

SUMMAR TRAINING
REPORT
PRESENTATION
ON

**A STUDY REPORT ON IMPLEMENTING INTEGRATED WATERSHED
MANAGEMENT PROJECTS AND ITS EVALUATION PLAN AT
ANADPUR BLOCK OF WEST SINGHBHUM DISTRICTS,
JHARKHAND**

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ROLL 0076

MBA IN RURAL MANAGEMENT 2020-22

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Profile of Watershed Support Services and Activities Network - Wassan



Vision



Entrench participatory processes through *network approach* that strengthen Natural Resources Management practices to secure livelihoods of deprived communities in drought prone areas.

Participatory practices include

* Network development * Capacity Building * Advocacy & Institutional development

Watershed Support Services and Activities Network (WASSAN) started in 1995 as an informal network of NGOs to influence the Watershed Development Program of Government being implemented in the drought prone areas for economic improvement of the poor, women and marginalized sections of the rural India

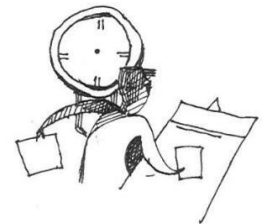
Mission

Funding supports

Supported by..

- State and Central Governments; NABARD; International Donors; Bilateral Projects; Academic Institutions; Indian Donors
- NGO and Networks of NGOs
- CBOS and Networks of CBOs

Mission: Evolution of Watershed Management Policies in India



Wassan's thematic area



4:20:29 PM Thursday July 15, 2021 [Login](#)

As Knowledge Partner and Support Organization on Watershed Management



WASSAN

WATERSHED MANAGEMENT

RAIN FED AGRICULTURE

PARTICIPATORY GROUND WATER MANAGEMENT

WATER SANITATION AND HYGIENE

LAND EMPLOYMENT AND ENTITLEMENTS

Organization leaders



Gagan Sethi

Director Jan Vikas

Organizational Development interventions.

He has helped many feminist organizations with their internal change processes.

He now focuses on governance and accountability of non profit.

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Trustee – WASSAN and Advisor NRM, Centre for World Solidarity

Shri Udayashankar has been a development professional in the fields of natural resources management and rural energy. He worked with AFPRO a reputed development agency in India, for a long period. He is passionate about potential contribution and roles of Civil Society Organizations in India and also concerned about transparency and accountability of public systems and CSOs. Gandhiji never distinguished between national character and personal character of any person

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P. BalaRam

Trustee-WASSAN, Executive Director Jana Jaagriti (Ananthapur)

P Balaram hails from an agriculture family in Penukonda Mandal, Anantapur District, Andhra Pradesh. After completing his masters in sociology, he started his career as development activist in Anantapur district in 1979. During 35 years of his career, he gained experience in different sectors – unions of agriculture labors; theater as a means of ensuring rights for marginalized farmers, environmental protection and drought proofing mechanisms. Currently he heads a voluntary

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Role of WASSAN in Watershed Management

Resource Support Organization – Providing Professional and advisory services to large scale watershed management projects (capacity building; project evaluation and monitoring support; research)

Project Implementing Agency – Implementing watershed management projects in selected blocks

Networking and Lobbying Group: Policy Advocacy along with like minded organizations for improving the policy and practice of watershed management

Improving the Content of Program: Diversity and Comprehensive approaches – rainfed agriculture and allied sectors; rights perspectives, etc.

Objective of the study



The objectives of the study are:



Objective 1: To learn the concept of watershed, different terminology and techniques used and its management



Objective 2: To understand and to find out the impact of watershed on livelihood, ground water and community based institutes



Objective 3: To understand the comprehensive treatment of watershed for sustaining institutes

Research Design

Study area: Anadpur block of West Singhbhum district of Jharkhand

Study Type: Descriptive and observational

Study Duration: June 11th to July 10th 2021

Method of Data Collection: The study is basically observational and descriptive in nature. The basic primary data were collected from members of watershed by observation, discussion and through Participatory Rural Appraisal (PRA) techniques and the secondary data were taken from various sources like WASSAN website ,Jharkhand watershed development programme and for the better understanding of watershed problem of West Singhbhum data comparing with East Singhbhum district.

Different approaches to **observational and descriptive study** such as naturalistic **observation**, participant **observation**, **PRA**, and **case studies** were followed:

- Visited village with watershed expert and we Interaction with Gram Panchayat Member to understand the implementation strategy and need for evaluation
- Conducted PRA to discuss about the water scarcity and its causes
- After PRA interact with watershed expert in villages for verification of all documents ,pass books, registers MANREGA job card ,land record papers etc.
- Visited field to cross check proper location and functioning of EPA works, cross check of all structures, its design and specifications.

As it was Observation and descriptive study, hence most of the data were in qualitative in nature obtained by observe participants' ongoing behavior in a natural situation while visiting and interaction with the members of the watershed In other words, **researchers** can data were captured what participants do as opposed to what they say they do.

However whatever primary data were gathered through structured checklist, was analyzed in excel to form tables and graphs for interpretation.

Introduction

What we think ?

Watershed development is NOT ABOUT ;-

- Just Ridge to valley treatment
- Just about structure
- About recharge

But what is watershed ?

Watershed development is about;-

- Mobilising and organising community for collective action .
- Regenerating natural resources
- Sustainable and effective use of the natural resources
- Improving livelihood of poor in particular area

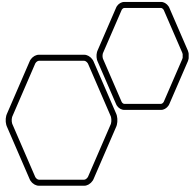
Watershed Management

PRINCIPLES OF WATERSHED MANAGEMENT

- Utilizing the land based on its capability.
- Protecting fertile top layer soil.
- Minimizing setting up of tanks, reservoir and lower fertile land.
- Protecting vegetative cover throughout the year.
- In situ conservation of rainwater.
- Safe diversion of gullies and construction of check dams for increasing ground water recharge.
- Water harvesting for supplemental irrigation.

What is Watershed

- **Watershed:** A watershed is defined as the land area drained by a river and its tributaries. It is used to define the surface water drainage boundary, or A watershed refers to the entire catchment area, both land and water, drained by a watercourse and its tributaries. A subwatershed refers to the catchment area drained by an individual tributary to the main watercourse. The concept of watershed originates from surface hydrology where a river is assumed to be affected primarily by its surface drainage area. In fact, both surface and subsurface hydrology define a river and the importance of subsurface hydrology should not be overlooked.



