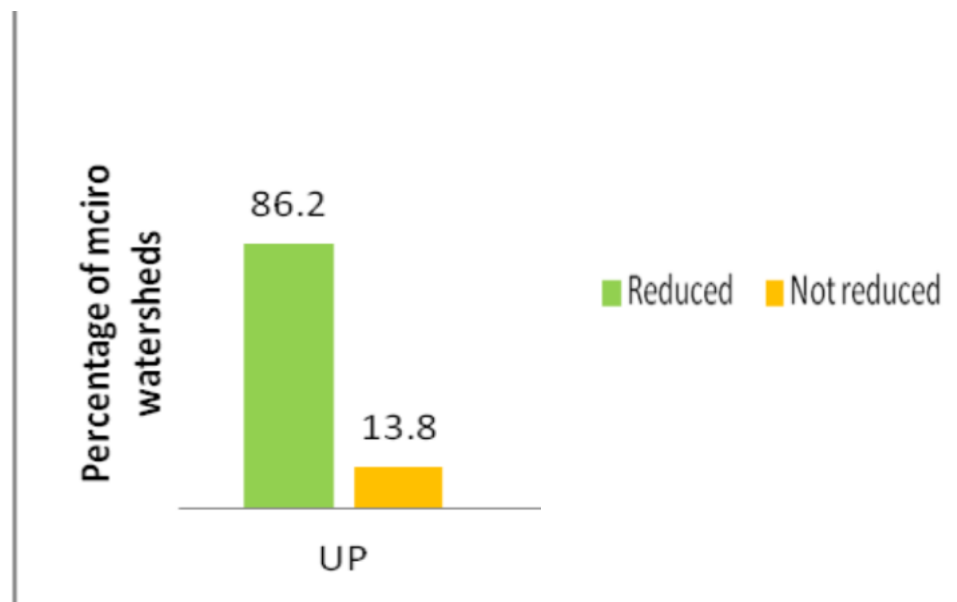
8. Reduced Migration

The component of creating employment that to in sufficient numbers so that the people do not have to leave their household and travel far to cities in search of jobs. In terms of watershed there is availability of jobs in the implementation phase but once the project is over and even if there is an increase in income and productivity but it does not stop migration completely.

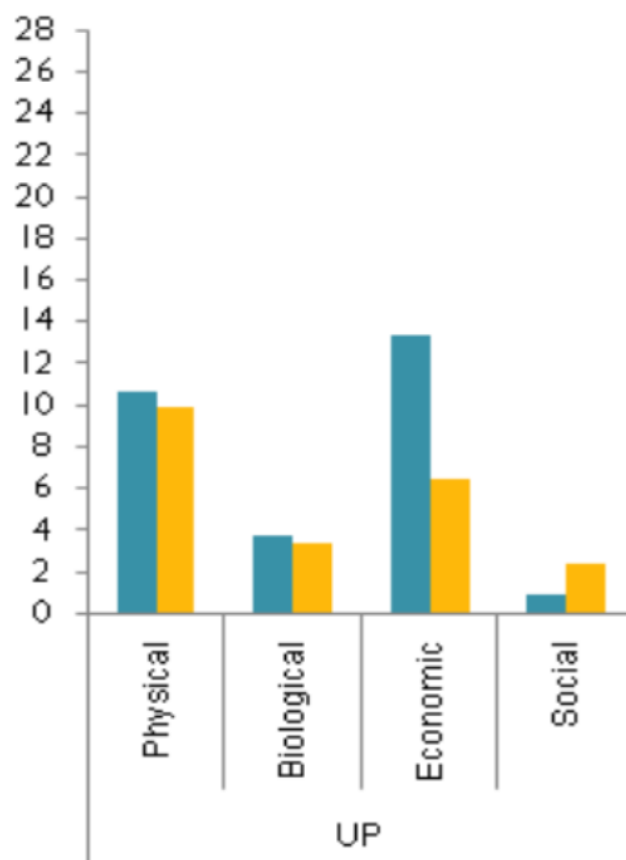
9. Women Empowerment

Empowerment means moving from a position of enforced powerlessness to one of power. In terms of judging the level of empowerment among women participation, mobility, how much say do they have in household decision making, community were taken into account.

As per the analysis the level of women participation was not at all adequate. They just had a mere presence and that did not created any real impact.



IMPACT ON SOIL EROSION IN UP.



OVERALL IMPACT ON DIFFERENT FACTORS IN UP.

JIWI DAAH HASA - LIFE, WATER, EARTH

This is the Mega watershed Project by the Government of Jharkhand, and I was lucky enough to be a part of this training initiative.

This project is for four years with some big names project partners from the Gram Panchayat to Women SHGs, the Ministry of Rural Development etc.

The focus area of this project is on the most marginalized and poor geographies of Jharkhand. The mode to do this is through increasing the capacity of the Gram Panchayats and the implementation of MGNREGS.

The goal is to create strong community organization ready to take responsibilities in the collective actions.

The final goal being the improving the income of 100000 small and marginal farmers with the regeneration of the agro-ecology. The end goal being providing a sustainable and secured livelihood. Other major objective include the improvement of crop intensity in 1.50 lakh ha of land. The facilitator or representatives numbered around 4000 from different SHGs, Gram Panchayat and Civil Societies are to be trained and make an effective member of the watershed.

