



Indira Gandhi National Open University
School of Agriculture

BNRP-108
Project Formulation



Project Manual

“शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्र की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्गागत विषमताओं को दूर करते हुए मनुष्य को इन सब से ऊपर उठाती है।”

— इन्दिरा गाँधी

"Education is a liberating force, and in our age it is also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances."

— Indira Gandhi

Project Manual

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Guidelines for Project Formulation

The project course BNRP-108 is an integrated and the most important part of the Diploma in Watershed Management (DWM) programme. The project formulation aims at sensitizing and providing clear insight into nitty-gritty of Detailed Project Report for Integrated Watershed Management Programme to the learners. The project will also provide an opportunity to critically look into a number of specific issues/problems likely to be encountered and come out with a framework of feasible solutions.

Objectives

After completing the project formulation, you should be able to:

- explain the importance of detailed project report of watershed projects; and
- develop detailed project report by outlining specific problems and seeking feasible solutions.

This course on project formulation will be divided into two phases with a total duration of 15 days:

Phase-1

You will be exposed to various aspects of project formulation and Detailed Project Report (DPR) for undertaking watershed development project for a period of five days. It will deal with theoretical aspects of baseline survey on various biophysical & socio-economic aspects and natural resource base including land, topographical and hydrological details. It will also brief you about various developmental activities to be carried out including selection of beneficiaries and work sites, design and costing of all works taking into account the interest of women and weaker section; workout detailed resource use agreement which include surface water, ground water and common /forest land among user groups; details of expected/proposed user groups/self-help groups, proposed physical and financial interventions institutional mechanisms and implementation of the plan based on participatory decision making and equity, expected outcomes and benefits particularly with respect to livelihood for different segments of the society.

Each learner will be required to visit a particular watershed (**new as well as operational**) for a period of 10 days during which he/she will have to collect information on any one aspect of detail project report listed below:

Activity	Information to be collected
1. Demographic features	Population, socio-economic status, livestock status, other livelihoods migration, community based organizations, infrastructure and communication facilities.
2. Land and crop details	Land use pattern, soil resources base, Crops, Cropping Pattern, Cropping Intensity and Agricultural Mechanization
3. Agro-climatic conditions and water resources	Rainfall and agro-climatic parameters, surface and ground water resources, Irrigation facilities, sources of drinking water and water quality.
4. Details of livelihood of poor and Existing assets	Different livelihood activities, number of households involved, pre-project average income per household.

Based on the information collected, he/she should prepare a detail report and submit the same to the programme study centre in-charge. This activity needs to be completed in 10 days duration after completing the phase 1. Each detail report submitted by the student will be evaluated by the approved evaluators at the concerned study centre. In addition, each learner will undergo viva voce examination at the study centre. In-charge, programme study centre will arrange for evaluation of the report and viva voce examination at the study centre through the approved evaluators comprising one internal and one external examiner.

The weightage for project report and viva voce examination will be 70% and 30%, respectively.

PHASE-1



You will learn about various aspects of Detailed Project Report (DPR) given below:

1. Pre-requisites for DPR preparation.
 - 1.1 Need assessment
 - 1.2 Benchmark or baseline survey,
 - 1.3 Topographic & hydrological details.
 - 1.4 Land use patterns & cropping systems
 - 1.5 Livelihood patterns and production systems
 - 1.6 Different developmental programs (previous and running).
 - 1.7 Socio-economic profile
2. **Watershed Activities:** Based on the above information, activities to be undertaken will be identified and prioritized for preparing plans under IWMP
 - 2.1 Planning
 - 2.2 Institutional Framework
 - 2.3 Physical Activities under IWMP
 - 2.3.1 Entry Point Activities (EPA)
 - 2.3.2 IWMP development works
 - 2.3.3 Capacity building
3. Budgeting
4. Expected outcomes
5. Quality and sustainability
6. Maps (using GIS and Remote Sensing)

DETAIL PROJECT REPORT (DPR)

1. INTRODUCTION

Integrated watershed management is a holistic approach towards overall development of its natural resource base including flora, fauna and human beings. Prior to planning any activities on watershed level, a current status or baseline situation needs to be understood and analyzed. Therefore, collection of baseline data on various bio-physical and socio-economic aspects of a watershed is an essential part for analyzing the initial conditions, assessing the development needs and planning for the activities including budget requirements. This necessitates the availability of timely, fairly accurate and detailed information on watershed resources, viz; natural, human, livestock, institutional, infrastructural etc. before undertaking the watershed development programs.

The data about any geographical area is either in map form or in attributes (tabular) form. With the advent of remote sensing (RS) and geographic information system (GIS), the collection, storage, manipulation and retrieval of spatial (map based) database has become easier with required level of precision as compared to the conventional techniques of surveying and mapping. The remote sensing is proving to be an economic and real time data collection tool for surface earth features of a watershed; whereas GIS is being recognized as a potential tool in watershed data analysis, planning and monitoring. Just after the secondary information is collected from the different sources; it is necessary to create an integrated data repository for micro-watersheds of the project watershed area.

In the early stages of watershed development projects, the activity focus of the development agencies was motivated with their expertise and prior experiences in the similar geographical areas. Therefore, the guidelines on watershed development projects have been changing from time to time incorporating learning from the implementation of watershed projects funded by Government of India as well as several financial institutions, bilateral projects and Non-Governmental Organizations (NGOs). The common guidelines for watershed development projects-2008 (Revised Edition-2011) are issued by the Government of India for implementation of watershed projects. These are applicable to all watershed development projects in all departments and ministries of government concerned.

As per the new guidelines; it is necessary to prepare proper Detailed Project Report (DPR) encompassing important information on previous and ongoing development works, scope of further development, planned activities along with expected returns and required budget etc. for each of the mega watershed project. The DPR is most important document for the administration, funding agencies and implementing partners. The cost norm for IWMP is Rs. 15,000/- per hectare for hilly & difficult area, Rs. 12,000/- per hectare for other areas and up to Rs.15,000 per hectare for IWMP projects in Integrated Action Plan (IAP) Districts. The funding pattern under the scheme is in the ratio of 90:10 between the Centre and States. The projects under IWMP undertake a cluster of micro-watersheds of area about 5,000 hectare in rainfed/ degraded areas having no assured irrigation.

This manual aims at providing step by step guidance in preparation of the Detailed Project Report. The efforts have been made to elaborate the different steps and stages involved in DPR preparation.

Prior to DPR preparation, each of the personals involved in DPR preparation should be well versed with watershed based development approach, collection of baseline information, role and use of different tool and techniques (GIS and Remote Sensing and other software) in DPR preparation and common guidelines on Watershed Development projects issued by Government of India. In each of data collection teams, there should be at least one technical person with thorough subject knowledge and relevant experience of 4-5 years.

Prior to taking up DPR preparation, the necessary institutional arrangement should be in place and secondary data need to be procured as given below:

A) Institutional arrangements:

- Identification and Positioning of Project Implementing Agency (PIA)
- Identification of User groups & Self Help Group (SHGs)
- Formation of Watershed Committee
- Selection of Watershed Secretary
- Organizing Orientation programme to peoples' representatives concerned
- Organizing Orientation programme to PIA, Watershed Committee (WC), TA
- Organizing Awareness campaigns by way of Kalajatas, Processions, pamphlets, wall writings, posters, street meetings, group meetings, SHG/VA meetings, etc., & exposure visits to key stakeholders
- Convergence meeting with line departments.

B) Data collection

- Cadastral maps of all micro-watersheds
- Division of each watershed to micro-watersheds
- Division of each micro-watershed into planning blocks of approximately 100 hectares (Similar to planning blocks under Project Mode of Planning)

2. Preparation of Detailed Project Report (DPR)

DPR preparation being a vital activity, need to be carefully and systematically carried out with the involvement of Watershed Development Team (WDT), Community Based Organizations (OBOs) and the beneficiaries of the project area. The secondary information and the technical inputs (resource maps and cadastral maps etc.) should be available and reviewed at local level. The information and data collection for DPR, must be well organized through structured formats and documents systematically arranged for easy traceability and retrieval of data at any point of time.

The precise information collections, using effective PRA tools and comprehensive beneficiary level database (captured by baseline survey questionnaire) separately for private land and community land development will be the key to identify the problems. The attribute information gathered from different location will be linked with the cadastral database to depict in map form for easy spatial analysis and finally prioritizing the activities to prepare the action plan.

It is mandatory to prepare and submit a Detailed Project Report for each of the integrated watershed development project. The DPR developed is used for administrative and financial approval of the planned activities and execution of the proposed activities during the project implementation. DPR is separately prepared for each micro-watershed and for every 500 ha area within the micro-watershed in an IWMP watershed. For instance, if a watershed is having an area of about 6,000 hectare with 12 micro-watersheds; 12 separate DPRs need to be prepared namely DPR_1 , DPR_2 , DPR_3 DPR_{12} and later on consolidated to a single DPR for the IWMP watershed.