Integrated Watershed Management

- **Integrated Watershed management** is the process of managing human activities and to manage natural resources on a , taking into account of social, economic and environmental issues, as well as local community interests and issues such as the impacts of growth and climate change. is known as watershed Management.

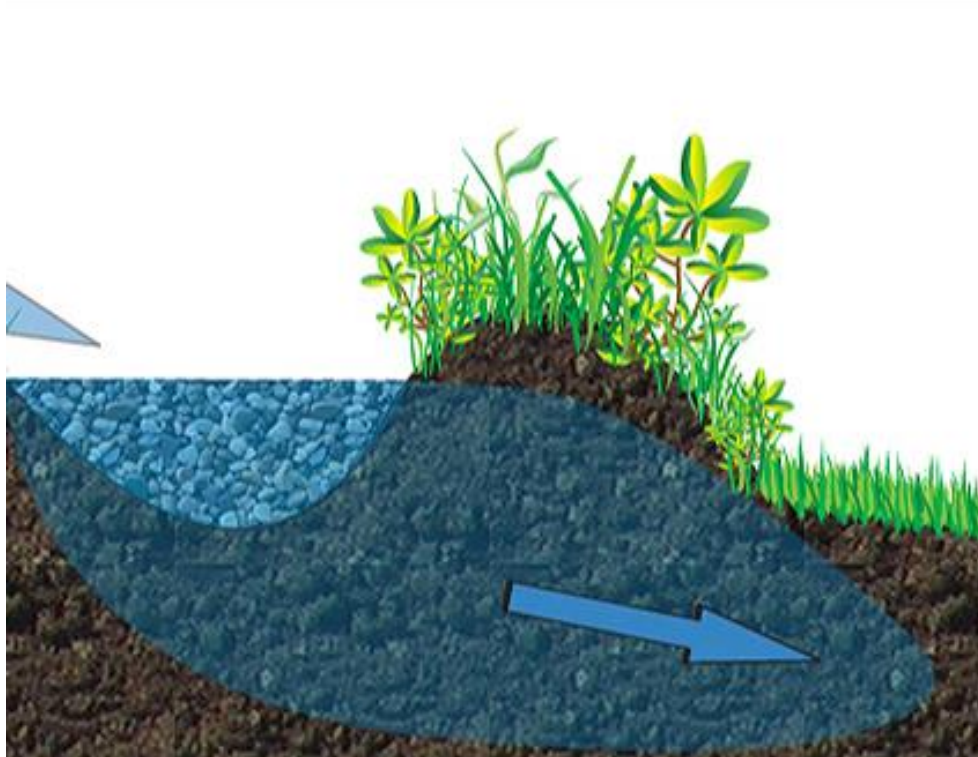


Understanding watershed



- Contour Line – imaginary line that joins points of same height
- Horizontal Interval
- Vertical Interval
- $\text{Slope} = \frac{\text{vertical interval}}{\text{horizontal interval}} \times 100$

Principles of watershed Development



Slowing the surface Runoff

Watershed Management

Watershed management is a tool to assist land and water use decision makers

- There are four phases:
- 1) issue identification and data gathering;
- 2) analysis and planning;
- 3) implementation; and,
- 4) monitoring.
- NOTE: It should be emphasized that monitoring does not conclude the process, but rather initiates the beginning of understanding of the subwatershed, for which the plans should be updated over time.

THE NEED/IMPORTANCE FOR WATERSHED MANAGEMENT

- **Watershed management is necessary for the sustainable protection of natural resources and environmental health.**
- Watershed management, which recognizes the hydrologic (water) cycle as the pathway that integrates
- **physical,**
- **chemical and**
- **biological processes,** is an important approach to achieving the goal of a sustainable environment, and is the tool to implement an ecosystem-based management strategy.

Objectives of watershed

OBJECTIVES OF WATERSHED MANAGEMENT

- The overall objectives for the process are divided into two types: Planning Objectives and Implementation Objectives.
- **□□Planning Objectives** are distinct, specific, measurable statements that reflect and define each goal. They are designed to direct, track and measure progress over the next several years of preparing the Watershed Plan, but they do not necessarily guide implementing “on the ground” actions in the watershed. By definition, Planning Objectives will be one or several Implementation Objectives.
- **□□Implementation Objectives** are also distinct, measurable statements that reflect the goals, but are meant to guide ongoing implementation actions in the watershed. The Implementation Objectives will become part of the Watershed Plan and can be used to measure long-term progress.

Objectives of WSM

- *1) Ensure that the Watershed Management Initiative is a broad, consensus-based process.*
- *2. Ensure that necessary resources are provided for the implementation of the Watershed Management Initiative.*
- *3. Simplify compliance with regulatory requirements without compromising environmental protection.*
- *4. Balance the objectives of water supply management, habitat protection, flood management and land use to protect and enhance water quality.*
- *5. Protect and/or restore streams, reservoirs, wetlands and the bay for the benefit of fish, wildlife and human uses.*
- *6. Develop an implementable Watershed Management Plan that incorporates science and is continuously improved.*

Why Watershed approach

Why Watershed Approach?

- When **detrimental** activities like clear-cut deforestation occur, negative impacts are carried downstream in the form of eroded sediments or flooding.
- **Poor** agricultural land management activities like excess fertilizer application convey negative impacts to downstream areas in the form of **eutrophication** and possible fish kills.

Why Watershed Approach?

- Watersheds are among the most **basic** units of natural organization in landscapes.
- The limits of watersheds are defined by **topography** and the resulting runoff patterns of rainwater.
- The entire area of any watershed is therefore physically **linked** by the flow of rainwater runoff.
- Consequently, processes or **activities** occurring in one portion of the watershed will **directly** impact downstream areas (land or water).