Types of Interventions

- Water Harvesting

To conserve and save the excessive running water into small water bodies so that whenever the area goes through a dry spell this water can be utilized.

- Land Development

The soil has to be given special attention, the erosion has to be controlled and also insuring that there is enough moisture in the soil.

- Agriculture and Horticulture

The proper utilization of land available is very important and in order to revive the agro-ecology many methods are to be used such as crop diversification, focusing on. Less use of chemicals and preparing a proper system to effectively use the conserved water.

Expected Impacts:

1. Reducing the run-off by 50%.
2. Improving water availability by 60%.
3. 1.7 Lakh ha of un-irrigated land to be converted into irrigated land area.
4. Intensification and Diversification of farming areas by 50%.
5. Capacity and knowledge building of PRIs and field practitioners.

STRENGTHS OF WATERSHED INITIATIVES

1. Improvement the Natural Resources

In the fragile atmosphere of arid and semi-arid the land and water has been developed. Various practices such as bunding, trenching, diversion of channels, water paths, etc. have been developed to initiate conservation and are being taken up on watershed basis. The top soil was protected by constructing farm ponds, percolation tanks, check dams, nala dams etc.

2. Rise in Overall Irrigated Areas

A lot of wells and bore wells have increased in huge numbers due to in-filtration of rainwater and improving the ground water. Afforestation in squander lands and minor terrains have expanded

the overall precipitation received by the area. Formation of family resources and normal property assets are by and large utilized as key markers reflecting economic well-being as far as way of life and degree and nature of people groups as an inclusion in the undertaking.

3. Increasing Productivity of Crops

The farmers who are becoming a part of the watershed are getting training in crop production technologies as a result the productivity of crops increases even during dry years. And this rise in productivity is one of the land marks of watershed management programmes.

4. Rise in Employment Opportunities and Income Levels

The overall migration and been reduced and employment opportunities have increased especially for laborers. The number of days the farmers were associated with agriculture in a year has also increased significantly due to the use of new technologies, statistical data, diversified farming activities etc. Due to production of good crops, vegetables and horticultural crops have resulted in higher level of income.

5. Drinking Water

A lot areas have seen a commendable improvement in access to fresh drinking water in the watershed areas. The catchment area of various reservoirs and wells have increased this also enables the farmers to use the stored water for irrigation purposes even if the natural rainfall received is less in the year.

6. Livestock Development

The availability of more and more grass, water, fodder etc. have resulted in increased number of Sheep, Goats and Dairy animals. Growth and development in an area is directly related to vegetation and livestock.

7. Farmers Skill Development Programs

Farmers were trained with the use of new and latest technologies, they adopted new farming practices and systems. Self-help groups were developed to incorporate the women which led to a more balanced social and financial capital through these formal and informal groups.

8. People's Participation

The success of any Watershed Management initiative depends on the level of acceptance and participation by the people of the area. Sustainable participatory development is an important aspect for the conservation of natural resources.

The harmony among environmental and economic is vital for a significant watershed management. The equilibrium is important for the nation at different phases of improvement. Clashes are expanding over shared water assets between horticulture, industries, furthermore, metropolitan homes use and also between state governments. So sustainable water management becomes hugely important for livelihood and economic development of the people. In a nation like India, where a great deal of running water goes squander, it turns out to be vital to apply the innovation of watershed management to address various economic, agricultural and livelihood practices.

CONCLUSION

The watershed initiatives in India are huge in number not only the Government or organizations but even individuals have been able to create a huge impact through watershed in numerous areas in India. The overall impact a watershed creates are life changing for the people associated with it.

Everyone associated with the watershed gets something out of it directly or indirectly, the organization holding the responsibility to implement the watershed also learns a lot. The

participation of the people is the core aspect of every watershed initiative, people become major stakeholders in the projects and it gives them a sense of belongingness they are able to assert authority as they themselves have contributed in the success of the watershed.

Small but effective changes are notable in areas with successful watershed the people start to live and expand their livelihoods in their own surroundings rather than migrating to a city for survival. The economic conditions of the people have improved significantly.

With the change in time new technologies are being developed and are used to make more effective decisions prominent example would be the use of Google Earth, GIS mapping etc. All these things help in prioritizing and selection of the best suited methods to address the gaps in the region.

It is a proven fact that participatory process is much more effective than any technocratic, top-down approach, a combination of participation and the best required technical input will be the best performing system of watershed management. The dynamic and evolving Government Guidelines also help for example in the new guidelines the implementing body is allowed to devote one year into social organization during this period they observe the village, promote equity, slowly steadily they understand the local people, the technology they will prefer hence it is bound to work better.

The simplest way I understood the whole watershed process is you try to make the running water walk, then once it slows down and starts walking you stop it so that the groundwater level can be improved. A whole lot of processes, techniques and technology are used in the completion of a watershed the average duration is near about of four years so it does take time but the results make it worthwhile.

- Take an area on which the community is dependent (Area approach)
- Organise the community for collective action
- Make them understand the resources
- Plan for the Regeneration of the area (regeneration of NR, Production and Livelihoods)
- Ensure the effort and impacts sustain over a period
- Set the area in a growth path.

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