

**Watershed Development Department
Government of Karnataka
Annual Report 2013-14**

OUR VISION

- To be counted among the most Professional. Pioneering, Innovative, Dedicated and Farmer- Focused Watershed Development Department in the nation
- To have sustainable development of land resources in the rainfed / degraded areas of rural Karnataka to enhance their productivity.
- To achieve the goal of sustainable development through participatory approach of stakeholders in watershed development programme and enhance livelihood opportunities of the people living in the rainfed / degraded areas.

OUR MISSION

Our mission is to develop, promote and implement through participatory approaches, a decentralized, cost Effective/productive, transparent and sustainable Watershed treatment package;

- to meet rural livelihood needs
- to enhance employment and income opportunities for the poor,
- to improve the productive potential of natural resource base,
- to reduce the poverty and natural resource degradation

INTRODUCTION

India is one of the major agricultural countries with more than 65% of the population depending on it. Indian agriculture is dependent on monsoon which is not uniform over the years. Nearly three fourths of the cultivable land in India is dependent on monsoon. According to estimates of 2008 the agriculture sector contributed 17.2% of Indias GDP. and providing employment to around 58.2 percent of the work force.

The productivity of any crop mainly depends on two natural resources- land and water in addition to management practices. Therefore the conservation, up gradation and utilization of these two natural resources on scientific principles is essential for the sustainability of rainfed agriculture. The watershed concept for development of rainfed agriculture is gaining importance over the years and it amply demonstrated that watershed developmental tools are very effective in meeting the objectives and mission.

Karnataka has been given an important place for Watershed Development because 75% of the cropped area in Karnataka depends upon low and uncertain rainfall. The geographical area of the State is 190.50 lakh ha. of which 129.70 lakh ha. is available for watershed development. Upto the end of the year 2013-2014 63.27 lakh ha is already treated, and 66.43lakh ha. is yet to be treated.

Importance of watershed development in Karnataka:

The land resources of Karnataka, especially its dry drought prone lands, which comprises more than 79 % of the total arable area, have been poorly managed by the resource poor farmers of the State. Soil loss due to erosion coupled with reduced water resources has led to a situation of rapid soil fertility deterioration, declining/stagnating crop yields, depletion of underground water sources, deforestation, denudation, destruction of natural pasture and diminishing biomass production. Exploring the full potential of rain fed agriculture to meet the food , fodder and fuel requirement of the State population, is the only alternative, however, this will require investing in suitable soil and water conservation technologies, crop breeding targeted to rainfed environments, agricultural extension services, and access to markets, credit and input supplies in rain fed areas.

Karnataka has the highest proportion (79 %) of drought prone area among all major States in the country and in absolute terms it has the second largest area of dry land in the country after Rajasthan.

Area scenario for development on watershed concept in Karnataka

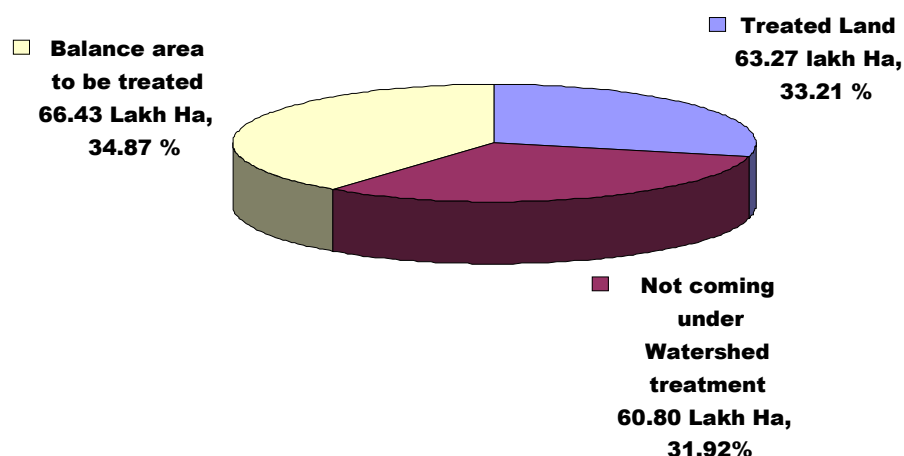
- Total geographical area : 190.50 lakh ha
- Total area available for treatment :129.70 lakh ha
- Total area already treated : 63.27 lakh ha
- Balance area to be treated : 66.43 lakh ha
- Area not available for treatment : 60.80 lakh ha

Watershed Treatment Status in the State

Total Geographical Area : 190.50 Lakh Ha)

(Area available for Watershed Treatment 129.70 Lakh Ha.)

(As on March 2014)



Objectives of Watershed Development Programmes:

1. Improve the productive potentials of selected watersheds and their associated natural resource base.
2. Sustainable alleviation of Poverty.
3. Develop and strengthen community based institutional arrangements for sustainable natural resource management.
4. Improved skills and employment opportunities for non-farm sectors.
5. Involvement of village communities in participatory planning, implementation, social and environmental management, maintenance of assets and to operate in a more socially inclusive manner.

AIMS OF THE PROGRAMMES

1. Improving agricultural productivity.
2. Improving vegetative cover.
3. Increasing milk and horticulture production.
4. Increasing fodder and fuel availability.
5. Reducing soil erosion, runoff and nutrient loss.
6. Improve water availability at surface and ground.
7. Increasing household income.
8. Enhancing quality of life among local communities.
9. Local institutional development through community based organizations.
10. Ensuring institutional support by Watershed Development Department as facilitator and by NGOs for community organization and strengthening.

CHAPTER-I

History of watershed Development:

A. Pre-Independence Era:

Soil conservation and land development activities have been in practice, since the art of agriculture was initiated. Kings, emperors and rulers of the ancient India have taken up such activities like construction of village ponds, tanks and road side plantations. The British imperial Government took steps to control the problem of soil erosion and water conservation. The Royal Commission constituted by the Imperial Government suggested several measures to combat the severe droughts prevailing in the country. Recommendation for establishment of dry land research stations was the most important among other measures of the Government. Out of the Five Dry land research stations (DLRS) established in the country, three were established in Karnataka at Bijapur, Hagari and Raichur. These centers have given paramount importance to soil and water conservation research and developed techniques for effective soil and water conservation in the semi-arid region.

B. Post – Independence Era:

1. Phase-I. Conventional Soil and water Conservation period: (up to 1970)

During the 1st Five Year plan (1951-1956), scientists and planners were very much aware of the soil erosion problems existing in the country, but the scientific solutions to tackle these problems were not available at that time. Therefore, the Government had established nine Soil conservation research demonstration and training centers in the country during 1st and 2nd Five year plans and one such centre was established in Bellary (1954) in Karnataka. The focus was on development of soil and water conservation techniques to support farming in arid and semi-arid regions for effective soil erosion control and *insitu* moisture conservation. Mysore State Government passed an Acts and rules for land improvement during 1960s and further the Government of India also launched River Valley Projects in the year 1962.

The projects and programmes of soil and water conservation remained as Government programmes, without peoples participation and without integration of other sectors like horticulture, forestry and animal husbandry.

2. Phase-II. Integrated Approach for Soil and water Conservation: (1970 to 1985)

During 1970's rain fed agriculture was given importance and at the same time, the idea of multi-disciplinary approach to tackle the problems of dry land farming was also conceived. ICAR started All India Co-ordinate Research Project for Dry land Agriculture during 1971 and in Karnataka AICRP for Dry land was started in three places, namely GKVK-Bangalore, ARS-Bijapur and CSWCRTI-Bellary. Later, the Operational Research Projects were established to disseminate the research results to the farmer's field. Govt. of India launched DPAP (1973-74) to tackle problems faced by those areas constantly affected by severe drought conditions with an objective of taking up drought proofing measures. Again, during 1977-78, DDP was started based on recommendation of National Commission on Agriculture in its reports (1974 and 1976), to mitigate the effect of desertification and adverse climatic condition on crops, human and livestock population.

During this period also, the Soil and water conservation activities were lacking people's participation, even though it attained momentum for integrated approach for watershed development.

3. Phase-III. Consolidation of Co-ordination / Integration and initiation of the concept of Peoples Participation: (1985 to 2000)

The projects under phase 2 of above, amply demonstrated potential of dry land technologies using integrated approach in watershed development. However, implementation suffered due to lack of co-ordination among different sectors. Therefore to address these problems of co-ordination, World Bank assisted projects like Kabbalanala Watershed Project (1984) was implemented, where the officers from Agriculture, Horticulture and Forest Departments were brought together under a single administrative leadership of Project Director. Government of Karnataka established four Dry Land Development Boards (DLDBs) at Revenue Divisions to implement the District Watershed Projects. A State Watershed Development Cell (SWDC) was also set up at State level headed by a Director, to co-ordinate the activities with policy makers and other development Departments in respect of technical, financial and administrative problems.

Projects like NWDP (1985) and NWDPRA (1992) were launched by GoI. Hanumantha Rao Committee (1993) was also constituted to identify the strategies to improve the implementation efficiency of Area Development Programmes like DPAP , DDP and IWDP. Dr. Hanumantha Rao's Committee recommended for providing responsibility to local peoples institutions, in planning, execution and maintenance of watershed projects (1995).

Watershed development approach has undergone a transformation to make it stronger. On one hand, the watershed development approach has been consolidated on the principle of integration and co-ordination, but on the other hand, the people's participation has not gained the expected momentum.

4. Phase-IV. Watershed Development Department(WDD): (2000 onwards)

Soil and water conservation, a pre-requisite for the farming sector to flourish, started with a massive field bunding programme, which has undergone a horizontal and vertical transformation up to year 2000 and Karnataka State Dept of Agriculture (KSDA) was the nodal agency. The Watershed Development Department was started during the year 2000 to make the watershed development a more professional and to implement the watershed programmes on more co-ordinated and in an integrated manner. The concept of peoples participation was refined, redefined and strengthened by way of restructuring the guidelines for implementation of NWDPRA (Jana sahabhagithva 2002) and Area Development Programmes like DPAP / DDP / IWDP (Hariyali 2003) by GoI. Even though initially all the watershed development projects implemented by KSDA were transferred to WDD, the projects of ADP were also transferred to WDD, later in the year 2005.