2.1 Objectives

- Integrated planning for watershed development.
- Convergence of previous and running schemes and programs
- Implementation of integrated watershed development program to
 - Enhance productivity
 - Sustainability of natural resources
 - Improve livelihood and socio-economic status of the beneficiaries

Finally, the information in a DPR will be compiled in the following format:

2.2 Contents

Executive Summary	Brief about the watershed profile, problem analysis of different areas, action plan for relevant activities, budget required and the expected impact of the project interventions.
i) Introduction	Location of Watershed (Village, Mandal, Block, District, Distance from District, long, latitudes, elevation (above mean sea land etc.) Watershed specific problems and challenges along with need for a project. Brief on historical importance of watershed village, Ethnographic features, living pattern, festivals etc.).
ii) Basic information	About the watershed including topography and natural resource base.
iii) Problem Analysis	Identification of major problems requiring interventions to enhance livelihood potential as well as conservation and regeneration of resources.
iv) Planning process	Detailed planning, prioritization of activities, negotiation with different departments.
v) Perspective Plan	Overall planed activities including budget.
vi) Institutional Mechanism	Details of institutional arrangements at different levels
vii) Expected outcomes	List of expected outcomes
viii) Exit Protocol	Road map/ action plan for withdrawl of the project
ix) Annexure :	Structure Formats/Questionnaire Maps prepared

2.3 Steps for preparation of DPR for a micro-watershed under a watershed project area

Step-1: Collection of Baseline information

Step-1.1: Procurement and review of secondary data for its relevancy and precision

Step-1.2: Meeting with stakeholders (PIA, WDT, CBOs and the beneficiaries)

Step-1.3: PRA exercises for Social Mapping and Resource Mapping

Step-1.4: Socio-economic survey (for Baseline status of individual beneficiaries/ households and for village/micro-watershed as a whole)

Step-2: Problem Analysis and Need Assessment

Step-3: Planning for the project activities

Step-3.1: Participatory Net Planning

Step-3.2: Focus group discussions on planning the activities for productivity and income enhancement

Step-3.3: Identification of Entry Point Activities

Step-3.4: Phasing of Activities (annual activity scheduling)

Step-3.5: Visualizing the expected returns and outcomes from project activities.

Step-3.6: Preparing and finalizing the plan for institutional and capacity building

Step-4: Meetings and discussion with the line departments and implementing agencies for convergence planning.

Step-5: Budgeting for the proposed activities

Step-6: Exit Protocols/ withdrawal strategies

Step-7: Data/ information compilation, consolidation and Documentation in the DPR format to produce a Draft DPR.

Step-8: Gram Sabha for discussion on draft DPR and its approval after necessary changes as per the suggestions of Gram Sabha to finalize the DPR.

Step-1: Collection of Baseline information

The baseline information or benchmark data are important for:

- Proper planning and execution of watershed management programs.
- Quantification of development parameter or indicators
- Comparing, monitoring and evaluating the impacts of different project interventions
- Mid-term corrections in the watershed management program/ activities, to achieve the desired result

Step-1.1: Procurement and review of secondary data for its relevancy and precision

The secondary information is collected from the government and non-government functionaries, concerned line departments viz., Block Development Officials, Agricultural Officers, Village Level Workers, (VLW) panchayat etc. The available data and records are studied and verified at the village level with Gram Panchayat. Attention should be paid that the secondary information and data is simultaneously collected for all the micro watersheds falling under a Watershed. Topographical (Topographical sheets from Survey of India) and hydrological information (Rainfall data, water bodies, groundwater data etc. at block level and district level) will also be collected.

Step-1.2: Meeting with stakeholders (PIA, WDT, CBOs and the beneficiaries)

Conducting village level meetings:

A meeting should be scheduled with the villagers for appraising the objectives of the integrated watershed development program and involving them in the process. All concerned including Project Implementation Agency (PIA), Watershed Committee (WC), Gram Panchayat (GP), User Groups (UGs), Village Level Workers (VLWs) should be well informed about the meeting date, time and venue.

During initiation of the meeting; all the stakeholders and the beneficiaries shall be briefed about the objective of DPR preparation and their role in it. The common resources and the common problems in the area shall also be discussed. PRA (social mapping & resource mapping) and the village level data collection format is used to collection the baseline information on common resources and social constraints. The details about PRA are annexed at annexure A2.

Step-1.3: PRA exercises for Social Mapping and Resource Mapping Participatory Rural Appraisal (PRA)

Participatory Rural Appraisal (PRA) is an important tool for taking timely appropriate decisions on developmental activities by involving the primary stakeholders and developmental institutions.

PRA is an approach that decentralizes decision making and create a sense of ownership among the beneficiaries (primary stakeholders). PRA provides opportunities for analyzing the resource base, problems and developmental opportunities by incorporating rich experience of primary stakeholders and expertise of technical experts (service providers) in joint meetings.

PRA in brief

- It is **Participatory** as beneficiaries are involved in the process;
- It is **Rural** as, the methods were developed and applied for the rural/village situations.
- It is **Appraisal** as the experts from development institutions get to know concerned issues from the perspective of the stakeholders;

The PRA exercises are used to understand the following:

- Problem analysis;
- Generating options;
- Decision making process and planning;
- Implementation; and
- Monitoring and Evaluation.

The advantages of PRA are:

- Identification of priorities for target group;
- Decentralization of responsibilities;
- Motivation and mobilization of beneficiaries;
- Develop better linkages between communities and development institutions;
- Use local knowledge and understanding;
- Use of local resources; and
- More sustainable development.

The Participatory rural appraisal is already discussed in detail in course 7 (BNRI-107) of Block 3 and will be used for social and resource mapping.

- a. **Social mapping:** It is done by the identified active volunteers or villagers on a plain ground, depicting the social parameters e.g. habitation, infrastructures facilities, communication, different government, public and private services etc. The community

members help the volunteers in showing the different social aspects correctly with different colours and patterns. Social map drawn on the ground is copied on chart paper (or snap may be taken) for further use (DPR preparation).

- b. **Resource mapping:** This is prepared by the volunteers on ground representing physical resources e.g. land features including vegetation types, water bodies, drainage lines, crop and forested area etc. like social map. It is also copied/captured on a chart after completion. The information required for DPR preparation is presented. The maps are enlarged to the required scale for further use in activity planning and scheduling during DPR preparation.

Step-1.4: Socio-economic survey (for baseline status of individual beneficiaries/ households and for village/micro-watershed as a whole)

Preparation of data collection formats: A structured questionnaire (or data collection format) is prepared to capture the present situation of development parameters (or indicators) in the watershed. The questionnaires formed are first pilot tested for information collection from the stakeholders (beneficiaries). Based on feedback for difficulties in information gathering, data collection format is further modified as per suitability. The final data collection formats focus both individual and common resources of the village and the watershed (sample format annexed as **Annexure-A1**).

Conducting survey: The village level volunteers (enumerators) will be identified to collect Socio-economic information from the Households (HH) through the structured questionnaire and the format prepared (Annexure-1). The households/beneficiaries to be interviewed should be intimated in advance to ensure their availability and whole hearted support during survey. The enumerators need to be supervised for proper data collection and formats should be scrutinized on the same day for any erroneous or redundant information. All cleaned information/data should be processed and computerized simultaneously. This exercise can be concurrently taken up in all the micro-watersheds/villages.

Step-2: Problem Analysis and Need Assessment

The most vital step in preparation of DPR for integrated watershed development and management programs is to identify and analyze the problem and improvement areas. The problems are identified based on the secondary and primary information available from different sources and interaction with primary stakeholders of the watershed.

The following major parameters form the basis of identification and prioritization of watershed problems and solutions:

- Poverty Index and population of underprivileged,
- Percentage of landless, marginal, small, medium and large farmers,

- Land use and per cent of the degraded land,
- Surface and groundwater status,
- Sources of drinking water and its quality,
- Irrigation status and rainfed area,
- Crop productivity and nutrient status of cultivable soils,
- Status on livestock and allied income generating occupations,
- Development activities in the neighboring watershed,
- Cluster approach for plain or hilly terrain.

Based on these parameters, a ranking is given to find out the acute problem areas to prioritize the watershed activities.

Step-3: Planning for the project activities

Each watershed has unique characteristics and problems. Its treatment and management would therefore require careful consideration of various site specific factors like topography, nature and depth of soil cover, type of rocks, water absorbing capacity of land, rainfall intensity, land use etc. All works must be planned in a location-specific manner, taking into account the above factors along with local demands and socio-economic conditions of the watershed.

The major activities of the Watershed Development Projects are planned and sequenced into (I) Preparatory, (ii) Works and (iii) Consolidation and withdrawal Phase. In view of the expanded scope and expectations under the watershed development programme, the project duration could be in the range of four to seven years depending upon the activities and Ministries/Departments. The DPR should mention the detailed justification for the proposed project duration. The planning is done using the following tools and techniques:

Step-3.1: Participatory Net Planning

Participatory Net Planning (PNP) is a planning, mobilization, project formulation, training and monitoring tool that necessarily involve stakeholder through the process. The tool mainly emphasize on resource management, conservation, productivity enhancement and sustainable management in the watershed.

A meeting of beneficiaries and activity planners is scheduled to conduct Participatory Net Planning. The planning team and the beneficiaries of block collect information as per the formats (Annexure-2). The activity planned is linked with the geographical locations (with help of GPS). The narrative description along with site photographs is collected for documenting the proposed intervention.

Step-3.2: Conducting Focus group discussions on planning the activities for productivity and income enhancement

The Focus Group Discussions are helpful in planning on various livelihood activities like Agriculture, Horticulture, Animal Husbandry, Enterprise Development etc. The focus group discussions should be held at micro-watershed level to understand the need, opportunities and feasibility of improvements. The major topics of Focus Group Discussions are as under:

- i) Agriculture
- ii) Livestock
- iii) Other livelihoods

The focus group discussions will be conducted with

- Different category farmers (agriculture),
- Different types of animal rearers (livestock), and
- Different micro-entrepreneurs, artisans and landless (other livelihoods).