Watershed Management Strategies and Response to problem

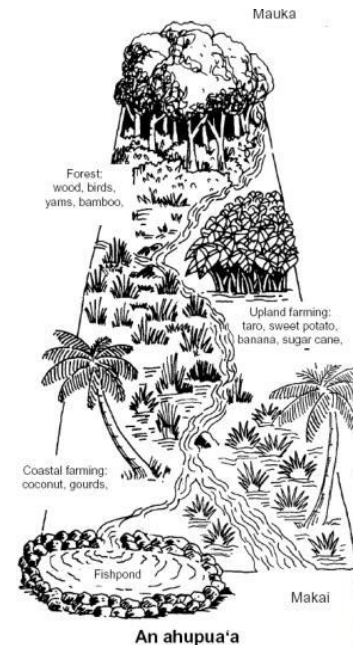
Watershed management involves:

- Nonstructural (vegetation management) practices
- Structural (engineering) practices

Tools of WS management

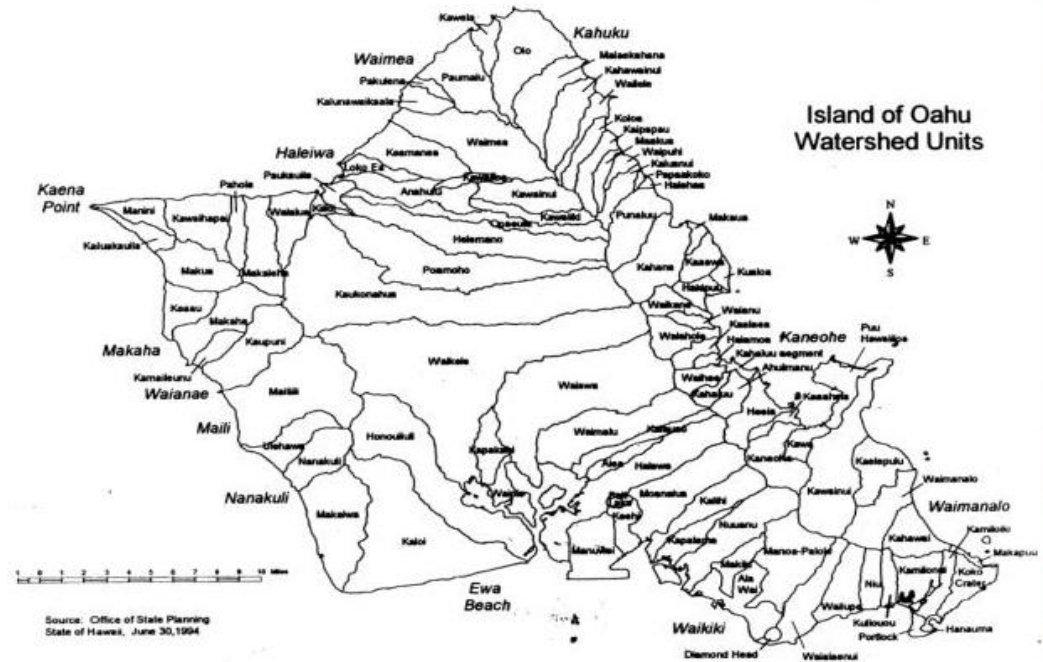
- Soil conservation practices
- Land use planning
- Building dams
- Agroforestry practices
- Protected reserves
- Timber harvesting
- Construction regulation