Creation of Watershed Development Department in Karnataka:

In the background of growing population in the State with a consequent demand for ever increasing food, it was strongly felt for bringing large tracts of rain fed / dry land (nearly 79%) under watershed system to increase their productivity. Different Departments like the Agriculture, which was implementing different soil and water conservation programmes and watershed projects, the RD&PR implementing various rural development programmes having, watershed concept as a component through Panchayath Raj Institutions, the Horticulture, Forest, and Animal Husbandry Departments were also carrying out various programmes in the watersheds. In addition, there is also a component of non-land based activities in watershed development and participation of NGOs and village committees. Therefore the GoK considered various aspects including commitment given in the context of an externally aided project and decided that better co-ordination in planning, implementation and supervision

would be achieved by setting up a separate department of watershed with multi disciplinary teams. With this prime aim, to develop watershed in an integrated and co-ordinated manner, the Government of Karnataka created Watershed Development Department vide order **AHD: 206:AML.94 (Vol-III) dated 31.12.1999** and it came into effect from **1.4.2000**. This Department is given the responsibility of coordinating the formulation, planning and execution of different activities of agriculture, soil conservation, afforestation, horticulture, livestock, pasture development and income generation activities etc., in an integrated manner on the watershed concept.

CHAPTER-II

TREATMENT INTERVENTIONS

Social mobilization and capacity building:

People's participation and community organization is mandatory for Watershed Development Programmes

Participatory watershed Treatment:

People's participation is the key to effective and sustainable watershed development programmes. This will not only ensure long term sustainability of the watershed development process through ownership of the programmes but also empower the watershed communities to initiate activities on their own and take optimal advantage of other ongoing developmental programmes. The participatory approach fosters implementation ability at the local level and create community infrastructure for micro-watershed projects.

One of the main objectives of watershed programmes in Karnataka is to strengthen the capacities of communities for participatory involvement in planning, implementation, social and environmental management, and maintenance of assets arising from local level development programmes. In watershed programmes, social mobilization process involves the following activities.

1. **Awareness creation:** The various awareness building activities like house visits, group meetings, grama sabhas, street plays, jathas, video-shows, wall paintings, animal health camps, hasiru habba, PRA excercises etc. are conducted at the village level with the assistance of NGOs.

2. **Entry point activities:** To meet the desire and felt needs of the community and to develop rapport with people, some of the infrastructural activities like drinking water and sanitation systems, community buildings, school buildings, cattle troughs etc. were taken up to initiate people participation in watershed development.

3. **Community Based Organizations (CBOs):** Village organizations like Self Help Groups (SHG), User Groups (UGs) and Watershed Committees (WC) are formed at each micro-watershed. The Poor and vulnerable people are organized into SHGs and land owning farmers are organized in to UGs. The watershed committee mainly consists of representatives of SHGs, UGs, VCs, and PRIs. Watershed Development Department gets support from NGOs for community organization and Capacity Building.

Soil and water Conservation measures

The most serious forms of soil erosion in Karnataka are sheet, rill and gully erosion. The estimated annual soil loss is 4 to 10, 14 to 65, 30 to 40 tons per ha. in red, black and lateritic soils, respectively. Such soil loss apart from removing fertile top soil, reduce the rooting depth and adversely affect moisture storage and thereby the crop yields. The large quantity of eroded materials deposited in tanks, reservoirs, stream and river beds and reduce their storage and carrying capacities. Soil erosion depends on various factors like rainfall, soil type, vegetation and land use. Mechanical as well as vegetative measures are used for soil and water conservation. The important principles that are kept in view in planning erosion control measures are:



1. Time of concentration of run off water should be increased to allow maximum absorption.
2. Long slopes should be divided into several short ones to reduce the velocity of run off water to non-erosive value.
3. Rill formation should be prevented
4. Measures must be simple and have relatively low cost for easy adoption.

Land Management Practices

1. Arable land treatment



1.1 Contour Bunds: These are trapezoidal earthen or loose-boulder embankments

Constructed on contour. These bunds intercept runoff and hold the water for subsequent absorption and thereby conserve soil and moisture.

Waste weirs are normally provided by using loose stones properly embedded in soil to avoid scouring / under cutting and to drain the excess water accumulated against bund.

1.2 Field bunds: These are the earthen embankments constructed along the boundary lines of the individual farmers plot to conserve the soil and moisture in his plot itself

1.3 Trench-cum-pit method of bunding: It is a newly evolved bunding type, where in the earthen embankments constructed with a 5 mtr length x 1 mtr width x 0.6 mtr depth trenches and by leaving 0.6 mtr in between trenches. More runoff water can be stored, thereby more water infiltrates into the soil and provides moisture for more periods to the development of vegetation.



1.4 Contour strip - Contour strip formed in the areas where rainfall is less, gentle slope with less infiltration. This is to increase the moisture infiltration rate. Within the two contour strips small size bunds with bund former are also made.

1.5 Boulder bunds: This is a bund across the slope constructed by using locally available stones / boulders in the sand mixed soils and in the shallow soils. This is an alternative to the contour bund, where there is no enough soil to form bunds.

1.6 Graded bunds: These are trapezoidal earthen embankments constructed on grade across the major slope. These bunds are taken up in areas receiving annual rainfall of more than 750 mm, where runoff is high and surplussing is essential.

1.7 Vegetative bund/ Vegetative check - A live vegetative barrier on the contours is made which will decrease the velocity of rain water in turn soil erosion is controlled. These checks could also be formed in between the contour bunds also.

1.8 Water ways – These are formed along the slope for safe disposal of excess rain water from cultivable areas to nalas. Grass is also grown in the water ways to avoid further scouring

1.9 Farm ponds: Farm ponds are opened across the water ways by digging the soil. The excess rain water is harvested and the harvested water is used for various activities like giving protective irrigation to vegetables and orchards including drinking water to animals and birds.



INTERBUND MANAGEMENT PRACTICES

- Fall ploughing after each harvest.
- Land leveling to avoid local stagnation
- Vegetative barriers - Khus/Subabul/Dicanthium across slope at 10 to 15m interval
- Deep tillage
- Adoption of ridges and furrows, Beds across slope
- Small bund (0.18 sq. m) or (0.09 Sq.m) at 10m / 15m interval across slope
- Vertical mulching

2. Non-Arable Land Treatment

Treatment of non-arable land has been inevitable to reduce the runoff and to create water storage at field level. They help to distribute moisture uniformly on sloping land so that natural vegetation grows successfully and restores the bio-diversity.

2.1 Contour Trench / 'V' ditches: These are trenches / V-ditches dug on contour in non-arable lands of more than 3% slope to hold run off for conservation and reducing erosion. They are established for development of trees and grass species and are adoptable in areas with annual rainfall of up to 950 mm.

2.2 Pits with Crescent - shaped bunds: These consists of staggered rows of pits with crescent-shaped bunds for planting trees and are adoptable in non-arable lands having less than 3% slope in areas with annual rainfall of less than 950 mm.

2.3 Catch pits: These are large pits dug at rill points and in waterways to trap runoff water. They are adoptable in hilly lands with rock outcrops.

2.4 Continued contour trenches: Trenches are opened at a distance of 5 to 10 meters with 0.45 meter depth and 0.6 meters width in the areas where annual rainfall is less than 750 mm. The rain water is collected in the trenches and then the plants could be planted.

2.5 Staggered contour trenches: These are opened where there is undulating soil slope with humps.

2.6 Graded contour trenches: These trenches are made in the black soil areas where rainfall is more than 750 mm, for safe disposal of excess water and forest plants are planted.

2.7 Water recharging pit: The pit is opened in the uncultivable area in the direction of diversion channels / water ways or near by areas where there is flat lands. Dry stone pitching on the three sides of up stream side also be done.

2.8 Diversion channel: Diversion channel is formed to avoid the rain water that flows from pasture lands, hills areas, and forest areas into the cultivable area. A drain across the slope is opened for safe disposal of water.

3. Drainage line treatment

3.1 Upper reaches treatment

3.1.1 Vegetative checks: Sod-forming grasses like *Cynodon dactylon*, *Digitaria* and *Dicanthium* are planted. In some cases trees and shrubs such as *Ipomoea cornea*, *Vitex nigundo*, agave, *Saccharum munja* and bamboo are also recommended.

3.1.2 Vegetative filter strips: These are made to reduce the velocity of rain water coming from hills, forest area across the slope at intercepting areas where cultivable and uncultivable areas joins. Once the vegetative strips are grown fully it will act as a barrier to check the flow of water from slopes and soil erosion is controlled. The different types of filter strips are sod strips, sodded earthen strips and shrub checks. The locally available Agaves, lavancha, Jatropia, Pongamia etc could be used as vegetative checks.



3.1.3 Boulder checks: These are porous checks across the nala constructed using boulders to check water velocity and to arrest silt.

3.1.4 Rubble Checks: Rubble check is constructed where the gully width is upto 10 meter and depth is 1 to 3 meters with a vertical interval of 2-2.5 meters. The catchments area considered is from 8 to 15 hectares. This should also serve to control soil erosion and silt flow. Agaves row could also be planted on up stream and down stream side at a distance of 0.3 meters.

3.1.5 Brush wood checks: These are porous checks constructed across the gully with wooden pegs and brush wood and are adoptable in all areas.

3.1.6 Gabions: These are dams made of wire-woven baskets filled with stones placed in trench of suitable size across steep-sloped gullies to trap erosion debris during rains. They are adoptable in all areas of high slopes and high rainfall.