Representative sample beneficiaries will be participants under each focus group discussion (FGD). The base information collected at micro watershed level should be available for ready reference during the focus group discussion. Sample data recording formats for different type of FGDs are annexed at Annexure-2. The outputs of the discussion should be clearly recorded to arrive at the Physical & Financial requirements at micro-watershed level.

Step-3.3: Identification of Entry point Activities

The entry point activities establish credibility of the Watershed Development Team (WDT) and create a rapport with the village community. The entry point activities, *inter-alia*, will include:

- I. Works based on urgent needs of the local communities such as revival of common natural resources, drinking water, development of local energy potential, augmenting ground water potential etc.
- II. Repair, restoration and upgradation of existing common property assets and structures (such as village tanks) may be undertaken to obtain optimum and sustained benefits from previous public investments and traditional water harvesting structures.
- III. Productivity enhancement of existing farming systems could also be an activity that helps in community mobilization and building rapport.

The different activities identified on different development indicators are scheduled in different phases of the project as discussed in Step 3. The project duration may be spread over 3 different phases as decided by the Nodal Ministry. After the entry point activities in the preparatory phase (duration of about 1-2 years), the key activities are spread over the watershed work phase (duration of about 2-3 years). During this period, all the major interventions are rigorously planned and executed to improve upon the problem areas. In the last phase of consolidation or withdrawal phase (duration 1-2 years), activities taken up during work phase are strengthened for its sustainability and enhanced productivity.

Step-3.5: Visualizing the expected returns and outcomes from project activities.

During focus group discussions, various watershed activities are identified and planned for implementation specific to the area and the beneficiary groups. Therefore, during the focus group discussion, the expected benefits and outcomes are also discussed among the beneficiaries. The Watershed Development Projects are broadly expected to achieve the following at the end of the project period:

- a. All the works/activities that are planned for the treatment and development of the drainage lines, arable and non-arable lands in the watershed area are completed with the active participation and contribution of the user groups/beneficiaries and the community at large.
- b. The beneficiaries/user groups/panchayats have willingly taken over the operation and maintenance of the assets created and made suitable administrative and financial arrangements for their maintenance and further development.
- c. All the members of the Watershed Committee and staff such as Watershed Secretary and Volunteers have been given orientation and training to improve their knowledge and upgrade technical/management and community organizational skills to a level that is appropriate for the successful discharge of their responsibilities on withdrawal of the Watershed Development Team from the Project.
- d. The village community would have been organized into several, homogeneous self-help groups for savings and other income generation activities which would have achieved sufficient commitment from their members and built up financial resources to be self sustaining.
- e. The increase in cropping intensity and agricultural productivity reflecting in overall increase in agriculture production.
- f. Increase in income of farmers/ landless labourers in the project area.
- g. Increase in groundwater table due to enhanced recharge by watershed interventions.

Step-3.6: Preparing and finalizing the plan for institutional and capacity building

Capacity Building is a continuous process enabling functionaries to enhance their knowledge and skills and develop the correct orientation and perspectives thereby becoming more effective in performing their roles and responsibilities.

Capacity Building and training of all functionaries and stakeholders involved in the watershed programme implementation would be carried out with definite action plan and requisite professionalism and competence.

Voluntary organizations play an important role in providing the capacity building trainings in different watershed areas. Several reputed organizations are functioning as resource organization for Watershed Development Projects in collaboration with State Governments to provide necessary capacity building support to watershed programs at various levels. The NGOs are also involved in capacity building as well as PIAs in IWMP.

Step-4: Meetings and discussion with the line departments and implementing agencies for convergence planning

Watershed activities are undertaken in an area to initiate development based on natural boundaries in place of administrative blocks. The funds available under the watershed programme is however not sufficient to saturate a watershed area. Some of the similar activities are undertaken under MGNREGA, BRGF, NRLM, RKVY, NHM and NFSM. Converging activities of these programmes with IWMP will help in optimum utilization of resources for sustainable development of watershed project areas. Efforts are made to converge all related programmes with IWMP. The DPR of IWMP will necessarily elaborate the activities to be taken up in convergence of the running state and central government schemes and programs.

The meetings with concerned departments/agencies will be organized on the convergence issues on the activities envisaged in DPR.

Step-5: Budgeting for the proposed activities

The activities enlisted and prioritized will be analyzed for its cost implications. The breakup costing will be as per the standard heads provided in the state and central government guidelines. The final costing will be reviewed in reference to the distribution of budget components (percentage) provided in the common guidelines for Watershed Development Projects-2008 (Revised Edition 2011).

Step-6: Exit Protocols/ withdrawal strategies

The overall objective of the watershed management projects is to create a conducive environment for the sustainable development of the area; and exit protocols facilitates it in the post project scenario. The safe exit plan focuses on the full-fledged involvement of the primary stakeholders to carry on the related development activities after the active support from the project (IWMP) is over.

During the activity completion phase, the detailed review of the different project interventions activities and sub-activities is done in view of the outputs and short terms and long terms benefits and impacts. The desired future benefits along with the required activities are visualized and planned on sustainable basis even after the active support of the project is over and the capacity for the required activities have been built during the project period. (All the stakeholders jointly exercise on finalizing the exit plan for the watershed management project). Progress of various activities, the utilization of planned resources against outlay and outputs and outcomes realized are weighed against the key outputs and outcomes envisaged during the project planning phase. This forms the basis for identifying and finalizing the exit procedures. 7 8

In nutshell ways exit protocols are parts of IWMP activities instead of a separate strategy in which secondary stakeholders facilitate to prepare action plans for withdrawal of the project in a sustainable manner by identifying successful options for replication. At the time of DPR preparation only general activities and procedures relevant to the area are listed as guideline to prepare the exit protocols in the last phase of project implementation.

Step-7: Data/information compilation, consolidation and Documentation in the DPR format to produce a Draft DPR

The overall responsibility for the preparation of a technically sound and high quality DPR would lie with the Project Implementing Agency (PIA). The DPR will be prepared by the WDT for integrated development of the watershed area with active participation of the Watershed Committee (WC). The WDT should utilize various thematic maps relating to land and water resources in the preparation and finalization of the DPR. This DPR shall necessarily include the clear demarcation of the watershed with specific details of survey numbers, ownership details and a map depicting the location of proposed work/activities for each year.

The secondary and primary information and data gathered from different sources through different means as mentioned above will be put together and organized in hard and soft (computerized) forms.

Data analysis: The spatial database along with attribute data for any activity linked with geographical features/location should be analyzed in GIS environment. Activities along with the required resources should be analyzed both in spatial (GIS) and non-spatial environments (spreadsheet etc.) to finalize and prioritize. The final action plan/ activity map will be prepared.

The general information captured and analyzed about the micro-watersheds/ watershed will be presented in concise tabular or text form. It should provide an overview on different aspects related to the watershed development objectives. The final activities to be taken up along with the phasing of the resources and budget should be detailed out as per the standard format. The action plan maps along with the resource maps will be appended in the DPR. Final text, tables, maps and necessary annexures will be compiled in the form of DPR as per the contents discussed above (section 2.2).

This DPR will be a part of the MIS from which details will be arranged into various layers on GIS as a monitoring, management, accounting and analytical tool besides serving as a source of information and a link to the state level data cell in the SLNA and National Data Centre.

Step-8: Gram Sabha for discussion on draft DPR and its approval after necessary changes as per the suggestions of Gram Sabha to finalize the DPR

The activities finalized in consultation with the beneficiaries, CBOs implementing agencies will be put up to the Gram Panchayat(s) through a well-organized meeting /Gram Sabha specially called for discussion on draft DPR. The beneficiaries will be explained the proposed activities/interventions to achieve desired benefits. The due suggestions provided by the attendants will be incorporated to finalize the DPR.

After approval by the Gram Sabha, the PIA shall submit the DPR for approval to the WCDC/DRDA/DP. Alternatively, the mechanism of approval and implementation of projects by district level committee /collector may continue to prevail.



PHASE-2



Activity 1: Details of Watershed:**Existing Livelihood patterns for Poor**

The existing livelihoods for marginal and landless farmers having low source of income are studied through PRA and (social mapping) and baseline survey (socio economic survey of the households). The new and potential income generation activities (livelihoods) are identified and understood to plan for the related activities.

(a) Village wise details of IWMP watershed

Name of the project, village, micro-watershed, area under micro-watershed and project cost.

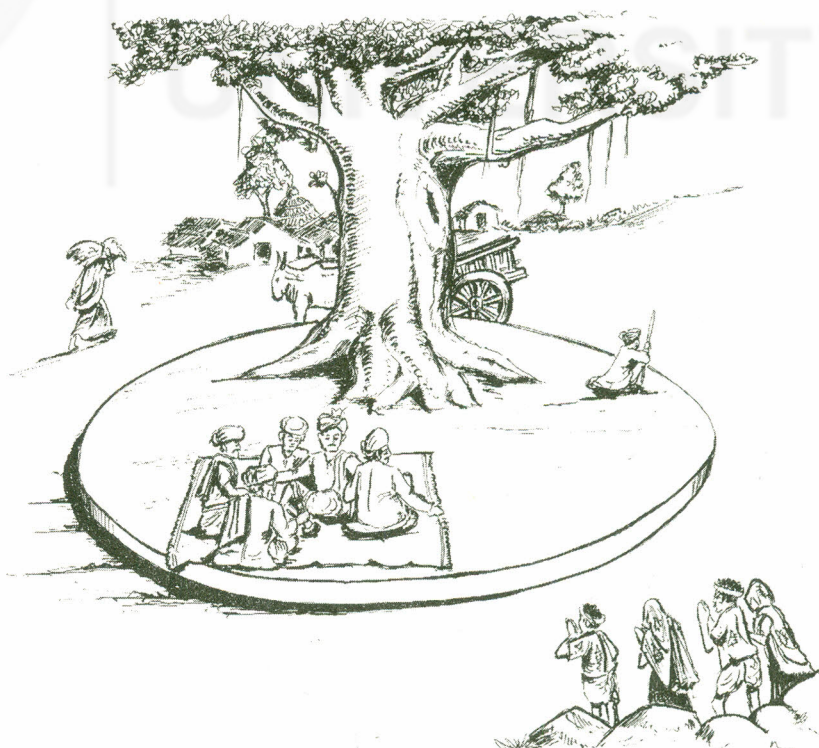
Sl. No.	Name of the Project (Block)	Name of Villages	Name of micro-watersheds	Geographical area of Micro- watershed (ha)	Treatable Area (ha)	Proposed Cost (Rs.)
1.						
2.						
3.						
4.						
5.						