The common denominator or integrating factor is water

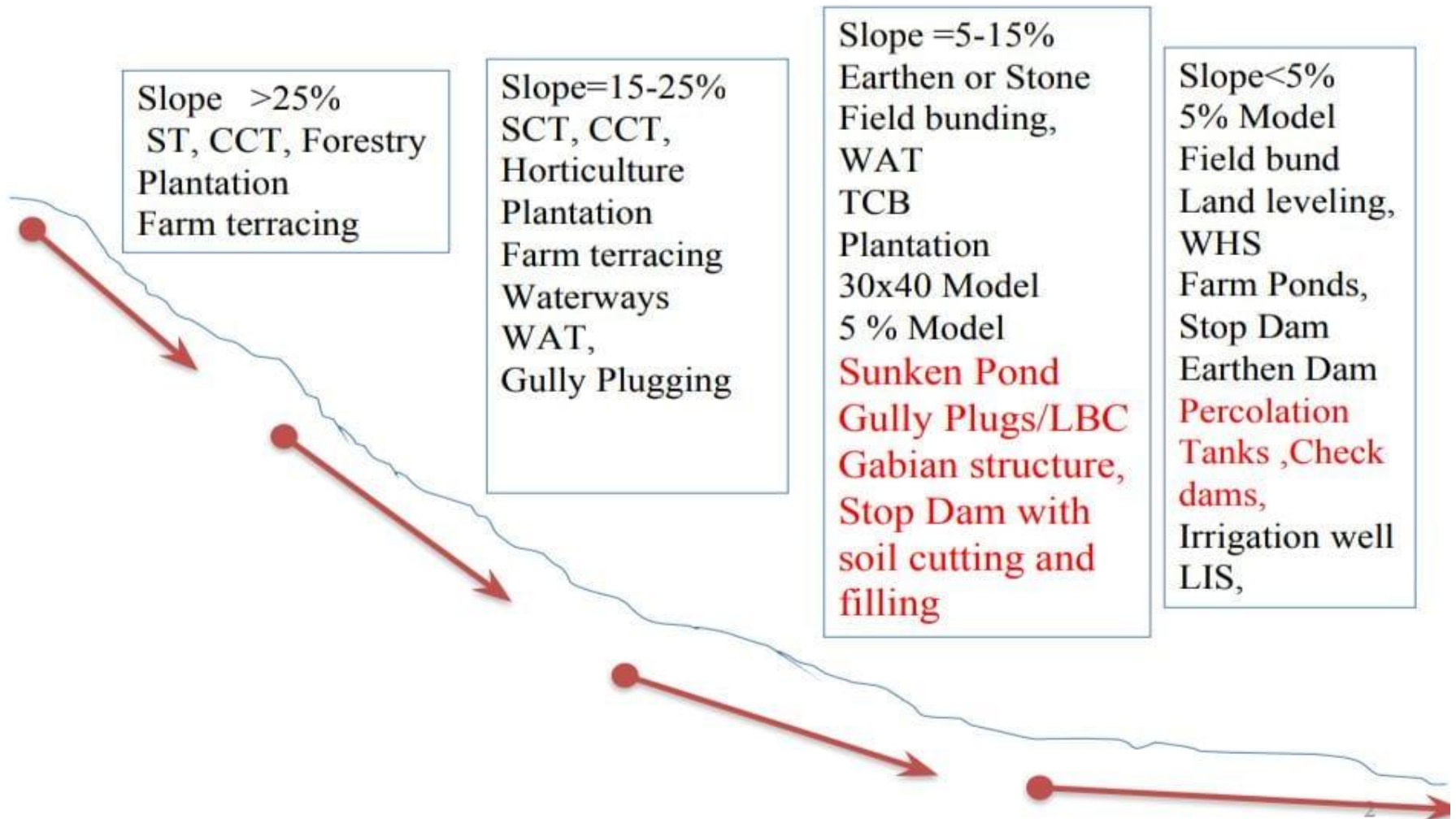


Understanding terminology of watershed

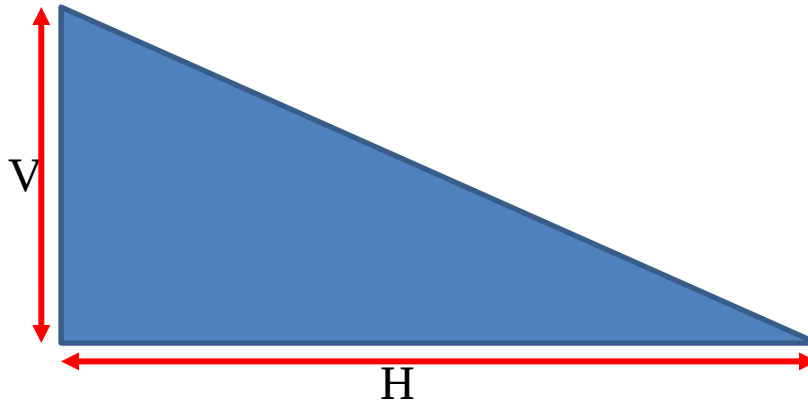
- Ridge line (RL)- line joining top of watershed from where slope starts
- Catchment area (CA)- area from where river catches water
- Ridge area (RA) Area from ridge to where the plain starts
- Drainage line (DL) main channels of rain water forms.



Watershed model according to its slope



How to Calculate Slope



$$\text{Slope (\%)} = \frac{\text{Vertical Distance (V)}}{\text{Horizontal Distance (H)}} \times 100$$

Area Treatment

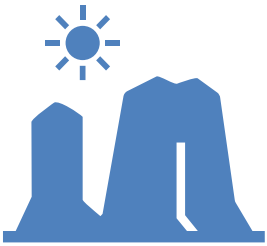
Continuous contour trench



- Slope 10-25%
- Size 16' 4" X 1'8" X 1'8"
- Barm Space:- 20 CM
- Valume of earthwork
- 54 cft or 1 Chowka
- (Hard Soil)

Area Treatment

(Soil moisture conservation and vegetation development)



Soil moisture conservation

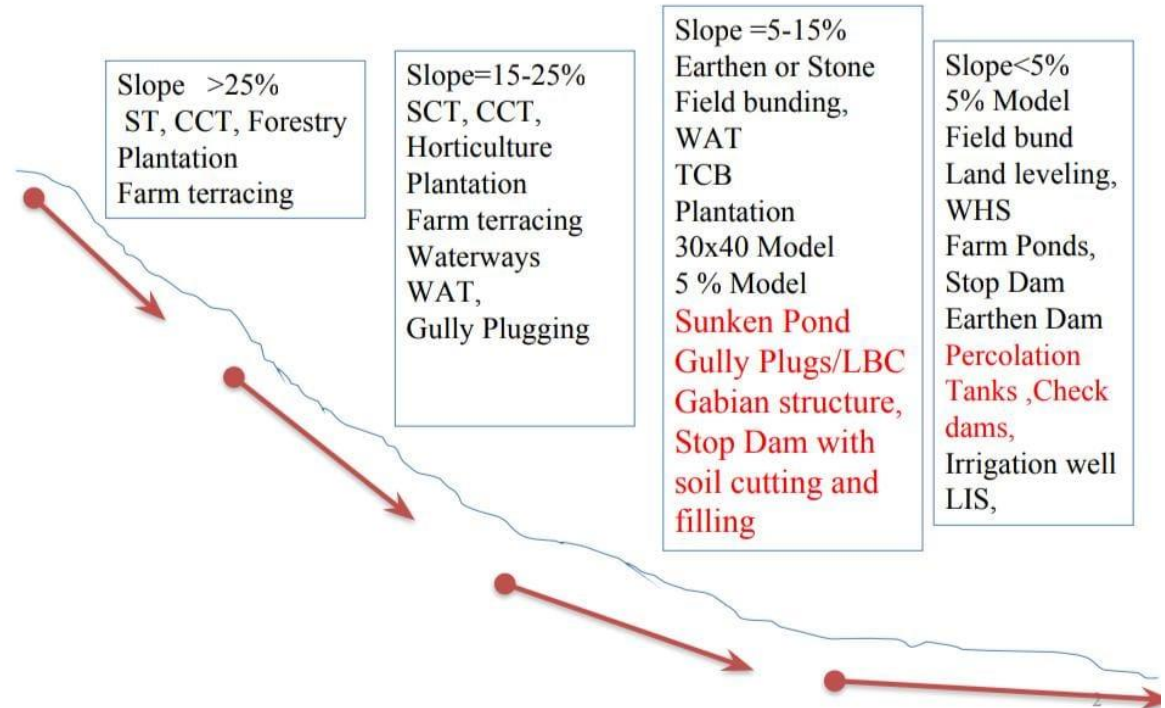
Continuous contour trenches (CCT)
Stray guard contour trenches (SCT)
Contour bunding/ Field bunding



Vegetation measures

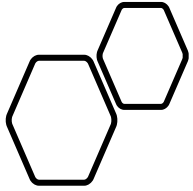
Agro Horticulture
Agro forestry
Fodder development
Community forest development

Area Treatment (Soil moisture conservation and vegetation development)