3.1.7 Water recharge pit: Pit is opened in the soils where there is less water infiltration rate. The pit is opened in the gentle slope nalas / gullies where the upper reaches are already treated and so there is less scope of siltation. These should be opened preferably adjacent to open walls or bore wells.

3.1.8 sunken ponds: The rain water that would have flown in gullies will be sorted so that the moisture percentage around the cropped area is increased. The excavated soil is put as bund so that water storage is increased.

3.2 Middle reaches treatment:

3.2.1 Dry stone checks/ Rock filled dam: These structures are constructed where there is no necessity of impounding more water and to avoid further scouring. They are constructed at the points where gullies join and gullies of serious nature. The availability of stones should be within 40kms distance.

3.2.2 Ravine Reclamation structure (RRS): is a masonry structure consisting of a body wall, apron and header. The banks are protected by stone revetment to further scouring. They are constructed to control head movement of gullies, avoid further widening and deepening ravine. Reduce sedimentation of tanks/reservoirs to provide protective irrigation, drinking water for the cattle and wild life, increase moisture regime and recharge underground water table. They are constructed in ravines with depth of 2.5 to 3.5m width 8 to 15m and catchments area 15 - 25 ha.

3.3 Lower reaches treatment:

3.3.1 Check dams: These are stone masonry structures constructed across deep nala with the objective of controlling runoff water, reducing sedimentation of tanks and reservoirs, providing protective irrigation, drinking water for the cattle and wild life and to recharge underground water table.

3.3.2 Vented dam: Cement masonry work taken up in the high rainfall areas. The vents are provided to allow the water flow during the rainy season and store water after the decrease in rainfall. Wooden Planks are provided to close the vents. The stored water is used for irrigation.

3.3.3 Nala bunds: This structure consists of homogenous earthen embankment constructed across the nalas and valleys in arable and non-arable lands to store run-off for recharging ground water and make water available for social and agricultural use at surface level.

3.3.4 Percolation tank: This is also Nala bund but with stone, cement masonry outlet to drain the excess water. This is opted where there is less scope for cut-out let.

Alternative Land use systems

Alternative land use systems like silvi-pasture, horti-silvi-pasture, agro-forestry and agri-horticulture not only serve the purpose of conserving soil and moisture and arresting land degradation but also meet other demands of the rural community including off - season employment. These systems improve vegetative cover in the areas, bring about favorable changes in the microclimate, reduce run off and improve soil moisture and soil health. They could be used to help generate raw materials for various cottage industries apart from meeting the basic needs of the community.

FORESTRY

Upto 20% of the project fund is usually earmarked for agro-forestry & afforestation by planting multi purpose tree species including models like block plantation & community land afforestation. Emphasis is given for planting of multi purpose tree species preferred by farmers for fuel, fodder, fruit, manure & other uses. Bio-fuel trees like pongamia & neem are being encouraged. The residual oil cake can also be used as good bio-fertilizer.

AGRO-FORESTRY: It is the system of growing multi purpose woody perennials along with annual agricultural crops. The multi purpose trees are planted on field boundaries and along the inner bunds, preferably those running east-west to avoid shading. A density of 100 plants per ha. is maintained. The multi purpose woody perennials selected should have economic value in terms of fodder, fruit, green manure, fuel, fiber and timber. The perennials should be maintained by lopping the side branches to reduce competition with companion crops.

BLOCK PLANTATION (Afforestation & Reforestation): Raising of forest tree plantations on lands which were not covered with forest and were reduced to scrub due to biotic interference. This may be undertaken to

1. Conserve Soil & Moisture in denuded barren lands, Ravines & other waste lands ,to meet the local demands for economic utilization of land
2. Landscape for recreation and conserving flora & fauna.

Multi purpose Tree Species

I. Fast Growing Species	II. Fruit trees	III. Timber trees
1. Acacia sp 2. Ailanthus excelsa 3. Albizo lebbek 4. Azadirachta indica 5. Cassuarina equisetefolia 6. Dalbergia sisso 7. Gliricidia sepium 8. Grewilia robusta	1. Anacardium occidentale 2. Annona species 3. Artocarpus heterophyllus 4. Emblica officinalis 5. Tamarindus indica 6. Ziziphus species 7. Sapindus species	1. Tectona grandis 2. Dalbergia sisso 3. Madhuca species 4. Pterocarpus species 5. Terminalia species 6.. Bamboos

HORTICULTURE

Dryland Horticulture: Horticulture Sector plays an important role in the development of watershed area by the concept of dry land horticulture. The growing of suitable perennial dry land horticultural crops not only brings soil and water conservation insitu, but also makes best use of available moisture. This creates an eco-friendly environment in addition with generation of rural employment opportunities. The planting materials of suitable horticultural crops like fruit, flowers and perennial Vegetable crops are supplied and planted in the identified beneficiaries' lands. The beneficiary would start getting income from these crops after 2-6 years of planting depending upon the crop.

Agri-Horticulture: This is the practice of cultivating perennial fruit crops along with annual field crops and is particularly useful in marginal and sub-marginal farmers. The fruit species are to be planted in the water-receiving areas of zing terraces, on boundary bunds & on the inner bunds with wide spacing so as to allow cultivation of annual agricultural crops.

These inter crops provide returns to farmers in pre-initial years, while perennial horticultural crops start yielding at later stages.

Horti-Silvi-Pasture system: This constitutes the practice of growing forest and horticulture tree species along the forage crops and is adaptable in all marginal and sub-marginal lands of both private and common lands. The selected tree species should have fruit/fodder/fuel/timber value based on the individual/community needs. High density planting of a mixture of species is done with appropriate planting techniques. The inter space is covered with forage legumes and grasses, preferably shade loving. The crops suitable for rainfed orchard should be deep rooted, perennial in nature, hardy and tolerant to vagaries of monsoon and adverse climatic condition and should have low water requirement to produce maximum bio-mass.

Home stead/School garden and vegetable minikit programs:

It is one of the important programme, which is being implemented in watershed area. Vegetable minikit and suitable fruit crop saplings are distributed to all the section of farmers. The beneficiary's family members get nutritive food at least by consuming the produce of this minikit throughout the year. They also earn small portion of income by selling vegetables and fruits.

Bund sowing of Horticulture Seeds:

The suitable horticulture crop seeds such as vegetable and fruit seeds are sown all along the bunds under this programme. This practice strengthens the bunds against rain and wind associated erosion. It not only brings additional income by selling the produce but also improves the nutrition status of the community by consuming the fresh produce in their daily diet.

Under Production System:

A new concept of Production technology of Ultra High Density Orchard in Mango, Guava, Jambulina, Tamarind, Custard Apple & Cashew has been introduced to adopt in farmers field based on technical feasibility.

Drum irrigation & Water Bag kit installation programme has been undertaken to increase the survival of the Horticultural Plants during the scarcity of water.

During 2013-14 an area of 50000 hectare has been treated with various horticulture crops at the cost of Rs. 4500/- lakhs under horticulture sector.

LIVESTOCK

Livestock plays an important role in the uplift of socio-economic status of farmers and provides sustainable livelihoods to rural poor. Livestock has contributed 26% to the GDP of Agriculture during 2009-10. Livestock converts grains, hay, straw, greens and crop and agro based residues into valuable food products like milk, meat and eggs. Rural development in Karnataka is largely supported by livestock and is closely integrated with the existing farming system to augment food production and provides nutritional security to all households. The other important contributions from livestock are Draft power which is used for transport, tilling and ploughing, Farmyard manure which helps in nutrient recycle and organic farming. Wool, skin, hide and leather which are used in manufacture of various products that provide for a better living.

The demand for livestock produce is ever on the increase as it has come to the rescue of farmers during crop failures, droughts and unpredictable market rates of agricultural produce. Dairy farming is so popular because marketing of milk is being done by organized sectors. Demand for mutton has never seen a low. Therefore small ruminants such as sheep and goats are a ready source of income to farmers.

In view of the above, certain livestock activities have been incorporated in Watershed Development Department.

Fodder Development:

More than 80% of the farmers feed their livestock with agri based crop residues. Farmers have diversified their cropping pattern from food crops to commercial crops leading to decreased biomass production. Production and productivity of livestock depends on availability of quality fodder in adequate quantities. Non Availability of good quality fodder has resulted in low productivity among livestock. Cultivation of perennial fodder crops and annual fodder crops requires timely critical input supplies like good quality seeds, root slips, fertilizers good Agronomy practices and good Post harvest practices and Extension services.

The focus in the Watershed approach is to provide green cover to the soil surface to ward off erosion and to reduce the rate of run off. Wherever possible, the green cover is suggested to be done with fodder grasses so that it will serve as soil and water conservation method and also provide fodder to the animals. This is achieved by :

- Growing fodder on bunds.
- Growing fodder in the border of Agri crops so that aerable land does not get underutilized.
- And also growing fodder in small patches of land where there is assured irrigation.

There is an acute shortage of fodder to an extent of 40%. Therefore the available fodder must be put to effective use. Fodder that has been established in fields, bunds and on common land should be allowed to take root and replenish. Allowing livestock to graze openly and freely will not only lead to overgrazing but the trampling of pastures will affect its rejuvenation. The watershed approach to curb this problem is addressed by educating the farmers to maintain an optimum number of productive and useful animals and to go in for farm mechanizations. This will reduce the dependency on draft power.

The other activities taken up in watershed to avoid over grazing is to encourage Stall feeding of animals

- Model sheep sheds and cattle sheds and mangers are constructed on a demonstrative pattern.
- Enrichment of coarse fodder to make it more palatable and nutritious.
- Chaffing of fodder which will reduce wastage to the extent of 40%
- Preparation of silage when greens are available in plenty so that it can be made available during lean periods.