(b) Population

The human population of the area is the key resource and driving force towards developmental activities under any project. Therefore, through understanding the people along with the social systems, occupational pattern etc. is essential for formulating a development project. PRA (social mapping) and household survey, the primary source of information and the secondary data at different levels is helpful to understand the population of the area.

Sl. No.	Parameters	Male	Female	Total	Ratio
1.	Adults (>18 years)				
	i) SC				
	ii) ST				
	iii) BC				
	iv) Others				
2.	Children (<18 years)				
3.	Literacy				
	i) Literates				
	ii) Illiterates				
4.	Work Force				
	i) Agriculture				
	ii) Industrial				
	iii) Service				
5.	Birth Rate				
6.	Death Rate				

The following information on the demographic features need to collected from PRA exercises.



(c) **Operational holding and Socio-economic status**

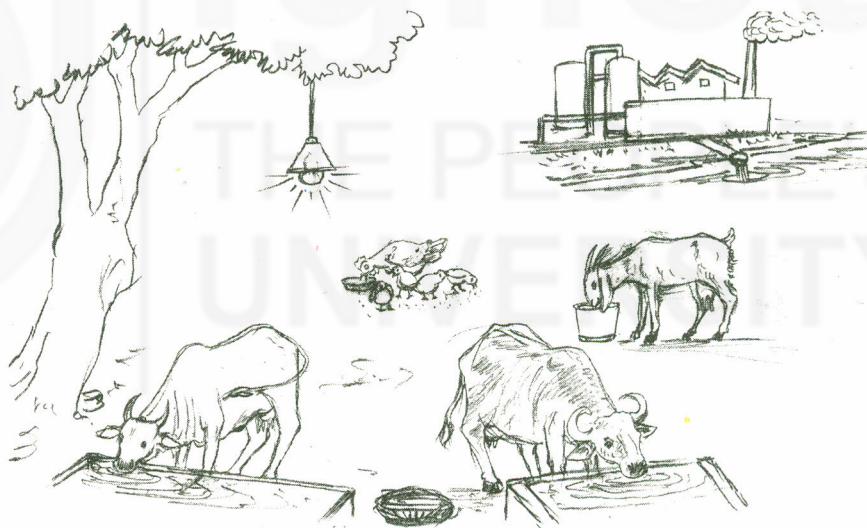
The landholding size and the annual income from all sources for a family form the basis for assessment of socio-economic status of the population. The based on land holding size the farmer are categorized as landless, marginal, small, medium and large. This information is helpful in planning different development activities for different income category population.

Sl. No.	Category	Total Households	No. of BPL Households	Land Holding (ha)								Annual Gross Income (Rs.)				
				Rainfed				Irrigated								
				SC	ST	BC	Oth-ers	SC	ST	BC	Oth-ers	SC	ST	BC	Others	Total
1.	Landless															
2.	Marginal Farmers (MF) (wet-1.25 acres, dry-2.5 acres)															
3.	Small Farmers (SF) (wet-2.5 acres, dry-5.0 acres)															
4.	Big Farmers (BF)															
Total																

(d) Livestock Status

The livestock based livelihoods are the common for marginal and landless population. The livestock details can be gathered as the following format filled in during the household's survey.

Sl. No.	Parameters	No./Quantity
1.	Milch Animals i) Cows ii) Buffaloes iii) Goat/Sheep	
2.	Draught Animals i) Bullock/Ox ii) He Buffalo	
3.	Others i) Poultry ii) Piggery	
4.	Total Milk production from milch animals (litrs/day)	
5.	Fodder Availability i) Dry (Abundant/Sufficient/Scarce) ii) Green (Abundant/Sufficient/Scarce)	
6.	Fuel wood Availability (Abundant/Sufficient/Scarce)	



(c) Operational holding and Socio-economic status

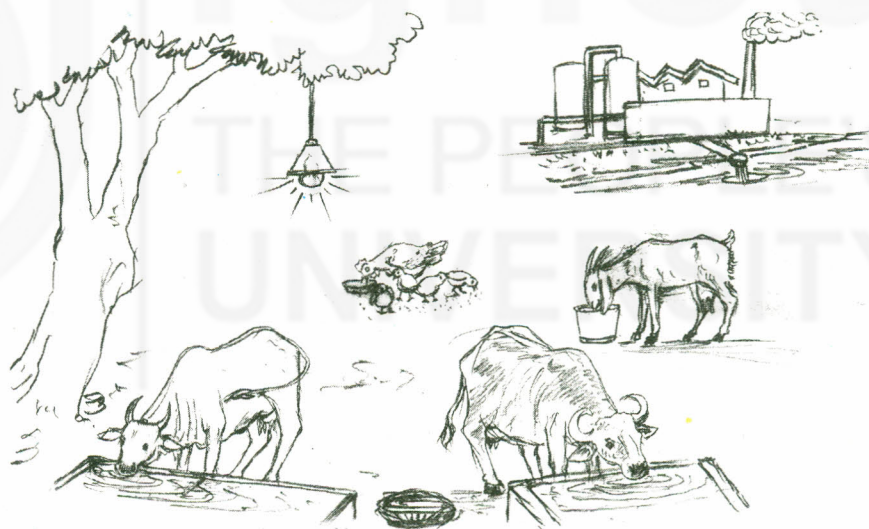
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				Rainfed				Irrigated									
				SC	ST	BC	Oth-ers	SC	ST	BC	Oth-ers	SC	ST	BC	Others	Total	
1.	Landless																
2.	Marginal Farmers (MF) (wet-1.25 acres, dry-2.5 acres)																
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6.	Fuel wood Availability (Abundant/Sufficient/Scarce)	



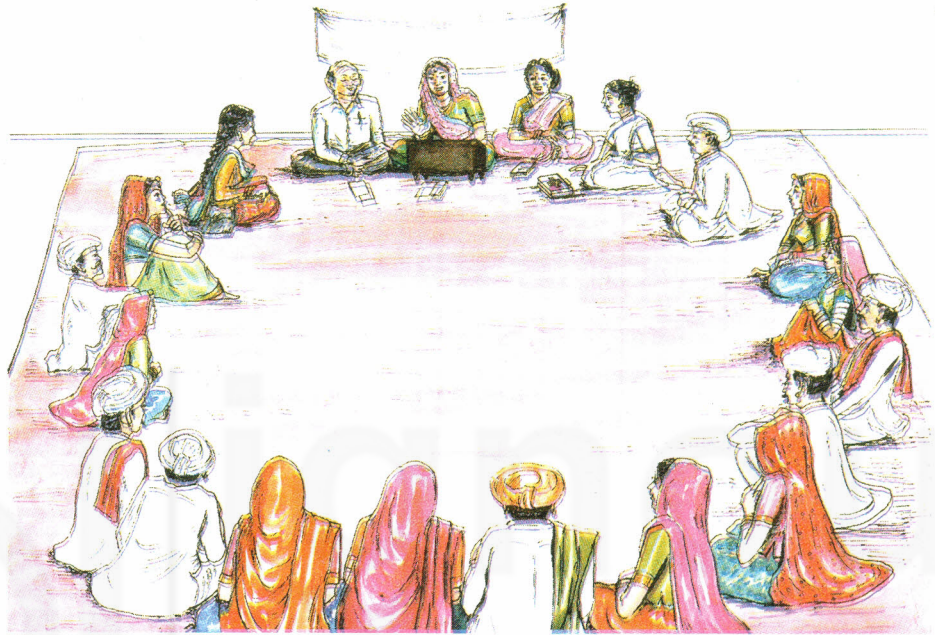
(e) **Other livelihoods and the Migration**

The forest produce based and other small scale activities form the basis of income generation for the landless and the poor. In the areas with odd agro-climatic conditions very few people are able to survive based on local livelihood. In such situations, people migrate to the nearby or distant urban area in search employment. The watershed development activities are also focused to prevent this type of stress migration. The details on the migration pattern can be obtained during the household survey and PRA exercise.

Sl. No.	No. of Persons Migrating			No. of Days per year of Migration	Major Reasons(s) for Migrating	Distance of Destination of Migration from the Village (km)	Occupation during Migration	Income from such Occupation (Rs.)
	M	F	Total					

(f) Community Based Organizations Operational in the area

The Community Based Organizations are the backbone of participatory development projects. These organizations are from the population itself have rapport with the other people understanding and working for their general needs. The arrangements and details of the CBOs prevailing in the area may be captured during the PRA exercises, focus group discussions and the household survey.