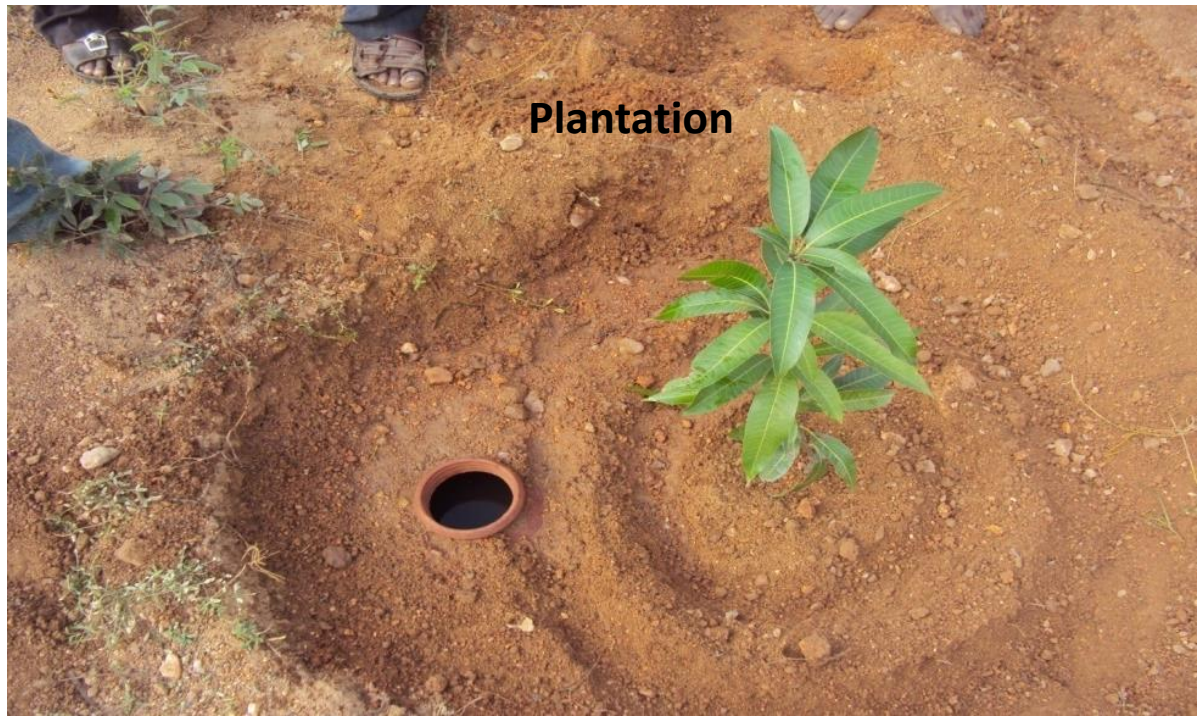
Area Treatment





Field bunding

Field Bund/ NFB in
cultivable medium and
up land



Check dam



Staggered contour trench



- Slope 10-20%
- Dimension
- 9'10" X 1'8" X 1'8"
- Barm Space:- 20 CM
- Cost:- 65500/Acre
- Man Days :- 372
- Labour :- 94.37%
- Material :- 5.63%

5% model

(Local Names:- Happa, dobha, Bawli)



- Medium upland
- $\frac{1}{5}$ of length
- $\frac{1}{4}$ of width
- 5-7' deep
- December to June

Farm Pond (50' X 50' X 10')



- Site :- Medium Low Land
- Size:- 50' X 50' X 10'
- Slope :- 2 : 2
- Estimated Cost
- 59,538/-
- Man Days :- 349
- Labour :- 94.60%
- Material :- 5.40%

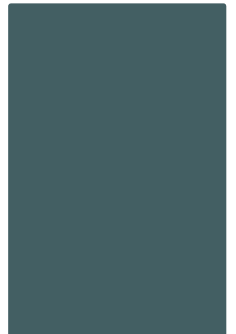
30 X 40 Model



- Slope : 3 - 8%
- 30' along the slope
- 40' across the slope
- Pit at lowest point
- 7' X 7' X 3' top
- 5' X 5' X 3' bottom
- Bund 1*2
- Cost:- 35965/ha for 90 Piece
- Man Days :- 208
- Labour :- 94.67%
- Material :- 5.33%