Animal Health Camps:

Conducting of Animal health Camps improves livestock health, fertility in animals' thereby increasing productivity. It also decreases untimely deaths and loss due to disease outbreaks. Important Demonstrations will be organized in these camps.

Income Generation Activities:

More than 60% of, Small and Marginal farmers, landless laborers opt for livestock activities for their livelihoods; therefore the responsibility of the sector to fulfill this demand has increased. The livestock activities are:

1. Cross bred cows rearing
2. Buffalo rearing
3. Sheep and goat rearing
4. Piggery
5. Poultry

Capacity Building programmes:

To create awareness regarding better management practices among livestock rearers and SHGs, following trainings are conducted.

1. Village based trainings (VBTs) to Livestock rearers
2. Village based trainings (VBTs) to SHGs
3. Exposure visits to Livestock farmers and SHG members.

**FISHERIES**

In Watershed Development Department certain constructed Water Harvesting Structures, the water storage is so good that they have become long seasonal and perennial storage water bodies. Such storage structures are ideal for taking up fish culture. The Utilization of stored water for fish culture, it will improve the quality of water and making it more fertile (due to manuring). The activity results in better utilization of available resources and nutrients for production of animal protein without reducing the quantity of stored water. So, it is wise to take up fish culture in the water harvesting structures to generate additional protein food and thereby extra income to the farmers.

Rs.35.00 lakhs budget provision is available under this programme for the year 2013-14 with the target of 1696 farmers training and development of fisheries in 1696 water harvesting structures. Rs. 25.71 lakhs spent up to end of March-2014.

CHAPTER-III**Different Watershed Development Programmes / Projects in Karnataka: Components and Progress****1. Development of saline and alkaline waterlogged areas (Pilot Project):**

Fertile and sustainable soils are very important to maintain high productivity levels. However due to excess irrigation and over exploitation of irrigation, the soils become prone to alkalinity, salinity and water logging resulting in poor productivity and such lands slowly become uncultivable.

To reclaim such lands on highly scientific way, Government of India and the State Government has sanctioned this new project at a project of Rs. 499.51 lakhs to reclaim 925 ha during 2007-08. This project is to be implemented by sharing the project cost at 60:20:20 ratio

among Government of India, State Government and the beneficiaries. Apart from this project also involves opening of 8.5 KM main drain at a cost of Rs. 93.13 lakhs fully funded by State Government.

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Reclamation of Saline and Alkaline Waterlogged Areas Started in the year - 2007-08
b)	Budget head	2402-00-103-0-04
c)	If plan, the Central and State share is	60:20:20 – Center: State: Beneficiary
d)	Objective of the Programme	1. Enhancing agriculture productivity by draining out salts through sub surface drainage. 2. To improve economic status of farmers
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	It is programmed to reclaim problematic soils in command areas. There is no direct benefit to farmers.
f)	Finance (Rs. In lakhs)	This scheme is not being implemented in 2013-14.

Expenditure: (Rs.In lakhs)

RE 2011-12		RE 2012-13		RE 2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
104.48	104.48	84.57	144.33 (Expenditure includes O.B and farmers share)	-	-

Physical Achievements :(Units – in Hectares)

2011-12		2012-13		2013-14	
Target	Target	Target	Achievement	Target	Achievement
303	173	260	280	-	-

This scheme is implemented as State sector scheme through District and Taluka Watershed Development Officers. Due to waterlogged conditions in the project area, highly sophisticated machineries can not to be used all the time to execute the work. Hence only 2-3 months are congenial to work in a year. Hence the project implementation has slowed down.

Evaluation studies:

Impact Mid-term assessment has been conducted and the report has been submitted to Government of India.

2. Campaign for check dams (Construction of Water Harvesting Structures)

Under this scheme, the funds will be utilised to take up water harvesting and ground water recharge structures such as Check Dam, Nala Bund, Vented Dams and Percolation Tanks there by providing water at critical condition to agriculture crops and drinking water to animals and also for community purpose.

In Karnataka the ground water is being used to a larger extent for agricultural crops through dug wells and bore wells. As a result, the ground water level is depleting to a larger extent day by day. This has resulted in dried up open wells and bore wells, placing the farming community in trouble. As a new initiative, the State Government has launched a scheme through Watershed Development Department for recharge of underground water in Bagalkote, Bidar, Bijapur, Koppal, Bellary, Kolar, Belgaum, Haveri & Gadag Districts. During 2013-14 Rs.405.00 lakhs has been provided in the annual budget.

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Campaigning for check dams_(Construction of Water Harvesting Structures) Started in the year - 2009-10
b)	Budget head	2402-00-800-0-08
c)	If plan, the Central and State share is	100% State funds
d)	Objectives of the Programme	1. Recharge of ground water for enhanced agriculture productivity. 2. To increase water levels in Bore wells and Open wells 3. Greening of dry lands
e)	Estimated benefit and number of estimated beneficiaries from the project (measurable out put at the end of year)	Project is implemented on area development approach and it is not beneficiary oriented. It is estimated to Construct 162 Structures annually Measurable out puts are increase in ground water recharge and employment generation
f)	Financing (Rs. in lakhs)	Rs. 405.00 Lakhs

Expenditure (Rs. In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
300.00	300.00	300.00	300.00	405.00	405.00

Physical

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
120	128	120	216	162	165

It is a State sector scheme implemented through District and Taluka Watershed Development Officers. There are no constraints for implementation of the Project.

Evaluation studies:

It is proposed to take up evaluation during 2014-15

3. Rastriya Krishi Vikas Yojana (River Valley Project (RVP) 2013-14:

In order to preserve the wealth of the surface land, natural resources like soil and water and to prevent premature siltation of reservoirs CSS of the river valley project scheme was initiated in Karnataka in the catchments of Tungabhadra, Nizamsagar and Nagarjunasagar. Due to insufficient funds provided under Macro Management of Agriculture for RVP project, the planned activities could not be completed. Hence Rs.2500 lakhs has been allocated under RKVY for completion of planned activities in the 24 ongoing RVP watersheds.

Details of the project are as follows:

a)	Name of the Scheme and year of introduction	Completion of Balance programme of River Valley Project by funding through RKVY. Started in the year – 2012-13
b)	Budget head	2402-00-800-0-06
c)	If plan, the Central	100% Central Assistance.
d)	Objectives of the Project	1. Prevention of pre-mature siltation of reservoirs. 2.Enhancement of agriculture productivity 3. Prevention of land degradation by adoption of appropriate soil and water conservation measures.
e)	Estimated benefit and number of estimated beneficiaries from the programme/project/Scheme (measurable out put at the end of year)	Project is implemented on area development approach and it is not beneficiary oriented. It is programmed to develop 69697 hectares during 2013-14 Measurable out puts are increase in productivity, ground water recharge, employment generation and reduction in sediment production.
f)	Financing (Rs. In Lakh)	Rs.2500.00 Lakhs

Expenditure (Rs. In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
-	-	1000.00	1500.00	2500.00	1617.34

Physical Achievements :(Units – in Hectares)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
-	-	25000 (Hectare)	16661 (Hectare)	69697 (Hectare)	45218 (Hectare)
-	-	1880 (Nos)	1612 (Nos)		

This is a centrally sponsored scheme implemented in the State as district sector scheme. Watershed sub committees are formed at Grampanchayat level. Respective Gramapanchayat President will be the President for this watershed sub committee also. Grants released from Center will be released to the new bank accounts of the Grama panchayath subcommittees for implementation of the project as per approved action plans.

4. Sujala-II Prime Minister's Relief Package-Participatory Watershed Project (RIDF):

During 2008-09 under Prime Minister's Relief Packagae "Sujala-II project PMRP (RIDF)" distressed Districts is a Community driven Participatory Watershed Development Programme, being implemented Six District of the State namely, Belgaum, Chitradurga, Chikkamagalur, Hassan, Kodagu, Shimoga In 41 Taluk of 659 villages coming 59 Sub watersheds with an estimated coverage area 1.50 lakhs Ha

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Sujala-II Prime Minister's Relief Package-Participatory watershed project (RIDF) Started in the year : 2008-2009
b)	Budget head	2402-00-103-0-05 (plan)
c)	If plan, the Central and State share is	State Scheme 80%-NABARD loan 20%-State fund,
d)	Objective of the Programme	Implementation of participatory watershed development programme in suicide prone six Districts of the State viz., Hassan, Chikkamagalur, Kodagu, Shimoga, Chithradurga and Belgaum with following objectives. 1) To improve the productive potential of the selected watersheds, 2) To recharge ground water and improve soil moisture retention, 3) To enhance agriculture production, 4) To reduce poverty of the people living in the watersheds
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	Complete details in respect of number of beneficiaries will be given at the end of the project.
f)	Financing (Rs. In Lakhs)	Rs.4664.00 Lakhs

Expenditure: (Rs. In lakhs)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
3326.73	2977.46	3581.99	2500.14	3442.22	3309.88

Physical Achievement: (Unit Ha)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
20650	23684	26378	20421	38867	26996

The Sujala-II Project PMRP (RIDF) for distressed districts is a Community driven Participatory Watershed Development programme, being implemented in six districts of the State.

This Project was started during 2008-09. During the first year preliminary works like NGO selection, Delineation of watersheds, Baseline survey, Community Based Organization (CBOs) formation (SHG,CIG,EC), Awareness creation through wall paintings, Street plays etc., Were carried out. During Second year Training and Capacity Building, Preparation of Sujala Watrshed Action Plan (SWAP) carried out. After approval of SWAP by CEO Zilla panchayat, Land treatment activities such as Forestry planting, Horticulture planting, Soil & Water conservation, Livestock activities are taken up. During third and fourth year implementation of Land based with Livestock activities continued along Entrepreneur Awareness Programme (EAP) for Income Generation Activities carried out. During Fifth year implementation of Land based with Livestock activities continued along with Skill training for Income Generation Activities and for Livestock development Village Based Trainings were taken up. Exposure visit were arranged for Beneficiaries. Revolving fund of Rupees 50,000/- for 2331 SHGs were given. In this connection Bank Linkage is also in progress, Livestock activities along with skill activities are being implemented by the Beneficiaries.