THE PEOPLE'S
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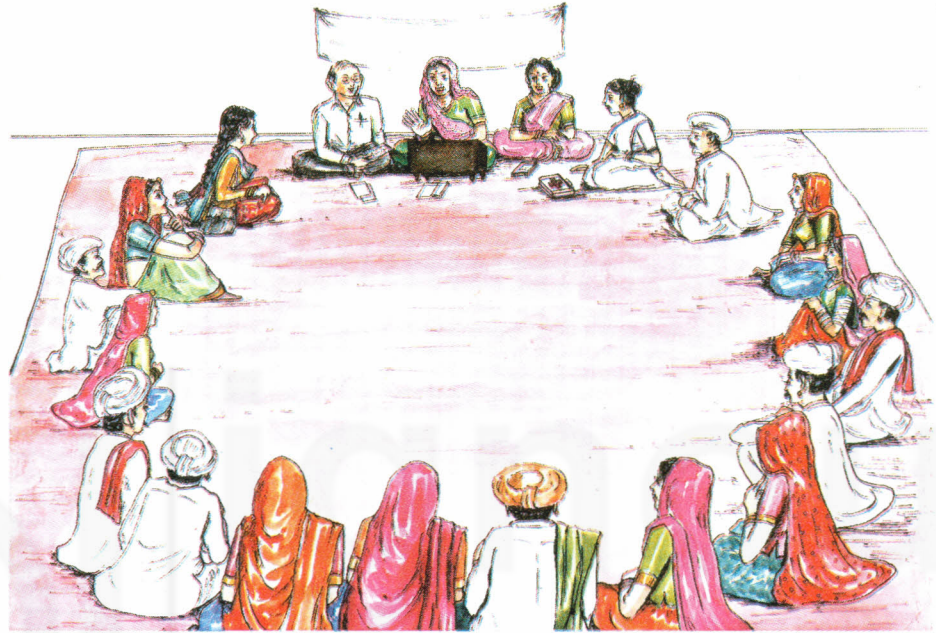
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S. No.	Type of Group	Total No. of CBOs				Total No. of Members				No. of ST Members in each category			No. of SC members in each category			No. of BC members in each category			No. of Others in each category			No. of BPL members in each category			Bank linkage	
		Only Men	Only Women	Both	Total		M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	No. of SHGs	Amount (Rs.)
1.	Self Help Groups (SHG)					(i) Landless																				
						(ii) MF																				
						(iii) SF																				
						(iv) BF																				
	Total																									
2.	User Groups (UGs)					(i) Landless																				
						(ii) MF																				
						(iii) SF																				
						(iv) BF																				
	Total																									
3.	VSS																									
4.	RMG																									
5.	WUA																									
6.	VO																									
7.	Other related Groups (Specify)																									

MF : Medium Farmer

SF : Small Farmer

BF : Big Farmer

SC : Schedule Caste

ST : Schedule Caste

BC : Backward Caste

BPL : Below Poverty Line

VSS : Vana Samrakshana Samithi

RMG : Resource Management Group

WUA : Water Users Association

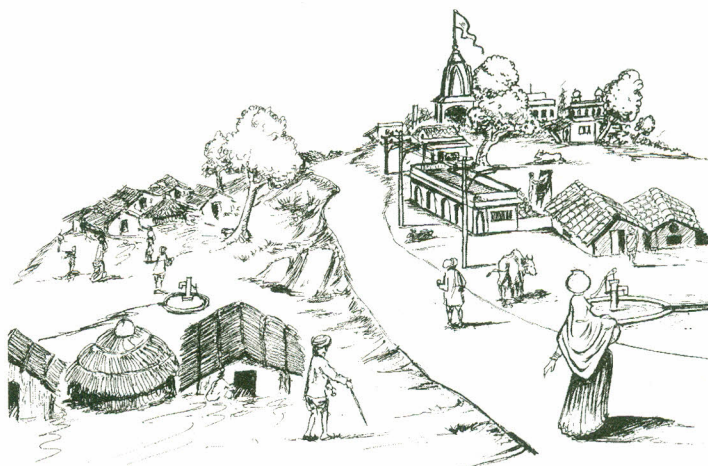
VO : Village Organization

(g) Infrastructure and communication facilities in the area

The status of infrastructure facilities available in the project area provides an overview of the past and recent development and the further need of essential infrastructure. The project activities are precisely planned as per the available and required infrastructure and communication facilities for its effective utilization during the project implementation. The details on infrastructure and communication are gathered during PRA (social mapping) and village/micro-watershed transect walk.

Sl. No.	Type of Infrastructure	No./ Quantity	Functional Non-Functional
1.	Educational Institutions		
	i) Anganwadi		
	ii) Primary School		
	iii) Secondary School		
	iv) Government College		
	v) Vocational Institutions		
2.	Service Institutions		
	i) Bank		
	ii) Post Office		
	iii) Primary Health Care Center		
	iv) Veterinary Center		
	v) Markets/ Shandies		
3.	No. of bore wells/pump sets		
4.	No. of Milk-collection centers (Union/ Society/Pvt. Agency/Others)		
	Total Quantity of surplus milk (litres)		
5.	Road Connectivity (to main road by an all-weather road) (Yes/No)		
6.	Bus facility (Yes/No)		
7.	No. of HHs with electricity connection		
8.	Others (specify.....)		
9.	No. of HHs with access to drinking water		
10.	Access to Agro Industries (Yes/No)		
11.	Any other facilities (specify.....)		

HH : House hold



Land and Crop Details in the Area

(a) Land use pattern in the area

The different types of land availability including topography along with the present land use pattern are the key basis for further planning of development activities in the area. The detailed information about the cropped area, area under forest, pasture, village common property under different use, habitation etc. is captured (in a format) during PRA (resource mapping) and focus group discussion.

Sl. No.	Village	Geo-graphical Area	Forest Area	Comm-unity Land	Land under Non-Agriculture Use	Permanent Pastures	Land Under miscellaneous tree crops and groves	Uncultivated Waste Land		Cultivated Area		Net Sown Area	Net Area Sown more than once	Gross Crop-ped Area
								Temp-orary Fallow	Permanent Fallow	Culti-vated Rainfed	Culti-vated Irrigated			

(b) Details of community property Resources (CPR)**Soil Resources Base**

The type of soil (texture) its depth, soil slope (topography) and different soil related problems (erosion, salinity and other types of degradation due to water logging) at different locations is a key basis for planning the natural resource management aspects especially soil conservation activities. The details are captured during PRA, observation through transact walk and the primary data collection (soil sampling)

Sl.No.	CPR Particulars	Total Area (Acres) Area Owned/Inpossession of				Area Available for treatment (Acres)			
		Pvt. persons	Govt. (specify dept.)	PRI	Any Other (Pl. specify)	Pvt. persons	Govt. (specify dept.)	PRI	Any Other (Pl. specify)
1.	Wasteland/degraded land								
2.	Pastures								
3.	Orchards								
4.	Village Woodlot								
5.	Forest								
6.	Village Ponds/ Tanks								
7.	Community Buildings								
8.	Weekly Markets								
9.	Permanent Markets								
10.	Temples/Places of worship								
11.	Others (Pl. specify)								
	Total								

(c) **Crops, Cropping Pattern and Cropping Intensity in the area**

The information details of crops include

1. Types and names of crops grown under different seasons (Rabi, Kharif and Zaid)
2. Irrigated and Rainfed cropped area
3. Area under Single or multiple cropped area (cropping Intensity)
4. Crop inputs and cost of cultivation
5. Productivity of the crops under above listed conditions

The details of the above are collected from secondary data (revenue records) and PRA, focus group discussions as well as household's survey

Sl. No.	Season	Crop Sown	Rainfed				Irrigated				Total			
			Area (Acres)	Production (Ton/yr)	Productivity (Kgs/acres)	Cost of cultivation (Rs./acres)	Area (Acres)	Production (Ton/yr)	Productivity (Kgs/acres)	Cost of cultivation (Rs./acres)	Area (Acres)	Production (Ton/yr)	Productivity (Kgs/acres)	Cost of cultivation (Rs./acres)
1.	Kharif													
2.	Rabi													
3.	Summer													
Total														

Sl. No.	Crop Classification	Area (Acres)
1.	Single crop	
2.	Double crop	
3.	Multiple crop	
4.	Mixed Crop	

(d) Agricultural Mechanization in the area:

The availability of agricultural implements and machines their utilization by different category of farmers is also important information in planning the different activities of watershed management. The details are gathered during PRA (resource mapping) and households survey.

Sl. No.	Implements	Nos.
1.	Tractor	
2.	Sprayers	
3.	Cultivators/Harrows	
4.	Seed drill	
5.	Any other (Pl. specify)	

Agro-climatic Conditions and Surface and Groundwater Resources

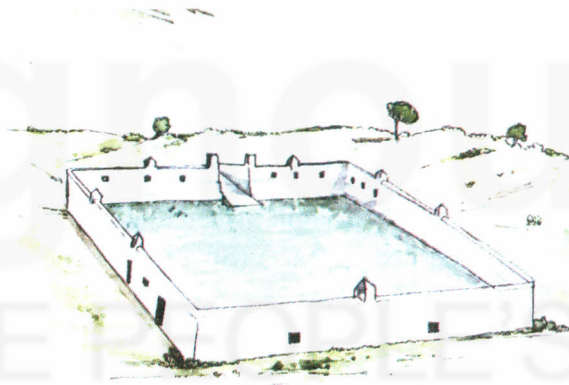
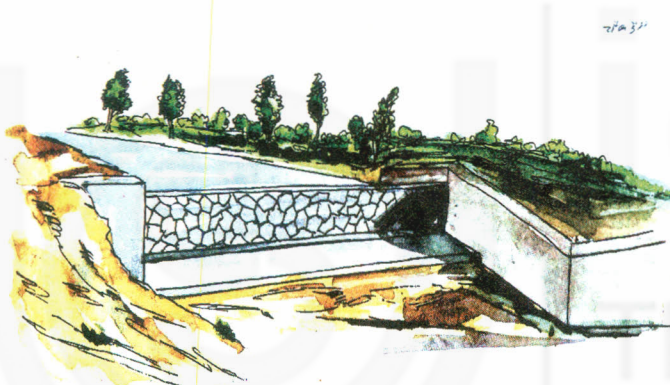
The rainfall pattern and associated meteorological parameter are key features affecting the different land use, cropping practices, natural resource base and finally production systems of the watershed. Therefore, the information on rainfall, humidity, streams and surface storage, drainage networks etc. will be crucial for planning the activities on natural resource management. Part of the information is collected through secondary sources (different line departments) and partly through PRA and focus group discussion.