30 X 40
Model
with
mango
plantation



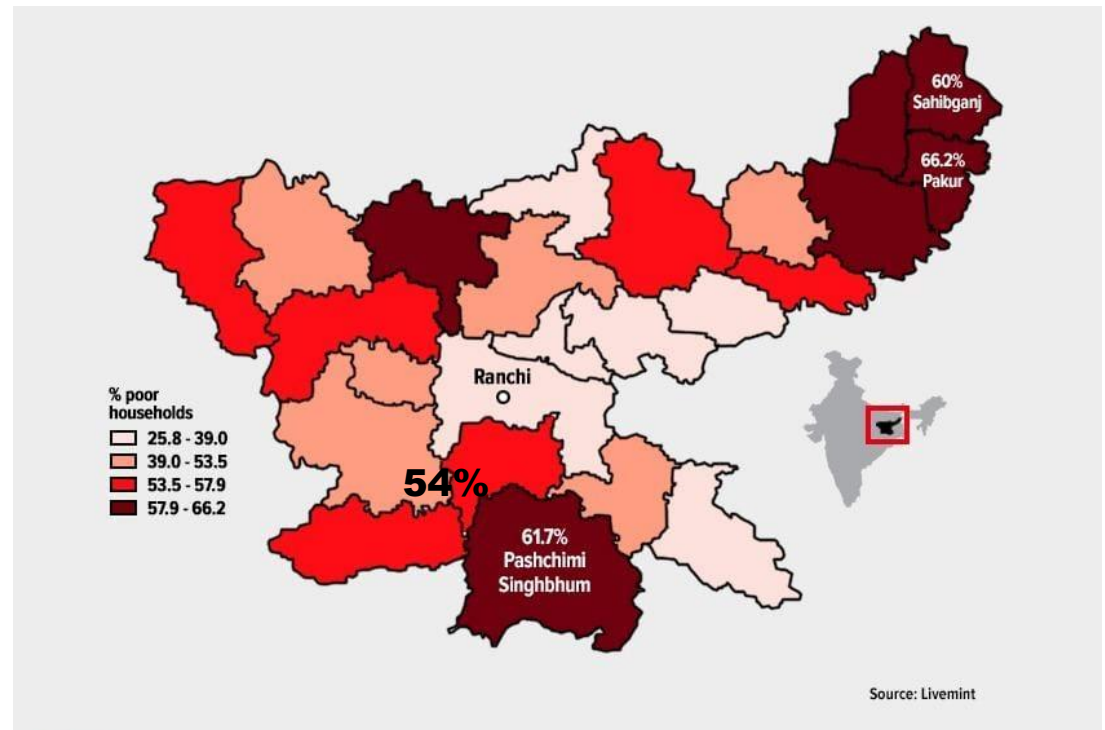
Impact of watershed



PROJECT IMPLEMENTATION COST

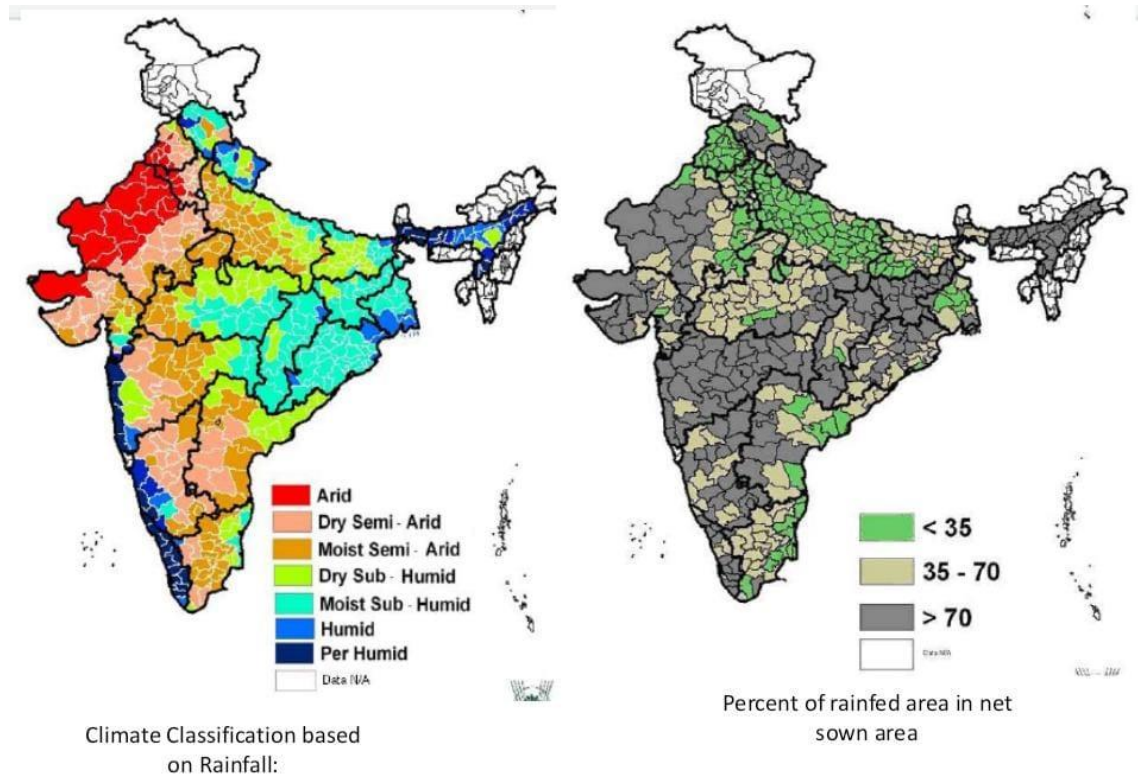
- **Project Implementation**
- project implementation Agency –WASSAN
- Initiation of capacity building Phase -2021 January
- Initiation of final implementation phase -2021 after survey of the village
- Completion of watershed project -2024
- Total budgetary outlay under MNREGA
-
- **225 MNREGA PAYMENTS PER DAY X 200 MNREGA HOLDERS OF JOB CARD**
- **225 X 200 = 57375 IN A DAY**
- **45000 X 30 =1,350,000**
- **1,350.000** average amount

Poverty map of the Jharkhand



Comparing poverty of both the district West Singhbhum and East Singhbhum
West Singhbhum is more poverty than east Singhbhum

Poverty classification based on Rainfall and the percentage of Rainfed area in net sown area



