

## IV. IRRIGATION AND FLOOD CONTROL

The outlay provided for the development of Irrigation and Flood control during the Annual Plan 2008-09 is Rs. 257.00 crores indicating an increase of 19.38 per cent over 2007-08. The major increase is proposed for major and medium irrigation projects (23.71 per cent) and Coastal Zone Management (32 percent). About 10 percent increase in minor irrigation is proposed. The outlay under AIBP and RIDF have been increased. The Karappuzha Irrigation Project has been included under AIBP. The support for the implementation of rehabilitation package in Palakkad, Wayanad and Kasaragod has also been included under AIBP. The break up of outlay provided for 2008-09 is shown below.

**Table – 1**  
**The sub sector wise outlay during the Annual Plan 2008-09**  
**(Rs.lakhs)**

Sl. No.	Sector	Annual Plan 2008-09
1.	Major & Medium irrigation	12041
2.	Minor Irrigation	7055
	(i) Ground Water Development	715
	(ii) Surface Water Development	6340
3.	CADA	715
4.	Flood Control	30
5.	Anti-Sea Erosion	5951
	<b>Total</b>	<b>25762</b>

The schemes provided during 2008-09 are shown below.

### Schemes for Annual Plan 2008-09

#### 4.1 MAJOR AND MEDIUM IRRIGATION

##### 1. Karapuzha Irrigation Project

**(Outlay Rs. 3090.00 lakh)**

Karapuzha Project is the first project for irrigation taken up in the Wayanad District during the Fifth Five Year Plan. The scheme is to construct an earthen dam across Karapuzha at Vazhavatta with a storage reservoir and canal system to irrigate an area of 8721ha. (gross) in Wayanad district. The Project has got clearance by the Planning Commission and Administrative Sanction was accorded in 1978. The original estimate of the project was Rs. 7.60 crores and the latest estimate as per the 2004 schedule of rates is Rs. 362 crores. The cumulative expenditure upto 3/07 is Rs. 235 crores. Assistance to the tune of Rs. 47 crores has also been availed from NABARD under RIDF for the completion of the project.

The outlay envisaged is for meeting the establishment charges spill over commitments of the project and for meeting the cost of AIBP components. An outlay of Rs. 25 crore is set apart under AIBP. The amount under AIBP will be released after the approval of the action plan for AIBP by Government of India.

## **2. Idamalayar Irrigation Project**

**(Outlay Rs. 800.00 lakh)**

The Idamalayar Irrigation Project is a diversion scheme intended to irrigate an extend of 14394 ha. of wet and dry lands and the Cultivable Command Area (C.C.A.) of 13209 Ha. The source of water for irrigation is the tail race discharge of Idamalayar Hydro - Electric Project for which a Dam at Ennakal, has already been completed. A firm discharge of 4108 Cumec from this Hydro -Electric Project will be picked up down stream by a barrage constructed across the river Periyar at Bhoothathankettu. The water will be diverted through a canal system of Idamalayar Irrigation Project. The main component of the scheme is the construction of main canal from Periyar barrage towards right. This bifurcates into two one is low level canal having a length of 27.20km and the other is link canal of length 7.582 km. The low level canal is to irrigate the low lying areas. The link canal is connected with the Chalakkudy LB main canal at Poothenkutty. The project is to irrigate 14060ha (net). The work on the project was commenced in 1981 with an estimated cost of Rs.17.85crores. The latest estimate of the project as per 99 schedule is Rs.307.11 crores and the cumulative expenditure as on 31.03.2007 is Rs.223.66 crores.

Remodelling of the Chalakkudy R.B. Main Canal and L.B.canal, raising the height of Thumpoormuzhi weir across Chalakkudy river and beautification of Malayattur Lake (Manappattuchira) are also proposed to be taken up under this scheme. Out of the toal of 32.28km of the main canal, work related to 9.60km. of main canal and 9.77 km of low level canal have been completed and the remaining works are arranged.

## **3. Banasurasagar Irrigation Project**

**(Outlay Rs. 1100.00 lakh)**

The scheme consists of a dam across Karamanthodu a tributary of Panamaram river constructed by KSEB and a canal system to be constructed by KSEB. The project was commenced in 1971 with an estimated cost of Rs.8.00 crores to irrigate an area of 2800 ha. agriculture land for the second and third crops. The canal system of the project includes main canal of 2.73km length, two branches having a total length of 14.42 km and 14 nos. of distributories having a total length of 69.04 km. The revised estimate of the project based on 2004 schedule of rate is Rs. 109.12 crores. The work of the Main canal of length 2.73 Km. except for the aqueduct from Ch.0-150 M. and from Ch. 1130 M to 1500 M. is completed. The project is expected to be completed in 2010. Expenditure incurred upto March 2007 is Rs. 16.56 crores including a part of the share cost given to KSEB.