1. Average Rain fall (in mm) and rainfall months :
2. Major Streams :
3. Agro climatic Zone :
4. Average temperature in Centigrade (Max-Min) :
5. Humidity :
6. Average Annual Run off (mm/yr) :
7. Average Annual Soil Loss (Ton/Ac/Yr) :
8. History of Flood occurrence flood during last 5 years) :
(specify months and years of flood occurrence) :
9. History of drought affected occurrence of drought during last 5 years) (Specify Year/s of Drought occurrence) :
10. No. of tanks, ponds & surface storage structures :
11. Present Ground water table status :

a. Surface Water Sources

The details of the surface water sources are helpful to stand the water availability for different activities including irrigation, drinking, domestic uses, fisheries, etc. the information is gathered through line departments, PRA (resource mapping) and focus group discussions.

Sl. No.	Water Resource	Numbers	Area Irrigated (Acres)	Storage Capacity (Cubic meters)
1.	Tank			
2.	Pond			
3.	Lake			
4.	Check dam			
5.	Percolation tank			
6.	Channel			
7.	Any others (specify _____)			

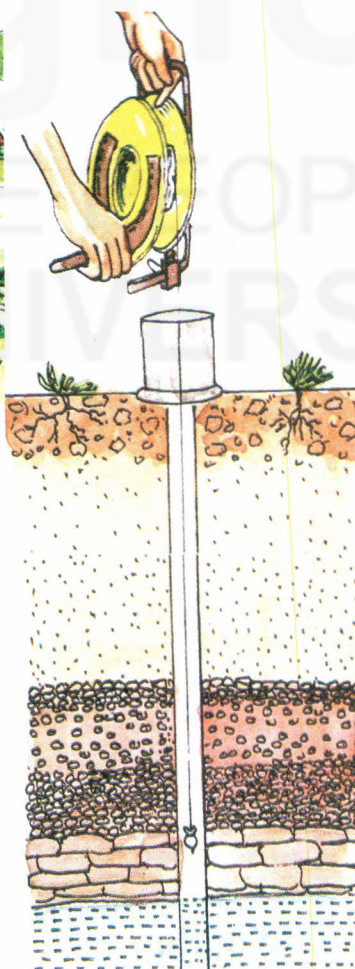
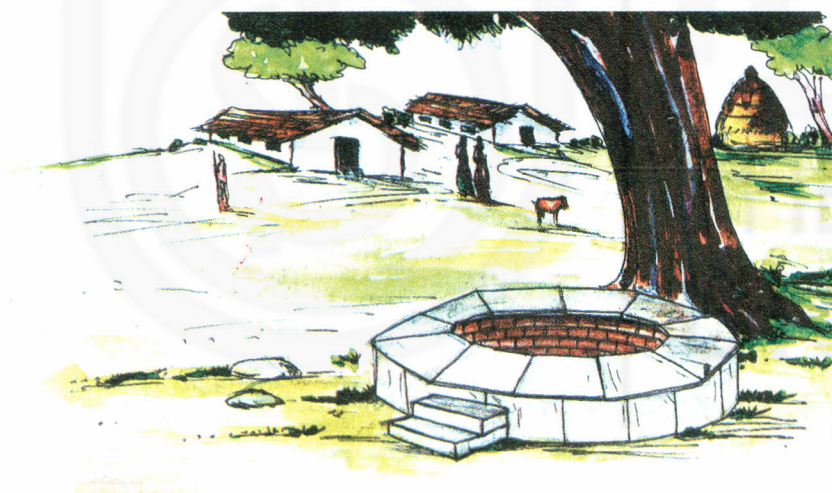


b. Groundwater Sources and Status

The details of the groundwater sources are helpful to stand the water use for different activities including irrigation, drinking, domestic uses, and purposes. The ground water table status during last few years will be important for planning activities for sustainable groundwater utilization in conjunction with the surface water the information. is gathered through line departments, PRA (resource mapping) and focus group discussions.

The activities for development of new and repair of the existing ground water structures will be planned accordingly.

Sl. No.	Name of the Farmer	Survey No.	Source (open/ bore well)	Date of Recording	Depth of Water Table from Ground Level (in mts)	Source Located (ridge/ middle/ valley)	Remarks
1.							
2.							
3.							
4.							
5.							
6.							



c. **Irrigation facilities**

The details of the surface and ground water sources in the watersheds ascertain the irrigation facilities and practices. The different type of irrigation practices, its efficiencies and scope of improvement in increased availability of water and efficiency of the irrigation systems need to be understood. The information is collected from the PRA (resource mapping and focus group discussion)

Sl. No.	Irrigation Source	Numbers	Ayacut in Acre
1.	Minor tanks		
2.	Open wells		
3.	Bore wells		
4.	Canal irrigation		
5.	Natural spring head		

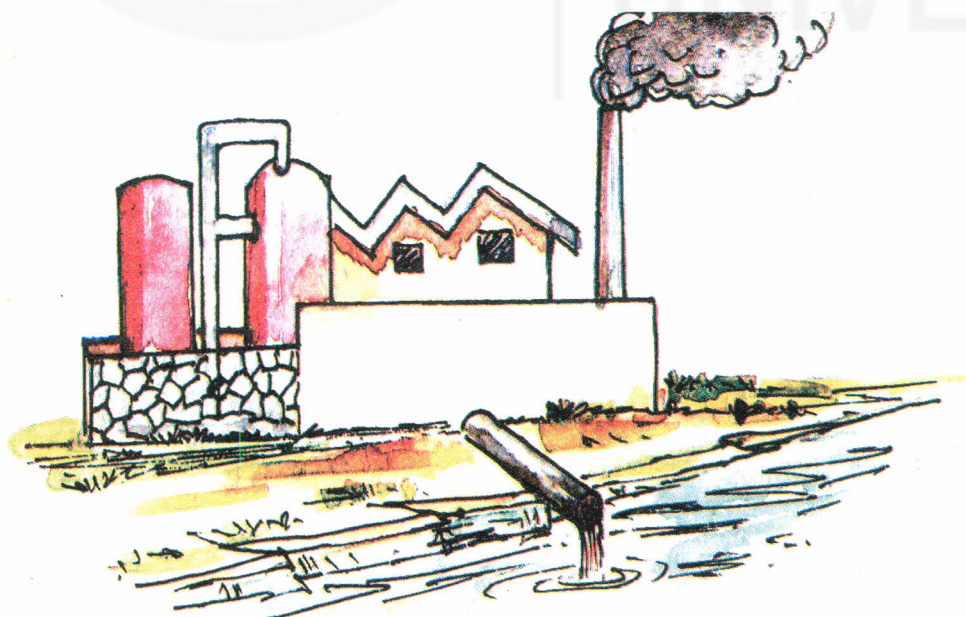
d. Drinking water–availability and Quality

The different sources of drinking water and quality of potable water are vital for ensuring the safe and healthy drinking water availability for the inhabitants. The information is gathered through PRA and secondary sources. Wherever required quality testing kits may be used to test the water as per drinking water norms and documented.

Sl. No.	Parameters	Quantity
1.	Drinking water requirement (Ltrs./day)	
2.	Present availability of drinking water (Ltrs./day)	
3.	No. of drinking water sources available a) No. functional b) No. requires repairs c) No. defunct	
4.	Short fall, if any (Ltrs/day)	
5.	No. of families getting drinking water from outside the Microwatershed area (Nos.)	
6.	Requirement of new drinking water sources (if any) (Nos.)	

Quality of drinking water

S. No.	Source (Bore/well/ CHS etc.)	Location samples	Date of samples collection	No. of samples collected	Specific remarks of the lab report	Stage of ground water development (safe/semi/ critical/over exploitation)	Reasons for over exploitation
1.							
2.							



Activity 4

Details of livelihood of poor and Existing assets

The rural population in a micro-watershed or village has agriculture based, livestock based, forest produce based and other allied activities based livelihoods. The inhabitants having different sizes of land holding have sources of income. All are need to be identified for the improvements so that the related activities can be planned during the integrated watershed management project. Different existing and potential livelihoods are identified during PRA (social and resource mapping) and focus group discussion. The present scenario of No. of persons involved and the earnings from different livelihoods are also noted down for scope of improvements.

