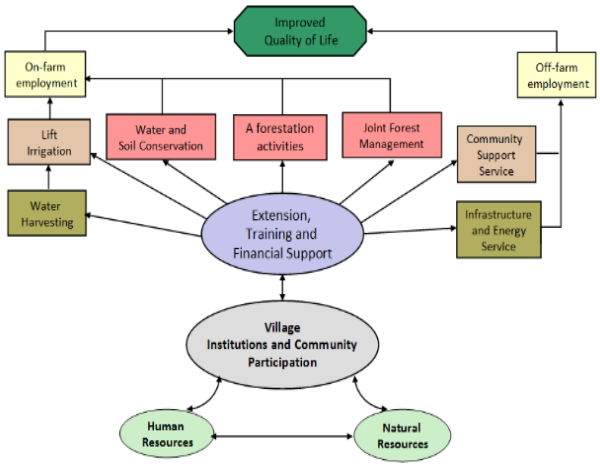
Integrated Watershed Management

Integrated Watershed Development Approach



Execution of Watershed Development

The concept of watershed management focuses mainly on the management of these resources in medium or large river valleys, is designed to slow down rapid runoff and excessive soil erosion, and to slow the rate of siltation of reservoirs and limit the occurrence of potentially damaging flash flooding in river courses.

The overall objectives of watershed development and management programs take the watershed as the hydrological unit, and aim to adopt suitable measures for soil and water conservation, provide adequate water for agriculture and domestic use, and improve the livelihoods of the inhabitants.

Watershed management is practiced as a means to increase rain fed agricultural production, conserve natural resources and it's not only limited to land, water and biomass, but also worried with integration for self-reliance and holistic development of the rural poor.

Components of Watershed Development

A) Training: it includes training of all people involved in implementation of watershed programme including the villagers.

B) Community Organization: activities are being performed like conducting of Participatory Rural Appraisal Exercises, awareness camps, exposure visits and formation of SHGs and UGs.

C) Watershed Treatment/Development Works:

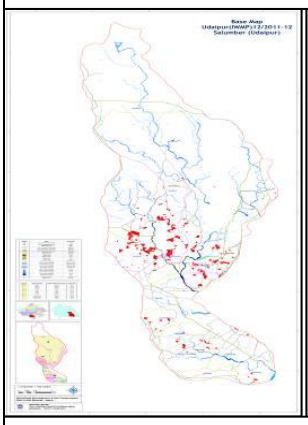
- Land development including in situ measures and soil conservation.
- Drainage line treatment by vegetative and engineering structures.
- Development of small Water Harvesting Structure such as check dams, water percolation tanks ponds etc.
- Nursery raising for fodder, timber, fuel wood and fruit plant species.
- Agro forestry and Horticulture Development.
- Pasture land development.

Scope of work & SGPL's Solution

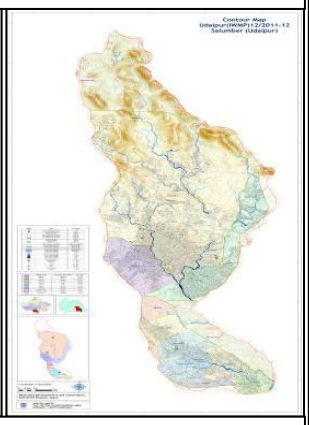
SGPL with its deep expertise in watershed program and with a specialized team having expertise in rural development mapping and having excellent understanding of watershed i.e. Drainage, contour, Elevation, Slope and other Hydrology components and deployed the entire Mapbase.

The entire conversion process flow was well defined at the beginning of the project. All the guidelines, layering, database & symbol standard were thoroughly understood by the team & timely clarifications were sought from client on the all grey area.

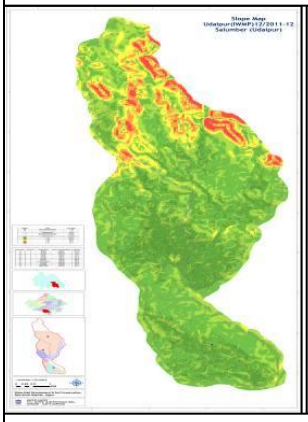
Base Map



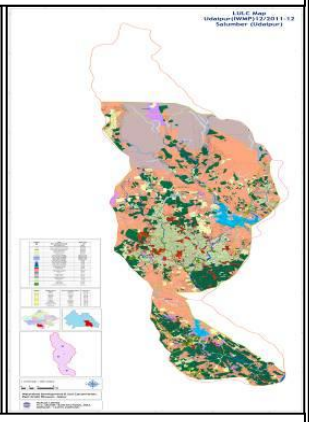
Contour and Revenue Map



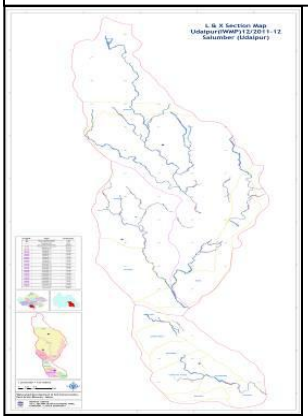
Slope Map



LULC Map



L Section & Cross Section Map



Inputs received from client

- Watershed Community & Filed survey to access the user needs
- The Land Record Integration
- Attribute data collection on the ground

Desired output

- Base Map
- Contour & Slope Map
- Land Use/ Land Cover with all details
- Aspect, Elevation & Flow Accumulation Model
- Drainage System with proposed structure

Technology

- Auto Desk- Auto Cad Map 2010 – to generate L Section & Cross Section of water streams
- ArcMap - GIS Database Development

ERDAS Imagine – Generation of DEM & Contour to finalize the ridge line of watershed.

Client

The client-WAPCOS Limited is a “MINI RATNA” and “ISO 9001:2008”accredited Public Sector Enterprise under the aegis of the Union Ministry of Water Resource, Government of India.

With in-built capability to provide multi-disciplinary project teams comprising of its own core group of professionals and specialists from various organizations of Govt. of India, WAPCOS provides consultancy services in all facets of Water Resources, Power and Infrastructure sectors in India and Abroad