As per the project plan at the end 2013-14 (December-2013) financial achievements was to be 180.00 crores. But from the Government only 139.81 crores funds released. The Project was end on 31.12.2013.

Evaluation studies:

Sujala II (RIDF) PMRP scheme has been entrusted to ISRO Antrix corporation, Bangalore for concurrent Monitoring and Evaluation. Because of this system transparency and effective implementation of project is being ensured.

5. Fisheries in farm pond and other water harvesting structures;

Under this programme, the budget will be utilised to harness the availability of water in the farm ponds and other water harvesting structures for production of protein rich fish food.

Details of the scheme are as follows:

a)	Name of the Scheme and year of introduction	Fisheries in farm pond and other water harvesting structures Started in the year - 2008-09
b)	Budget head	2402-00-800-0-05 (Plan)
c)	If plan, the Central and State share is	100% State funds
d)	Objectives of the Programme	1. To promote fish culture in farm ponds and sustainable rain water harvesting structures. 2. Self employment generation.
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	No. of beneficiaries : 1696 2013-14
f)	Financing (Rs. in Lakhs)	Rs.35.00 Lakhs

Expenditure : (Rs. In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
30.25	29.45	30.06	25.98	35.00	25.71

Physical Achievements :

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
To train 3125 farmers and to develop fish culture activities in 3065 water harvesting structures.	2797 farmers trained 2575 Rain Water Harvesting Structures developed	To train 2380 farmers and to develop fish culture activities in 2380 water harvesting structures.	2380 farmers trained 2166 Rain Water Harvesting Structures developed	To train 1696 farmers and to develop fish culture activities in 1696 water harvesting structures.	1696 farmers trained 1696 Rain Water Harvesting Structures developed

6 Special Component Plan

The project has been started as a new project during the year 2011-12 under Special Development Plan. The Project covers 114 most back ward, more back ward and back ward taluks as identified in Dr.Nanjundappa Report. Apart from this it also covers 59 non-SDP taluks. It is programmed to uplift Scheduled caste communities of the state by implementing

soil and water conservation activities. These works will help the Scheduled caste farmers to increase productivity of crops in their lands apart from recharging ground water.

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Special Component Plan Started in the year – 2011-12
b)	Budget head	2402-00-789-00-0-01/135/422
c)	If plan, the Central and State share is	100% State funds
d)	Objectives of the Programme	1. To improve the land capabilities of the Scheduled caste farmers for better productivity of crops. 2. To improve Recharge of underground water.
e)	Estimated benefit and number of estimated beneficiaries from the project (measurable out put at the end of year)	In the Special Component Programme soil and water conservation activities will be taken up in the lands of scheduled caste farmers. Improvement in the economic status of Scheduled caste people, Improvement in crop productivity, Improvement in recharge of ground water.
f)	Financial (Rs. In Lakhs)	This scheme is not being implemented in 2013-14.

Expenditure (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
2043.40	2036.25	485.61	484.04	-	-

Physical Achievements :(Units – in Hectares)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
24084	5917	4046	4421	-	-

Evaluation studies:

Evaluation conducted for 2009-10 schemes during 2010-11.

7. Tribal Sub Plan

The project has been started as a new project during the year 2011-12 under Special Development Plan. The Project covers 114 most back ward, more back ward and back ward taluks as identified in Dr.Nanjundappa Report. Apart from this it also covers NON-SDP taluks. It is programmed to uplift Scheduled tribe communities of the state by implementing soil and water conservation activities. These works will help the Scheduled tribe farmers to increase productivity of crops in their lands apart from recharging ground water.

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Tribal sub Plan Started in the year –2011-12
b)	Budget head	2402-00-796-00-0-01/136/423
c)	If plan, the Central and State share is	100% State fund
d)	Objectives of the Programme	1. To improve economic status of the Scheduled tribe caste people by encouraging IGA activities. 2. To improve the land capabilities of the Scheduled tribe farmers for better productivity of crops. 3. To improve Recharge of underground water.
e)	Estimated benefit and number of estimated beneficiaries from the project (measurable out put at the end of year)	In Tribal Sub Plan soil and water conservation activities will be taken up in the lands of Scheduled tribe farmers. Improvement in the economic status of Scheduled tribe people, Improvement in crop productivity, Improvement in recharge of ground water.
f)	Financial (Rs. In lakhs)	This scheme is not being implemented in 2013-14.

Expenditure (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
1028.35	1027.69	511.91	510.10	-	-

Physical Achievements :(Unit– in Hectares)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
9184	3044	4287	4458	-	-

It is a State sector scheme implemented through District and Taluka Watershed Development Officers. There are no constraints for implementation of the Project.

Evaluation studies:

Evaluation conducted for 2009-10 schemes during 2010-11

8.JALASIRI - SDP (Construction of Water Harvesting Structures)

Jalasiri Programme under Special Development Plan is a new scheme introduced by Government of Karnataka during the year 2010-11, to increase agricultural production in 114 backward Talukas. In this scheme construction of water harvesting structures and putting bunds / trench cum bunds in the fields of 114 backward, more backward and most backward taluks which have been classified in Dr.D.M. Nanjundappa report. During 2013-14 it is proposed to take up water harvesting structures as well as trench cum bunds / field bunds.

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	JALASIRI - SDP (Construction of Water Harvesting Structures) Started in the year - 2010-11
b)	Budget head	2402-00-102-0-27
c)	If plan, the Central and State share is	100% State fund
d)	Objective of the Programme	<ul style="list-style-type: none"> • Rain water harvesting • Ground water recharge • Drought proofing • Employment to agriculture labours. • Productive irrigation to crops under critical conditions • Drinking water facilities to animals • Increase in agriculture production
e)	Benefits supposed to be accrued and number of beneficiaries from the programme (measurable output at the end of year)	<ul style="list-style-type: none"> • increase in production by 10 - 15% • increase in the ground water level • bore well and open well recharge • 773 estimated beneficiaries
f)	Financial (Rs. In lakhs)	Rs. 2311.00 Lakhs

Expenditure: (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
2700.00	2698.63	4000.00	3995.17	2311.00	2309.91

Physical Achievements :(Units – in Structures)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
1350	1567	1333	1302	773	946

9 Integrated Watershed Management Programme (IWMP):

a)	Name of the Scheme and year of introduction	Integrated Watershed Management Programme (IWMP) Started in the year - 2009-10
b)	Budget head	2402-00-102-0-30
c)	If plan, the Central and State share is	In the ratio of 90:10 central and state share (Rs. 12000.00 unit cost/ha in plain areas, Rs. 15000.00 unit cost/ha in desert / hilly areas)
d)	Objective of the Programme	<ul style="list-style-type: none"> • To conserve soil, moisture and nutrients, • To enhance recharge of underground water and agricultural productivity, • To improve vegetation by afforestation and dry land horticulture,

		<ul style="list-style-type: none"> To increase availability of fodder and fuel, To form and strengthening of community based organizations, providing livelihood activities for the assets less persons. To encourage live stock production, production systems and micro enterprises i.e., income generating activities.
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	Entry point activities are implemented in the project area. It helps in the development of good rapport with local community members. It also helps in soil, moisture and nutrients conservation and enhanced the recharge of underground water. Awareness programmes were also planned in the project area regarding the project. There are about 11960 community based organizations were formed (which includes SHGs, UGs and ECs). All the community based organizations were given with the basic trainings. Soil conservation, forest, horticulture, animal husbandry, livelihood and production system activities are being implemented under the project.
f)	Financial (Rs. In lakhs)	Rs. 71111.1111 Lakhs.

Expenditure: (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
16124.15	14205.24	47708.08	41969.78	6353188	51003.20

Note: Release & Expenditure includes Opening Balance

Physical Achievements :(Units – in Hectares))

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
180833	87805	192308	311056	396825	386441

Integrated Watershed Management Programme was started during the year 2009-10 in 29 districts and 164 taluks of state. There are about 493 projects are running in the state. During 2014-15 proposal of 78 projects have been submitted to DoLR. For effective implementation of these projects, staffs/officers at field level have to be appointed immediately and permanent office space at taluk and district level are essential to reach the project benefits effectively to the beneficiaries.

Three external agencies have been selected as per the provisions of the KTTP Act, for undertaking Monitoring, Evaluation, Learning and Documentation of the Batch-I and Batch-II projects under Integrated Watershed Management Programme (IWMP) during 2010-11. They are M/s Consulting Engineering Services India (Pvt.) Ltd., Bangalore, M/s Karnataka State Council for Science and Technology, Bangalore and M/s Remote Sensing Instruments, Hyderabad. Agreements have been signed between the Agencies and the CEO, SLNA during

January 2011. A formal tender have been floated for appointing external agencies (Monitoring, Evaluation, Learning and Documentation) for batch-3, 4 and 5 projects.

The Agencies have been allotted work Revenue Division-wise. M/s CES, Bangalore has been allotted Bangalore and Mysore revenue divisions, M/s KSCST, Bangalore has been allotted Belgaum revenue division and M/s RSI, Hyderabad has been allotted Gulbarga division.

10 Programmes under Rastriva Krishi Vikasa Yojana

(a) Rainfed Area Development Programme(RADP)

Integrated farming systems have to be adopted for overall development of rainfed agriculture. The economic conditions of the farmers can be improved by adopting activities like agriculture, agroforestry, horticulture, livestock, fisheries, apiculture etc., as per the land capability, climate and local situations.