SUGGESTED READING AND REFERENCES

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ACRONYMS & ABBREVIATIONS

BRGF	Backward Regions Grant Fund
CAPART	Council for Advancement of People's Action & Rural Technology
CAZRI	Central Arid Zone Research Institute
CBOs	Community Based Organizations
CEO	Chief Executive Officer
CPRs	Common Property Resources
CRIDA	Central Research Institute for Dry Land Agriculture
CSWCRTI	Central Soil & Water Conservation Research & Training Institute
DDP	Desert Development Programme
DoLR	Department of Land Resources
DP	District Panchayat
DPAP	Drought Prone Areas Programme
DPC	District Planning Committee
DPR	Detailed Project Report
DRDA	District Rural Development Agency
DWDU	District Watershed Development Unit
GIS	Geographical Information System
GP	Gram Panchayat
GPS	Global Positioning System
GS	Gram Sabha
ICAR	Indian Council of Agricultural Research
ICRISAT	International Crops Research Institute for Semi-Arid Tropics
IEC	Information, Education and Communication.
IIFM	Indian Institute of Forest Management
IRMA	Institute of Rural Management, Anand
ISRO	Indian Space Research Organization
IT	Information Technology
IWDP	Integrated Wastelands Development Programme
IWMP	Integrated Watershed Development Programme
JFMC	Joint Forest Management Committee

LFA	Logical Framework Analysis
MANAGE	National Institute of Agricultural Extension Management
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Act
MoRD	Ministry of Rural Development
MOU	Memorandum of Understanding
NABARD	National Bank for Agriculture & Rural Development
NAEP	National Afforestation & Eco-development Project
NDC	National Data Centre
NFSM	National Food Security Mission
NGO	Non-Governmental Organization
NHM	National Horticulture Mission
NIRD	National Institute of Rural Development
NRAA	National Rainfed Area Authority
NREGS	National Rural Employment Guarantee Scheme
NRLM	National Rural Livelihoods Mission
NRSA	National Remote Sensing Agency
NWDPA	National Watershed Development project for Rainfed Areas
PIAs	Project Implementing Agencies
P NP	Participatory Net Planning
P RA	Participatory Rural Appraisal
RKVY	Rashtriya Krishi Vikas Yojana
RVP&FPR	River Valley Project & Flood Prone River Project
SAUs	State Agricultural Universities
SC	Scheduled Caste
SGRY	Sampoorna Grameen Rojgar Yojan
SHGs	Self Help Groups
SIRD	State Institute of Rural Development
SGSY	Swarnjayanti Gram Swarozgar Yojana
SLPSC	State Level Project Sanctioning Committee
SSR	Standard Schedule of Rates
ST	Scheduled Tribe
SVOs	Support Voluntary Organizations

Project Formulation

SLNA	State Level Nodal Agency
SWAN	State Wide Area Network
UGs	User Groups
VOs	Voluntary Organizations
VLW	Village Level Workers
WC	Watershed Committee
WCs	Watershed Committees
WDF	Watershed Development Fund
WDT	Watershed Development Team
WTCs	Water Technology Centres



Annexure 1

FORMAT FOR SOCIO-ECONOMIC SURVEY (HOUSEHOLD)

1. Name and Code of Watershed/Microwatershed :
2. Village/Block/District :
3. Name of Household :
4. Father's Name :
5. Family Particulars :
 - Head of the Family with surname :
 - S/O or W/O :
 - Caste (General/SC/ST/OBC) :
 - Age :
 - Occupation (Main & subsidiary) :
 - Annual Gross Income Rs) :
 - BPL : Yes/No
 - Membership in CBOs : SHG/UG/Others Group

Sl. No.	Name of the Family Members	Relationship with Head of family	Sex	Age	Education	Occupation (Main & Subsidiary)	Annual Income (Rs.)

7. Land and Crops Details (in hectare)

Survey no.	Total Area (ha)	Fallow/ Cropped	Rainfed		Irrigated		Source of Irrigation
			Single crop	Double crop	Single crop	Double crop	

8. Livestock details

Sl. No.	Type of Animal	Existing Numbers	Milk/Egg/Meat Production per day	Milk/Egg/Meat Quantity sold per day	Income Generated per annum (Rs.)
	Cows				
	Buffaloes				
	Goat/sheep				
	Bullock				
	He Buffalo				
	Poultry				
	Pig				
	Other animals (specify)				

9. Agricultural Mechanisation

Sl.No.	Implements being used	Nos.	Owned/hired
	Tractor/MB Plough/Harrow		
	Tillar		
	Threshers etc.		

10. Migration Status:

The Family members migrated in search of employment : Yes/No

If Yes

No. of Persons Migrating	No. of days per year of Migration	Reasons for Migration	Distance of Destination of Migration from the Village (km)	Occupation during Migration	Income from such Occupation (Rs. in Rs.)
Men					
Women					
Total					

11. Availability of drinking water

Primary Source for Drinking Water	Community Supply	Well	Hand Pump	Motor Pump	Tank	Others
Distance from House (km)						
Time spent for fetching of water (hrs)						

12. Availability of Food Grains and Fodder

Item		No. of days/ availability in a year
Food grains (Wheat and other coarse grains)		
Work (Labour etc.) and MGNREGA etc.		
Fodder	Dry	
	Green	
Fuel		

13. Gap analysis of the Household

Sl. No.	Gap	Identified Gaps	Opportunities	Support required
1.	Agriculture: Cropped Area Cropped Variety (Indegenious/HYV) Crop Production Techniques			
2.	Livestock (Rearing)			
3.	Livelihoods			
4.	Social Problems			
5.	Natural resources (Land, water, vegetation, energy etc.)			
6.	Capacity building			
7.	Others (Specify)			

Annexure 2

PRA AND NET PLANNING FORMAT

Name of the Watershed Project/
 Micro-watershed :

 Village :

 Block :

 Mirco-Watershed/Watershed Codes :

 District :

 Name of the Farmer/Households :

 Social Status : General / ST/SC/BC/Others

 Field/Plot / Survey No :

 Name of the User Group :

 Total Land holding (ha) :
 a) Irrigated :
 b) Rainfed :
 c) Fallow :
 d) Waste land :
 e) Orchards (ha) :

A) Land Details (Cropped land) (ha)

Project Manual

Sl. No.	Season	Crop Sown	Rainfed				Irrigated				Total			
			Area (ha)	Production (Qty./yr.)	Productivity (Kg/ha)	Cost of cultivation (Rs./ha)	Area (ha)	Production (Qty./yr.)	Productivity (Kg/ha)	Cost of cultivation (Rs./ha)	Area (ha)	Production (Qty./yr.)	Productivity (Kg/ha)	Cost of cultivation (Rs./ha)
1.	Kharif													
2.	Rabi													
3.	Zaid (summer)													

B) Waste Land (ha)

Sl. No.	Waste Land Type	Area (ha)
1.	Barren	
2.	Waterlogged	
3.	Rocky	
4.	Others (specify)	

C) Land Resources and Land Use

Character	Irrigated (ha)	Rainfed (ha)	Uncultivable Land (ha)	Forest (ha)	Others (Specify)
Area (ha)					
General Slope (%)					
Soil depth (cm)					
Soil texture					
Erosion status					

D) Source of Irrigation

Sources	Status	Numbers	Area Irrigated (ha)
Canal	Functional		
	Non-functional		
Open Wells	Functional		
	Non-functional		
Bore Wells	Functional		
	Non-functional		
Ponds/Tanks	Functional		
	Non-functional		