MAJOR RIVER OF WEST SINGHBHUM AND EAST SINGHBHUM DISTRICTS

EAST SINGHBHUM

River

This are the major river

=

1. Subernarekha River
2. Kharka

SOIL TYPES

Five types of soil are found in the districts;-

1. Red gravelly soil
2. Red sandy soil
3. Red loamy soil
4. Red and yellow soil
5. Lateritic soil

WEST SINGHBHUM

River

1. Koel River
2. Kaju River

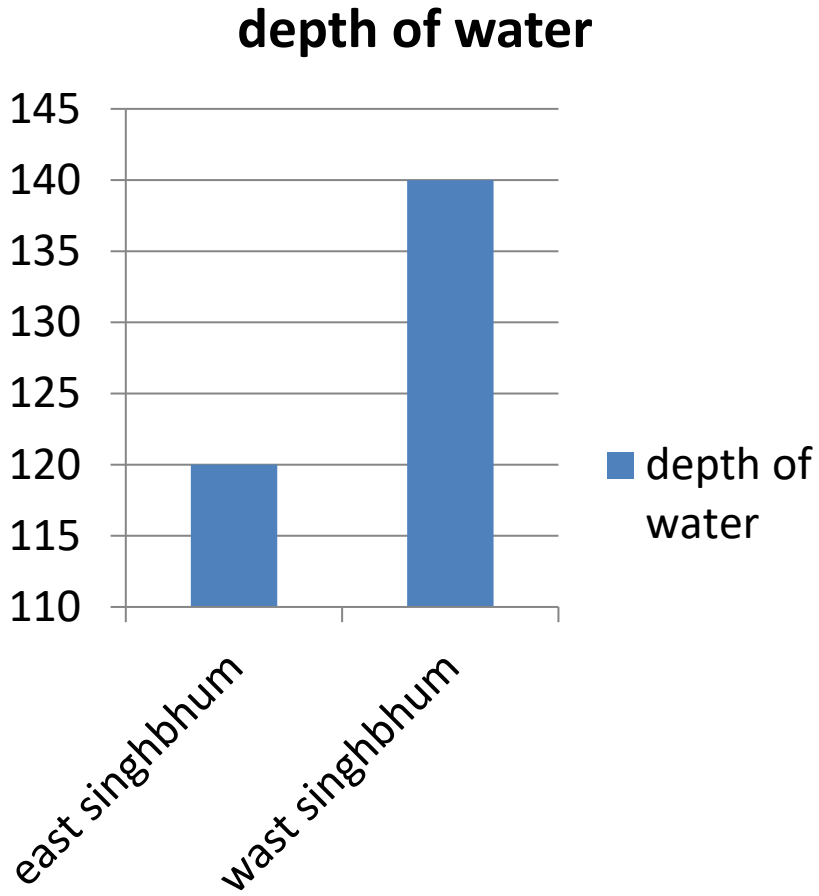
SOIL TYPES

Five types of soil are found in the districts;-

1. Rocky soil
2. Red soil
3. Black soil
4. Loamy soil

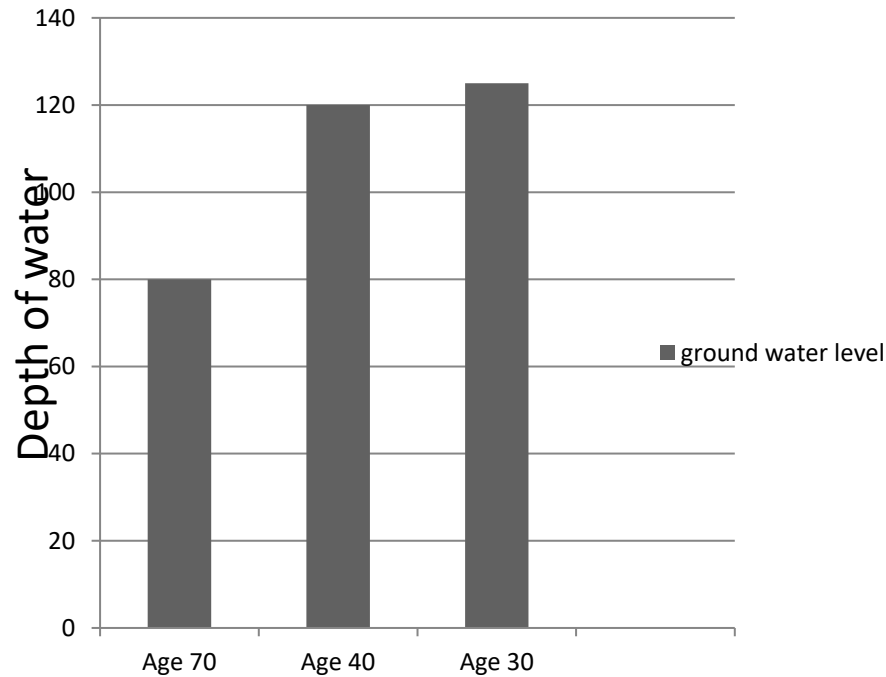
The soil is the important factor for the watershed because of water holding capacity of soil .the soil found in west singhbhum district are loamy is poor fertility .

Depth of water



The depth of water in during summer season 160 feet in East Singhbhum region and the west Singhbhum is 160 feet

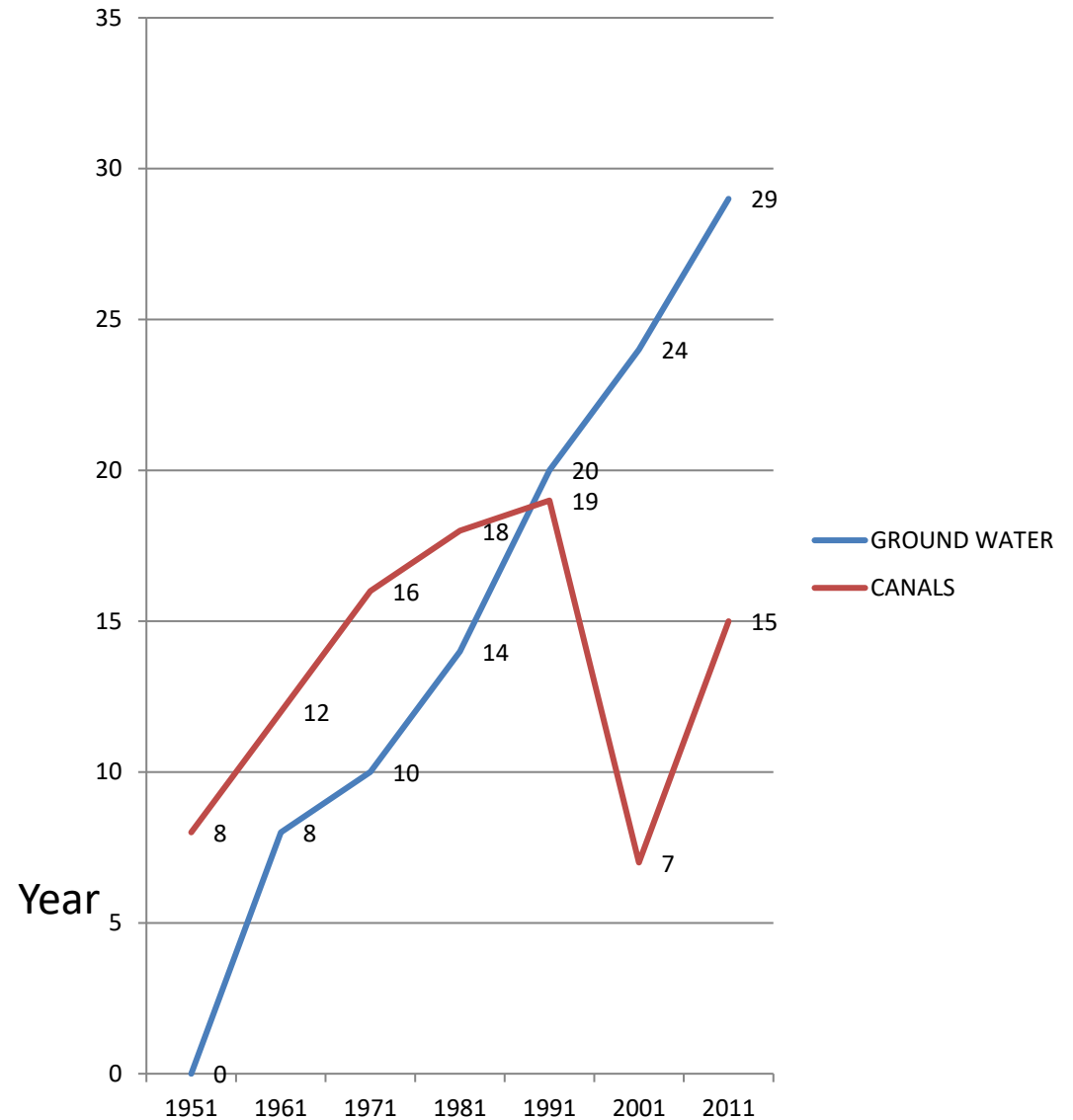
Different age's group people answer about the level of Ground water level to find out the level of water how much its decreases