The GoI has sanctioned the new scheme RADP as a sub scheme under RKVY during the year 2013-14. An amount of Rs. 2000000 lakhs has been approved for this programme. The State level sanctioning committee has accorded approval to this scheme to implement under Watershed Development Department in 23 districts of the State.

a)	Name of the Scheme and year of introduction	Rainfed Area Development Programme (RADP) Started in the year‘ 2011-12
b)	Budget head	2402-00-800-0-06(plan)
c)	If plan,the Central and State share is	100% Central plan
d)	Objectives of the Programme	The objectives of the programme are; a) Increasing agricultural productivity of rainfed areas in a sustainable manner by adopting appropriate farming system based approaches. b) To minimize the adverse impact of possible crop failure due to drought, flood or un-even rainfall distribution through diversified and composite farming systems. c) Restoration of confidence in rainfed agriculture by creating sustained employment opportunities through improved on-farm technologies and cultivation practices. d) Enhancement of farmers’ income and livelihood support for reduction of poverty in rainfed areas.
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	This programme is being implemented in the rainfed of 24 districts of the State. It has been planned to develop 12916ha. with interventions of integrated farming systems.
f)	Financial (Rs. In lakhs)	Rs. 2000.00 Lakhs

Expenditure: (Rs in lakhs):

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
2000.00	798.54	500.00	500.00	1000.00	997.46

Physical Achievements: (Units- in Hectares & Numbers):

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
10000 ha.	3884 ha.	5783 ha	1819 ha.	12916 ha	5401 ha
1600 No.	3949 No.	5695 No	2273 No.		

(b) River Valley Project (RVP):

In order to preserve the wealth of the surface land, natural resources like soil and water and to prevent premature siltation of reservoirs CSS of the river valley project scheme was initiated in Karnataka in the catchments of Tungabhadra, Nizamsagar and Nagarjunasagar. Due to insufficient funds provided under Macro Management of Agriculture for RVP project, the planned activities could not be completed. Hence Rs.1500 lakhs has been allocated under RKVY for completion of planned activities in the 31 ongoing RVP watersheds.

Details of the project are as follows:

a)	Name of the Scheme and year of introduction	Completion of Balance programme of River Valley Project by funding through RKVY. Started in the year – 2012-13
b)	Budget head	2402-00-800-0-06
c)	If plan, the Central	100% Central Assistance.
d)	Objectives of the Project	<ol style="list-style-type: none"> 1. Prevention of pre-mature siltation of reservoirs. 2. Enhancement of agriculture productivity 3. Prevention of land degradation by adoption of appropriate soil and water conservation measures.
e)	Estimated benefit and number of estimated beneficiaries from the programme/project/Scheme (measurable out put at the end of year)	<p>Project is implemented on area development approach and it is not beneficiary oriented. It is programmed to develop 69697 hectares during 2013-14.</p> <p>Measurable out puts are increase in productivity, ground water recharge, employment generation and reduction in sediment production.</p>

Expenditure (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
-	-	1000.00	1000.00	2500.00	1617.34

Physical Achievements :(Units – in Hectares & Numbers))

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
-	-	25000 (Hectares) 1880 (Numbers)	16661 (Hectares) 1612 (Numbers)	69967 (Hectares)	45218 (Hectares)

This is a centrally sponsored scheme implemented in the State as district sector scheme. Watershed sub committees are formed at Grampanchayat level. Respective Gramapanchayat President will be the President for this watershed sub committee also. Grants released from Center will be released to the new bank accounts of the Grama panchayath subcommittees for implementation of the project as per approved action plans.

11. Karnataka Watershed Development Project – KWDP II (Sujala-III)

KWDP-II to be implemented in 7 backward districts namely Bidar, Gulbarga, Yadgir, Koppal, Gadag, Davanagere & Chamarajanagar covering 28 talukas, in 434 micro-watersheds over an extent of 2.08 lakh hecets. The Government of Karnataka has accorded sanction to implement the Project vide G.O No. AD164 AML 2011 dated 05.07.2012. Subsequently on 16.07.2012 the Project has been negotiated between GOK, GOI and World Bank and the World Bank Board has approved the Project Credit No.5087 IN for Rs.471.30 crores. Out of the total project cost Rs. 151.70 crores pertaining to Horticulture component will be implemented by Horticulture Department. Accordingly the Project Appraisal Document (PAD) is ready. The Project is proposed to be implemented from 2013-14 to 2018-19 in two phases.

KWDP-II is not a standalone Project. The project is to be implemented concurrently with IWMP areas. Accordingly Batch IV and V IWMP areas are proposed as KWDP-II project areas in 7 Project Districts. The KWDP II aims at providing scientific planning tools and enabled institutions leading to development of participatory Micro watershed plans. Accordingly the integration modalities have been worked out and the process diagram developed to ensure hand in hand implementation of KWDP-II & IWMP

Details of the scheme are as follows;

a)	Name of the Scheme and year of introduction	Karnataka Watershed Development Project – KWDP II (Sujala-III) Started in the year : 2012-2013
b)	Budget head	2402-00-102-0-28 (EAP)
c)	If plan, the Central and State share is	Externally aided 70% - World Bank loan 30% - State fund,
d)	Objective of the Programme	The proposed Project Development Objectives (PDO) is to demonstrate more effective watershed management through greater integration of programmes related to rainfed agriculture, innovative and science based approaches, and strengthened institutions and capacities of stakeholders at different levels.

e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	Complete details in respect of number of beneficiaries will be given at the end of the project.
f)	Financing (Rs. In Lakhs)	Rs.4761.00 Lakh (Revised Rs.1000.00)

Expenditure: (Rs. In lakhs)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
61.48	61.48	10.00	9.28	1500.00	379.36

With the due process of Government of India the World Bank undertook Project Preparation Mission and Appraisal Mission during 2010-11 and 2011-12. The Project is proposed to be implemented from 2012-13 to 2017-18 in two phases.

During the year 2012-13 preliminary works like preparation of Project Appraisal Document (PAD), Cost Tables, Project Implementation Plan, (PIP), Financial Management Manual (FM), Procurement Manual, and Procurement Plan were carried out. Meeting on development of various TORs and a high level meeting of Project Technical Partners to finalize on TOR's was held. The Draft TORs have also been shared with World Bank TTL. The comments received from World Bank have been incorporated and further meeting with the consortium partners was held to finalize the TORs. The finalized TORs have been circulated amongst the Consortium Partners.

The Project Agreement & Finance Agreements have been signed between DEA, GOI, GOK & World Bank at Delhi on 11.02.2013

The project become effective from April 23, 2013.

After the signing of the Project between DEA, GOI, GOK & World Bank at Delhi on 11.02.2013, the project had conducted "Partner Summit" workshop of all the Project Partners on 08th October 2013.

Immediately after the Partner Summit workshop NBSS&LUP had conducted Field Orientation Training Programme for Project Scientists in Chamrajnagar district in the month of Nov 2013.

Further finalization of Memorandum of Understanding (MoU) between the partners was initiated and the MoU has been signed with National Bureau of Soil Survey and Land Use Planning, Bangalore, University of Agricultural Sciences, Bangalore, University of Agricultural Sciences, Dharwad University of Agricultural Sciences, Raichur, University of Horticulture, Bagalkot. Signing of MoU / Contract is under process are KSRSAC, IISc, KSNDMC.

WDD had released funds to NBSS&LUP to carry out the tasks mentioned in the MoU. NBSS&LUP had conducted Land Inventory Training programme at Bidar during Feb 2014.

12. Watershed Development Training Centers.

In the state two watershed training centers are established at Mysore and Bijapur. The important objectives of the centre is to train the WDD staff, personnel of NGO's and members of EC and SHG /UG/ JLG in technical, social and economical aspects.

a)	Name of the Scheme and year of introduction	Watershed Development Training Centers.
b)	Budget head	2402-00-109-0-02
c)	If plan, the Central and State share is	100% State plan
d)	Objective of the Programme	<ul style="list-style-type: none"> • Imparting training to Officers and staff of WDD from time to time • Training to staff of NGOs. • Training to members of community based organizations (CBOs) • Exposure visits
e)	Benefits intended to be accrued and number of beneficiaries from the programme (measurable output at the end of year)	Capacity building of the Department staff, NGO staff and CBO staff/members.
f)	Financial (Rs. In lakhs) during 2013-14	Rs. 30.00 Lakhs

Expenditure (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
60.00	33.55	30.00	22.42	30.00	16.49

The trainings were conducted as per schedule. No constraints.

13.Watershed Training Centre Special Development Plan:

Government of Karnataka allocated Rs.189.00 Lakhs in the 2013-14 budget under Special Development Plan for Completion of Administrative building of Bijapur Watershed Development Training Centre and first floor of administrative building for hostel. The grants Rs.189.00 lakhs has been deposited with the Executive Engineer, Public Works Department for completion of the aforesaid buildings by October 2014.

14.Training & Evaluation:

Watershed development programme gives important to natural resource conservation aspects. For dry land development areas soil & conservation practices have been initiated to improve ground water recharge by implementing state as well as central government watershed schemes. To have better outcome out of these watershed programmes training and evaluation is very much essential to assess the impact of the programmes. In addition to this training to farmers as well as implementing staff about the implementing programme is also be done. In this regard from 2006-07, training and evaluation for watershed development programme is being implemented.

a)	Name of the Scheme and year of introduction	Training and evaluation Started in the year: 2006-07
b)	Budget head	2402-00-109-0-03
c)	If plan, the Central and State share is	100% State plan
d)	Objective of the Programme	To have monitoring and evaluation for different watershed development programme. To organise Workshops, meetings and publicity activities.