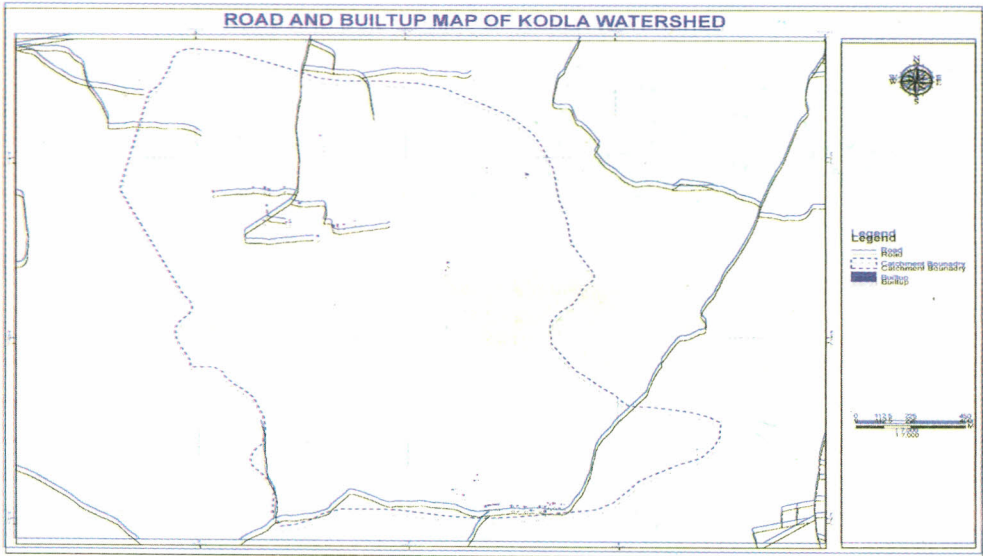
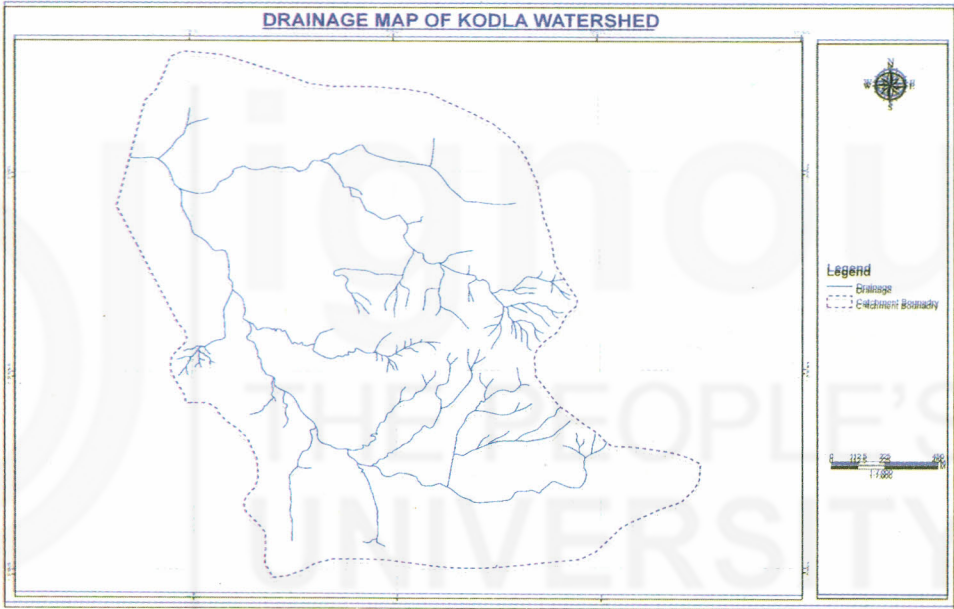
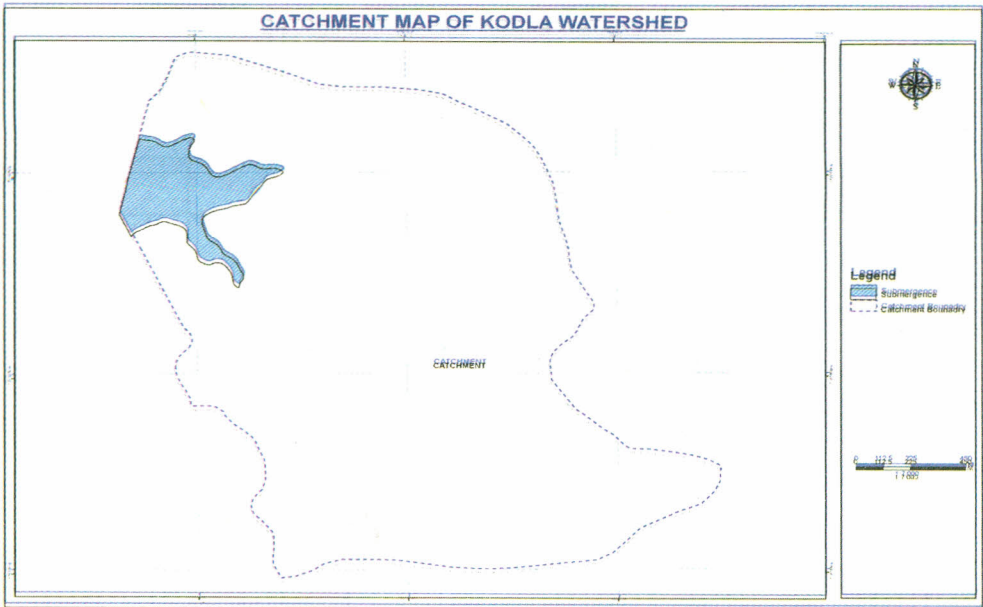
Rough Field Sketch of Famer (Showing the Boundary Details) and proposed activities in the map

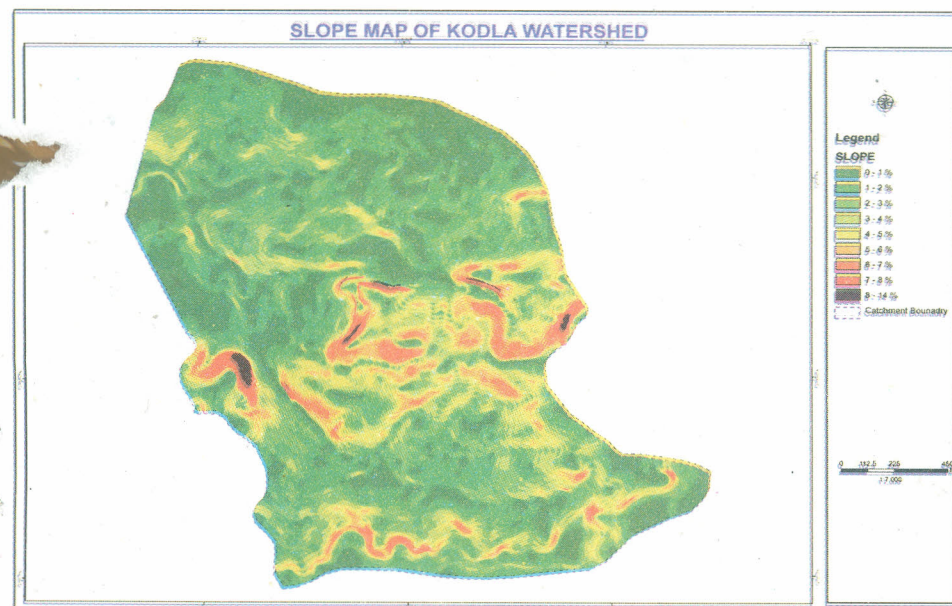
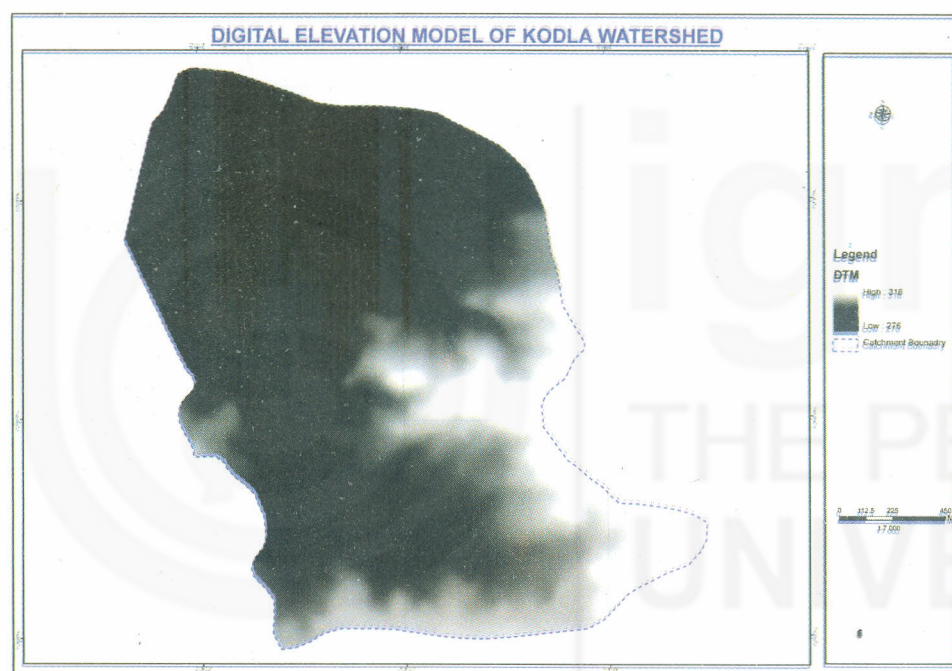
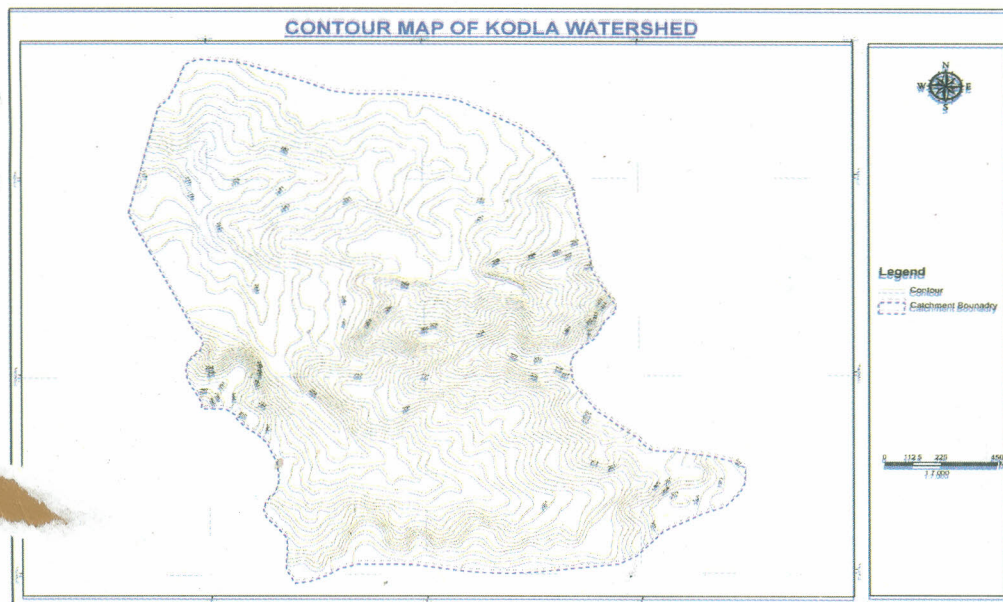


Activities Proposed

Sl.No.	Activity Proposed	Land Types	GPS Coordinates (Longitude/Latitude)	Work (Quantity)	Unit	Unit cost	Total Amount (Rs.)

Note : Fill the inputs of above proposed work in concerned input data sheets)





NOTES



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