When we asked form the different age group of the people to know the level of ground water how much decrease form last 70 year we found that the level of ground water decrease 80 feet to 120 feet in last 15 years.

The graph shows increase in proportion of ground water usage to total net irrigated area between 1951 to 2011

- Million Hectares



Glimpse of achievements



s.no	particular	Pre - treatment	Post treatment
1	SHG promotion	0	45 (140 members)
●	Total created distributed	0	19.79
2	Crop cultivation		
●	Net shown area	228.50 ha.	625.25
●	Area under double cropping	30 ha.	309.ha
●	Cropping intensity	110 %	160%
3	Physical infrastructure		
●	Water harvesting tanks	0	0
●	No of ponds	4	4
●	Land husbandry	0	177.19ha.
●	Plantation and pasture dev.	0	10hac.

Conclusive learnings

- Watershed is the approach for sustainable livelihood for the farmers
- Watershed will help in improving ground water level and drinking water problem along with better irrigation facilities
- Mobilising & organising community for collective action
 - Regenerating natural resources
 - Sustainable & effective use of the natural resources
 - Improving livelihoods; of the poor in particular
- Focus on Biomass and biology
- Increase the participation of woman for the development



Nursery Raising by SHGs



Crop diversification- Commercial crops (chillies, brinjal, etc.)



Increase in Ground Water thr' watershed activities





DURING MY 40 WORKING DAYS INTERNSHIP WITH WASSAN , I HAVE ATTEMPTED TO ABSORB AS MUCH OF LEARNING AS POSSIBLE. SOME OF THE LEARNING OBJECTIVES THAT I RELISHED WITH IN THIS PERIOD ARE ;



I VISITED TO FIELD OF THE TUTLIDIH VILLAGE TO UNDERSTAND THE PROBLEM OF THE WATER SCARCITY



UNDERSTANDING THE WORKING STRATEGY OF A NON-GOVERNMENTAL ORGANIZATION.



UNDERSTANDING AND REALIZATION OF WORK ETHICS IN A PROFESSIONAL ENVIRONMENT.



ANALYSIS OF FIELD VISITS AND PROPOSAL OF ELEMENTS TO STRENGTHEN THE WORK STRATEGY.



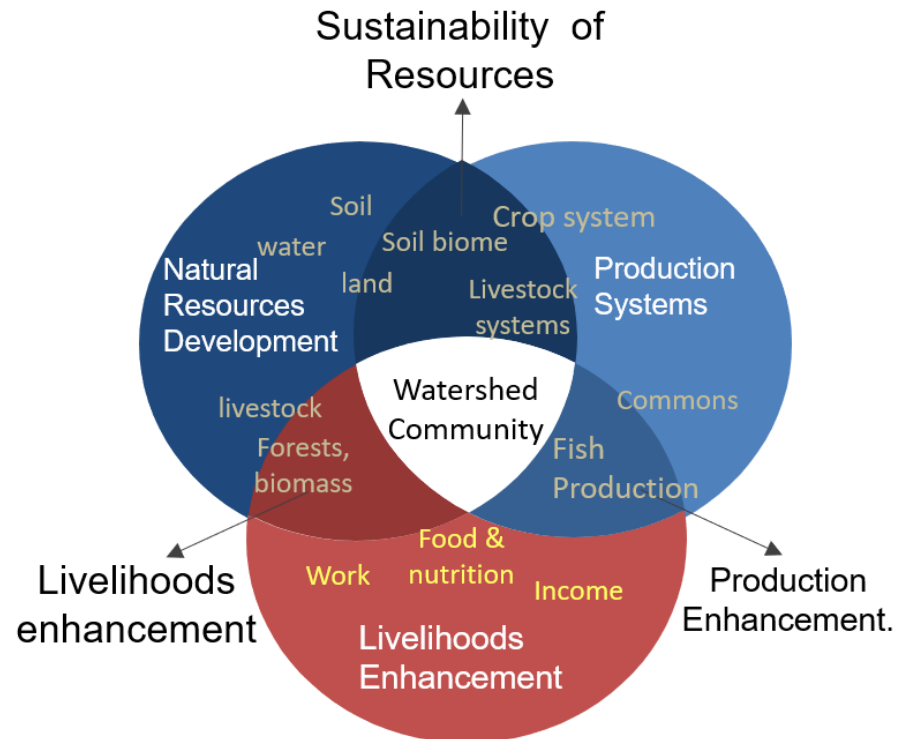
ADAPTATION TO A COMPLETELY NEW SOCIAL INTERFACE.



AT LAST HOW TO IMPLEMENT THE WATERSHED PROGRAMME IN AREA

Suggestions

- Watershed approach should be adopted and encouraged to the community (Area approach)
- Organise the community for collective action
- Make them understand the resources by departing training and induction program
- Plan for the Regeneration of the area (regeneration of NR, Production and Livelihoods) should be made for better result
- Community participation approach should be adopted right from planning to implementation of the water shed project



Sustainability of natural resources could only be possible through watershed management.

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- www.wassan.org/wassan_organisation
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