		For conducting of capacity building activities and training programmes under different watershed programmes, Documentation of the watershed best practices/success stories.
e)	Estimated benefit and number of estimated beneficiaries from the programme (measurable out put at the end of year)	To assess impact / outcome of the implemented watershed programmes.
f)	Financial (Rs. In lakhs)	Rs. 2.96 Lakhs

Expenditure (Rs.In lakhs)

2010-11		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
8.25	7.57	10.00	1.54	2.50	-

District Sector (Centrally Sponsored Schemes):

1. National Watershed Development Project for Rainfed Areas (NWDPR):

Centrally sponsored scheme (CSS) of NWDPR has been in operation in the State since VIII plan period. Which has been modified and restructured initially during 1992 and then later during 2002 by the GOI. The 2002 restructured Jana-sahbhagithva NWDPR allow a much greater degree of flexibility in choice of technology, decentralization of procedures, provision for sustainability and ensures active participation of watershed community in the planning and execution for their watershed development programme.

Details of the programme are as follows:

a)	Name of the Scheme and year of introduction	National Watershed Development Project for Rain fed Areas(NWDPR) Started in the year -1991-92
b)	Budget head	2402-00-101-0-03
c)	If plan, the Central and State share is	90:10
d)	Objectives of the Programme	1. Conservation, development and sustainable management of natural resources including their use. 2. Enhancement of agricultural productivity and production in a sustainable manner. 3. Creation of sustained employment opportunities for the rural community including the landless
e)	Estimated benefit and number of estimated beneficiaries from the	Project is implemented on area development approach and it is not beneficiary oriented. It is estimated to develop 21185 hectares during 2012-13

	programme (measurable output at the end of year)	Measurable outputs are increase in productivity, ground water recharge, employment generation and reduction in soil erosion.
f)	Financial (Rs. In lakhs)	This scheme is not being implemented in 2013-14.

Expenditure (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
1125.97	1125.97	722.22	722.22	-	-

Physical Achievements :(Units –Hectares))

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
9385	12228	21185	15346	-	-

Centrally sponsored scheme implemented in the State as district sector scheme. Watershed sub committees are formed at Grampanchayat level. Respective Gramapanchayat President will be the president for this watershed sub committee also. Grants released from Center and State will be released to Grama Panchayats subcommittees for implementation of the project as per approved annual action plans. Government of India is not allocating the grants as per approved master plans annually. Hence the projects could not be completed within the approved project period, instead they are continued beyond project period.

Evaluation studies:

To track the performance and to provide information. Whether progress is made towards achieving the results and for periodic assessment of the relevance, performance efficiency in relation to the objectives of the schemes monitoring and evaluation is in force. Midterm evaluation is being taken up in the selected watersheds.

The parameters being observed are;

- Vegetation cover/ biomass
- Shift from annual crops to perennial crops
- Increase in the extent of crop production
- Soil moisture availability
- Generation of employment opportunities
- Formation of Community based Organizations

2. River Valley Project (RVP):

In order to protect natural resources like soil and water and also to prevent premature siltation of reservoirs CSS of the river valley project scheme was initiated in Karnataka during the III Five Year Plan in the catchments of Tungabhadra, Nizamsagar and Nagarjunasagar.

Details of the project are as follows:

a)	Name of the Scheme and year of introduction	River Valley Project (RVP) Started in the year - 1975-76
b)	Budget head	2402-00-104-0-01
c)	If plan, the Central and State share is	90:10
d)	Objectives of the Project	1. Prevention of pre-mature siltation of reservoirs. 2. Enhancement of agriculture productivity 3. Prevention of land degradation by adoption of appropriate soil and water conservation measures.
e)	Estimated benefit and number of estimated beneficiaries from the programme/project/Scheme (measurable out put at the end of year)	Project is implemented on area development approach and it is not beneficiary oriented. It is programmed to develop 16665 hectares during 2012-13 Measurable out puts are increase in productivity, ground water recharge, employment generation and reduction in sediment production.
f)	Financial (Rs. In Lakhs)	This scheme is not being implemented in 2013-14.

Expenditure: (Rs.In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
1125.00	1125.00	722.22	722.22	-	-

Physical Achievements :(Units –Hectares)

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
20450	23608	16665	11974	-	-

This is a centrally sponsored scheme implemented in the State as district sector scheme. Watershed sub committees are formed at Grampanchayat level. Respective Gramapanchayat President will be the President for this watershed sub committee also. Grants released from Center and State will be released to Grama panchayath subcommittees for implementation of the project as per approved annual action plans. Government of India is not allocating the grants as per approved Master plans annually. Hence the projects could not be completed with in the approved project period; instead they are continued beyond project period.

Evaluation study:

Evaluation study is taken up to track the performance and to provide information. Whether progress is made towards achieving the results and for periodic assessment of the relevance, performance efficiency in relation to objectives of the schemes monitoring and evaluation is in force. Midterm evaluation is being taken up in the selected watersheds.

The parameters being observed are;

1. Vegetation cover/ biomass
2. Shift from annual crops to perennial crops
3. Increase in the extent of crop production
4. Soil moisture availability
5. Generation of employment opportunities

AREA DEVELOPMENT PROGRAMMES (ADP)

Grants provided under Watershed Development Project will be utilized and implemented. Drought Prone Area Development Programme (DPAP), Desert Development Programme (DDP) and Integrated Waste land Development Programme (IWDP) programmes to give long term effective (impact) results.

Watershed programmes are aiming at Natural resource development. These natural resources can be utilized by rural communities, specifically for the development of under privileged sector. Rural communities are depending on the locally available resources, so that programmes under Watershed designed and implemented to develop co-ordination between community and natural resources.

Under DPAP and DDP programmes, the grants released by Central and State Government is in the ratio of 75:25 respectively. The area taken for treatment under each micro watershed is 500 ha. and the amount available is Rs.6000/ha. The Project will be implemented in 500 ha. for a period of 5 years. With regard to IWDP, the Central share available is Rs.5500/- per ha. and Rs.500/- per ha. as a matching grant released from State Government.

1. Drought Prone Area Development Programme DPAP:

This Scheme was implemented in the state from 1973-74 in drought prone areas of the state by government of India. On recommendation of, Shri Hanumantha Rao (1994) this scheme implementation on watershed development principles' since 1995. Both centre and state government providing the grants on the ratio of 75:25. 2370 micro watershed were sanctioned by the GOI. Out of these 2183 micro watershed implementation is completed and due to some reasons 105 micro watersheds fore closed by the GOI. Remaining 82 micro watersheds implementation is ongoing. Completion Reports of already completed projects were sent to Government of India.

Year wise Financial & Physical progress is as follows:

Expenditure :(Rs. In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
3870.53	2712.00	2236.18	1972.84	621.26	393.31 *

Note:* Opening Balance Included in Release and Expenditure.

Physical achievement in hectares

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
63032	39760	24209	19952	10354	6555

2.Desert Development Programme:

On the basis of watershed principle this scheme is implemented in the state since 1995. To this scheme also both Centre & State governments releasing the grants in the ratio of 75:25. 1582 micro watershed were sanctioned by the Government India, out of these due to administrative & technical reasons, 197 micro watersheds were closed by the Government of India, Implementation in remaining 1385 micro watersheds completed and completion reports of these watersheds are being sent to Government of India as submitted by the districts.

Year wise Financial & Physical progress is as follows:

Expenditure :(Rs. In lakhs)

2011-12		2012-13		2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
2030.40	1564.16	770.13	717.71	73.69	12.07*

Note: * Opening Balance Included in Release and Expenditure.

Physical achievement in hectares

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
23233	23157	18275	10845	1228	201

3.Integrated Waste land Development Programme:

This Scheme was implemented in the state to enhance the productivity in waste lands in the state. In this scheme eradication of poverty, backwardness, gender disparity are giving more importance while implementation. In waste land other than forest areas enhancement and sustainable development of biomass, fuel, fodder, fruits and woods supply are taken in to consideration. National waste land development Board implementing this scheme in the state since 1989-90. Both Centre & State governments releasing the grants in the ratio of 91.66:8.34. 86 projects were sanctioned by the GOI out of these 85 projects implementation was completed and remaining one projects is ongoing. Completion Reports of already completed projects were sent to Government of India.

Year wise Financial & Physical progress is as follows:

Expenditure :(Rs. In lakhs)

RE 2011-12		RE 2012-13		BE 2013-14	
Release	Expenditure	Release	Expenditure	Release	Expenditure
1597.64	1462.77	276.70	244.80	161.55	96.35 *

Note: * Opening Balance Included in Release and Expenditure.

Physical achievement in hectares

2011-12		2012-13		2013-14	
Target	Achievement	Target	Achievement	Target	Achievement
32814	17876	3361	2262	2693	1606

Programme and progress achieved during 2013-14

The physical and financial targets and achievements under different schemes of Watershed Development Department during 2013-14 are given in Annexure-I

Annexure-1

Statement showing physical and financial target and achievement under different schemes for the year 2013-14 (Rs. in lakhs)

Sl. No.	Name of the Scheme	Annual Allocation	Revised Target		Total	Releases	Cumulative achievement up to March-2014	% achievement for releases	Physical Target and Unit	Physical achievement	Remarks
			State Share	Central Share							
1	2	3	4	5	6	7	8	9	10	11	12
	<u>State Sector</u>										
1	Watershed Devt. Dept. Est. 2402-00-102-0-15	546.00	546.00		546.00	546.00	448.67	82.17			
2	Watershed Training Centers 2402-00-109-0-02	30.00	30.00		30.00	30.00	16.49	54.97			
3	Training & Evaluation (SDP) 2402-00-800-0-09-133	189.00	189.00		189.00	189.00	189.00	100.00			
4	Training & Evaluation 2402-00-109-0-03	2.96	2.96		2.96	2.50					