The Government of Kerala had approved in principle to seek assistance from NABARD under RIDF for the speedy completion of the project. An amount of Rs. 700 lakh is earmarked under RIDF and the amount will be released only after the approval of the project by NABARD.

#### **4. Construction of Regulator – Cum- Bridge at Chamravattom**

**(Outlay Rs. 2100.00 lakh)**

The project envisages the construction of a regulator–cum-bridge at Chamravattom across Bharathapuzha. The project was started in 1999. The project is intended to provide irrigation facilities in 9659 ha (gross) in Malappuram district, prevention of salinity intrusion towards the upstream of the regulator, assured drinking water to 14 panchayats and 2 municipalities, development of Tourism and other economic activities of the area and to connect the two coastal towns viz; Tirur and Ponnani by a bridge reducing the road length by 20 km.

Government has agreed in principle to avail assistance from NABARD under RIDF for the execution of the project and the proposal is under the consideration of NABARD. The outlay is to avail the assistance from NABARD under RIDF.

#### **5. Palakappandy Diversion Scheme**

**(Outlay Rs. 200.00 lakh)**

The scheme envisages rejuvenation of Chulliar dam by constructing a weir below the Palakappandy waterfall and a diversion canal of length 4 km. to Chulliar reservoir. The scheme is intended to stabilise 3500ha. of the paddy land and drinking water availability of the area. Administrative sanction has been issued by Government in 2004 for a total cost of Rs.910 lakhs and the work of the Project has been started. The revised estimated cost of the project including land acquisition charges is Rs.10.30 crores. The outlay is for continuing the works of the project which is expected to be completed by the end of June 2008. NABARD has sanctioned an amount of Rs.903.50 lakhs for the scheme.

#### **6. Accelerated Irrigation Benefit Programme (AIBP) for rehabilitation Package**

**(Outlay Rs. 2902.00 lakh)**

Government of India had launched a scheme ‘Accelerated Irrigation Benefit programme (AIBP) during 96-97 for providing financial assistance for accelerating the completion of ongoing irrigation projects which are in the advanced stages of completion. The pattern of assistance has been revised in 2006 as 25 percent CSS. Central assistance is given to those projects having investment clearance by Planning Commission.

The State share is not allowed for land acquisition and canal extension of completed projects. The outlay envisaged is inclusive of the state share for availing the AIBP assistance. The outlay is provided for the following three projects for completing the action plan approved under rehabilitation package. The assistance for Karappuzha Project has been provided separately.

Chittoorpuzha Project	-	1800 lakhs
Kanjirappuzha Project	-	402 lakhs
Malampuzha Project	-	700 lakhs

## **7. Muvattupuzha Valley Irrigation Project**

**(Outlay Rs.1200 .00 lakh)**

An amount of Rs. 700 lakh is set apart during 2008-09 for completing the ongoing works under State Plan and Rs. 500 lakh under AIBP for taking up works under AIBP. The project was approved for support under AIBP till 2006-07 and CWC has given extension for one more year till 2007-08. An outlay of Rs. 500 lakh is provided under AIBP expecting to get extension for one more year under AIBP. The provision under AIBP will be released only after signing of revised MOU with Government of India followed by the approval of the Project by the CWC. The entire action plan will be approved after revising the project report as per the latest SoR and subsequent approval of the project report by Government. The project cost as per 2004 SoR is Rs. 684 crores and the expenditure has crossed the project cost.

### **Other Programmes**

## **8. Investigation of Major Irrigation Projects**

**(Outlay Rs.120 .00 lakh)**

The scheme envisages investigation of all major projects for the preparation of detailed project reports or revision of project reports as multi purpose ones. The investigation of projects in the interstate river basin which are in the pipe line will be completed on a priority basis. The investigation of projects in Kabini and Pambar basin will be continued during the 11<sup>th</sup> Plan period. Besides these, the investigation of Chaliyar Irrigation Project, Moonnamkadavu Thekkady Project, Attappady, Mullaperiyar and Meenachil project will be continued. The outlay is for completing the investigation works of the projects during 2008-09.

## **9. Development of Kerala Engineering Research Institute (KERI), Peechi**

**(Outlay Rs. 100.00 lakh)**

Kerala Engineering Research Institute, (KERI), Peechi is the only research institute under Water Resources Department for undertaking research activities on project design and irrigation systems. During XI Plan, it is proposed to upgrade the Institute into a full fledged research organisation capable of undertaking research, design of coastal structures, project design bench marking of projects and modelling of irrigation systems. The implementation will be based on an approved project report. The outlay provided is for the development of the Institute.