Sl. No.	Name of the Scheme	Annual Allocation	Revised Target		Total	Releases	Cumulative achievement up to March-2014	% achievement for releases	Physical Target and Unit	Physical achievement	Remarks
			State Share	Central Share							
1	2	3	4	5	6	7	8	9	10	11	12
5.	<u>Prime Ministers Relief Package:</u>										
a)	Participatory Watershed Devt. Programme 2402-00-103-0-05	4664.00	4664.00		4664.00	3442.22	3309.88	96.16	38867 (Ha)	26996 (Ha)	Expenditure and releases included O.B.
6	Fisheries in Farm Ponds and other water harvesting structure 2402-00-103-0-05	35.00	35.00		35.00	35.00	25.71	73.46			
7	Rastriya Krishi Vikasa Yojane (RVP) 2402-00-800-0-06	2500.00		2500.00	2500.00	2500.00	1617.34	64.69	69697(Ha)	45218 (Ha)	

Sl. No.	Name of the Scheme	Annual Allocation	Revised Target		Total	Releases	Cumulative achievement up to March-2014	% achievement for releases	Physical Target and Unit	Physical achievement	Remarks
			State Share	Central Share							
1	2	3	4	5	6	7	8	9	10	11	12
1)	Rastriya Krishi Vikasa Yojane (RADP) 2402-00-800-0-06	2000.00		2000.00	2000.00	1000.00	997.46	99.75	12916(Ha)	5401(Ha)	
2)	Rastriya Krishi Vikasa Yojane (DDP) 2402-00-800-0-06	1000.00		1000.00	1000.00	600.00	599.95		5000 (Ha) 300 (Str)	3281 (Ha) 215 (Str)	
3)	Rastriya Krishi Vikasa Yojane (RVP) * 2012-13					500.00	500.00	100.00			
4)	Rastriya Krishi Vikasa Yojane RADP 2012-13					500.00	498.26	99.65			

Budget for the year 2012-13 has been revalidated and Rs.1000.00 lakh have been spent during 2013-14.

Sl. No.	Name of the Scheme	Annual Allocation	Revised Target		Total	Releases	Cumulative achievement up to March-2014	% achievement for releases	Physical Target and Unit	Physical achievement	Remarks
			State Share	Central Share							
1	2	3	4	5	6	7	8	9	10	11	12
8	Campaign for check dams 2402-00-800-0-08	405.00	405.00		405.00	405.00	405.00	100.00	162 (Str)	165 (Str)	
9	Integrated Watershed Management Programme 2402-00-102-0-30	50000.00	5000.00	45000.00	50000.00	63531.88	51003.20	80.28	396825 (Ha)	386441 (Ha)	Expenditure & release included O.B.
10	Jalasiri Watershed Harvesting Structures (sdp) 2402-00-102-0-27	2311.00	2311.00		2311.00	2311.00	2309.91	99.95	773 (Str)	946 (Str)	
11	Sujala - 3 2402-00-102-28	4761.00	1000.00		1000.00	1500.00	379.36	25.29			
12	NABARD RIDF 4402-00-102-0-01	1100.00									
	State Sector Total	69543.96	14182.96	50500.00	64682.96	77092.60	62300.23	80.81	523305 (Ha)	467337 (Ha)	
									1235 (Str)	1326 (Str)	

CHAPTER-IV

Organization Structure:

The Watershed Development Department is established with effect from 1.4.2000.

1. State level: This department is headed by the Commissioner, an I.A.S. Officer of super time scale, assisted by Director of Watershed, an Additional Director (Administration) who is a senior K.A.S. Officer. Similarly for accounts, he is assisted by Chief Account Officer of the rank of Joint Controller of State Accounts. In addition to above, two Chief Conservators of Forest, one Additional Director of Agriculture, three Joint Directors of Agriculture, one Joint Director of Planning, one Joint Director of Horticulture and one Joint director of Animal Husbandry are assisting the Director in matters of Forestry, Horticulture, Agriculture and Animal Husbandry activities of Watershed Development Department.

2. District level: At the District Level, District Watershed Development Officer are implementing the programmes of the watershed assisted by multidisciplinary staff the overall control / supervision of Zilla Panchayath.

3. Taluka level: The Taluka Level Office is headed by the Agriculture Officer, who inturn responsible for implementation and monitoring of various schemes/ programme for the overall development of watershed. 176 Taluka Level Officers are functioning in the State.

1. Details of the officers and staff working in Watershed Development Department and sub-ordinate offices.

2. Annual Report Information

Sl No	Cadre	Sanctioned Post	Filled Post	Vacant	Filled Post		Filled Post	
					Gents	Ladies	SC	ST
1	‘A’	160	148	12	138	10	12	03
2.	‘B’	1226	760	466	753	07	78	20
3.	‘C’	1280	565	715	480	85	95	16
4.	‘D’	1021	218	803	188	30	35	10
Total		3687	1691	1996	1559	132	220	49

2.Details of the Out source staff working under Integrated Watershed Management Programme and Sujala-III at Head Office, Bangalore.

Sl. No	Name of the post	IWMP	Sujala-III
1.	Hydrologist	1	–
2.	Technical Expert	3	–
3.	Data analyst	1	–
4.	Technical Assistant	1	–
5.	GIS Expert	1	–
6.	Computer Programmer	1	–
7.	Account Assistant	1	–
8.	Junior Account Assistant	2	–
9.	Documentary specialist	1	–
10.	Senior Assistant	1	–
11.	Senior DEO	6	–
12.	Junior DEO	4	–
13.	First Division Assistant	1	–
14.	Ministerial Employee	–	1
15.	Environment Specialist	–	1
16.	Documentation Specialist	–	1
17.	Technical Assistant	–	1
18.	Project Assistant	–	1
19.	Group "D"	11	–
20.	Drivers	6	–

WATERSHED DEVELOPMENT DEPARTMENT

STATE LEVEL ORGANISATIONAL CHART

Minister of Agriculture (Government of Karnataka)



Additional Chief Secretary and Developmental Commissioner



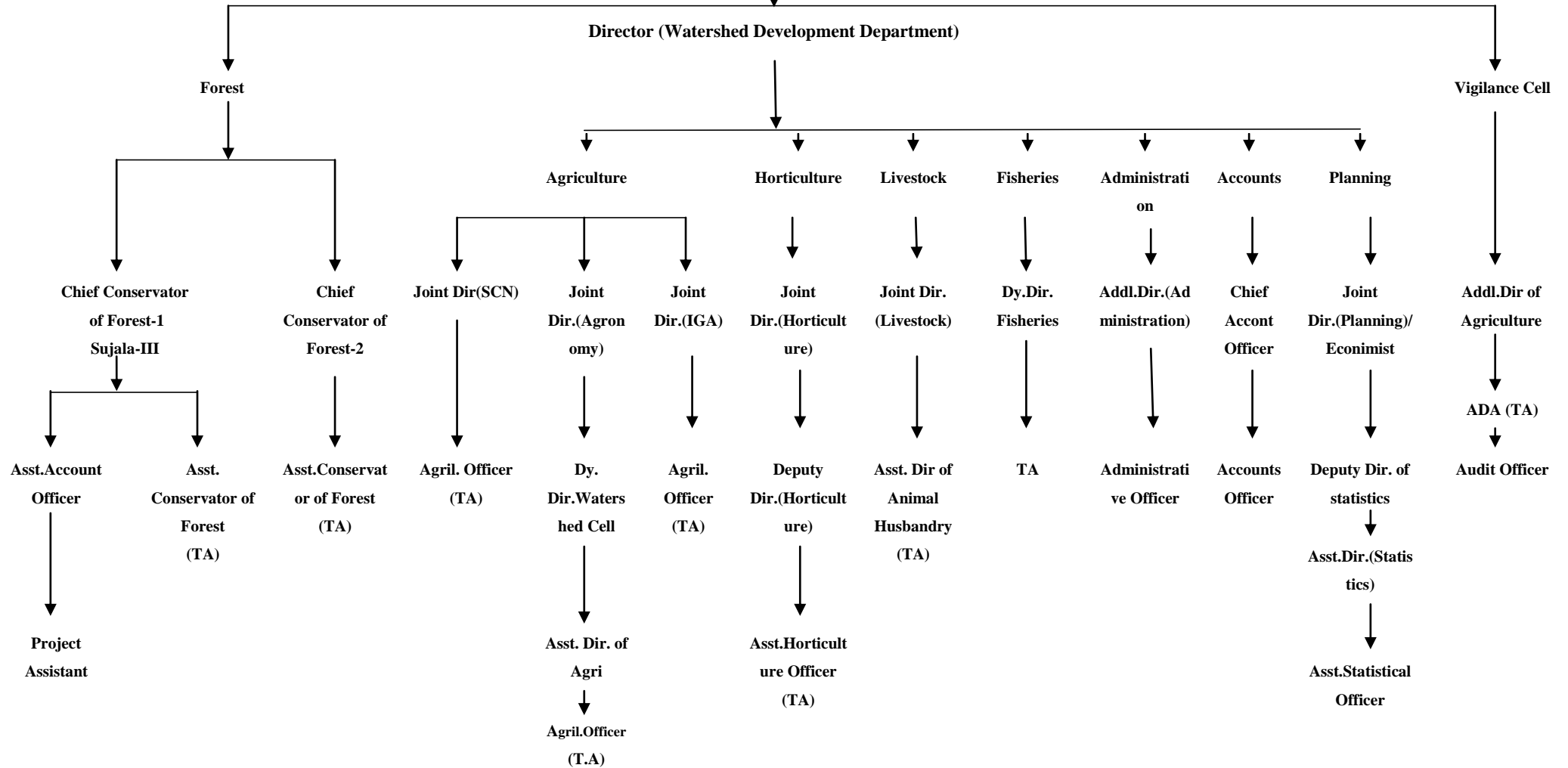
Principal Secretary (Agriculture)



Commissioner (Watershed Development Department)



Director (Watershed Development Department)



**DISTRICT LEVEL ORGANISATIONAL CHART
ZILLA PANCHAYAT**