## **10. Human Resources Development**

### **i) Assistance to CWRDM**

**(Outlay Rs.20 .00 lakh)**

Centre for Water Resources Development and Management conducts training for professionals in Irrigation, Agriculture and other departments and farmers on improved water management practices. CWRDM is also conducting training programmes for

Grama Panchayat functionaries on various aspects of planning and implementation of water resource related development programmes. The outlay is for meeting the expenditure connected with the training programmes.

**ii) Specialised Training Programmes of the Department**

**(Outlay Rs.10.00 lakh)**

The objective of the scheme is to impart training for the technical personnel of the department in planning and monitoring, preparation of designs and execution in institutions like IITs, Management Institutes etc. The outlay is for imparting training to the technical personnel of the department.

**11. National Hydrology Project (Surface water component)**

**(Outlay Rs.250.00 lakh)**

This is a World Bank aided project operated jointly by the Ground Water and Water Resources Department for building up a database, covering all aspects of surface and ground water hydrology. The Phase – I of the project was completed by 31.12.03 and the Phase II has been initiated, the total cost approved for Phase II is Rs.18.35 crores (Rs.7.55 crores for Surface water and Rs.10.80 crores for Ground Water). The duration of the project is 6 years from 2005. The expected date of completion of the project is 31.12.2010.

The objective of the project is to build a database on various aspects of the surface and ground water hydrology and hydrogeology. The data will be collected from the existing network stations and additional ones to be set up in different parts of the State. The Phase II of the project will be implemented with the objective of strengthening the capacity of departments to develop and sustain the use of Hydrology Information System (HIS), enhancing the capabilities of implementing agencies in using HIS for efficient water resources planning and management, reducing vulnerability to floods and droughts, thereby meeting the country's poverty reduction objectives; improving access to HIS by public agencies, civil society organisations and private sector through awareness building. The various components included in the project are institutional strengthening, vertical and horizontal expansion of the activities of Phase I of the project and for implementing the second Phase.

An outlay of Rs.2.50 crores is provided for 2008-09 for meeting the operational and maintenance cost of Phase I and for implementing the second phase.

**12. Post Facto Evaluation**

**(Outlay Rs. 5.00 lakh)**

The scheme envisages conduct of post facto evaluation of all major and medium irrigation projects. The evaluation study on Chitturpuzha irrigation project is over and the study on Pothundy and Kuttiyadi Irrigation projects are nearing completion. It is proposed to continue the post facto evaluation study of Chalakudy and Vazhani projects

during 2008-09. The outlay provided is to meet the expenses in connection with the preparation of the reports, travel, printing of schedules and study reports etc.

### **13. Investigation and Design Organisation with an Autonomous Status and modernization of the Department**

**(Outlay Rs.30 .00 lakh)**

It is proposed to create an independent Investigation Wing in the department by redeployment of existing staff. This wing will have full autonomy in identification, investigation, design and appraisal. The present investigation and design organisation can be merged with the new set up. The outlay is for the purpose. A portion of the outlay will be utilised for meeting the expenses on research works and training activities related to investigation and design.

During Eleventh Plan it is proposed to modernise the department by equipping with modern technologies and facilities for improving the quality of outputs and connectivity through computers for increasing the overall efficiency with improvement in the database management system. As part of this, IT oriented monitoring system for all ongoing projects including RIDF projects would be introduced during 2008-09.

### **14. Formation of River Basin Organisations (RBOs)**

**(Outlay Rs.10 .00 lakh)**

A river basin approach has to be followed in assessing the availability of water resources and their optimal utilization integrating it with the various needs in the command area. It is proposed to organise RBO in, Bharthapuzha basin by redeployment of existing staff. The RBO will address the issues of soil conservation, pollution control, flood control, optimum usage of water resources in a river and long term conservation of river. With the completion of NHP – I, Hydrological Information System has been developed in the state. An integrated river basin plan would be developed using the data generated in NHP – I along with the available supplementary data for selected basin on a pilot basis in Bharathapuzha basin. A portion of the outlay will be used for organising a workshop on river basin planning.

### **15. Dam Safety Organisation and Executing Dam safety Measures**

**(Outlay Rs. 99 .00 lakh)**

As per government of India norms a Dam Safety Organisation has been created in Kerala. In order to take up timely action with regard to dam safety, plan support is included during the Tenth plan onwards. The outlay is for meeting the expenses in connection with conducting state level trainings /workshops, inspection of dams, preparation of inundation maps, dam break analysis, conducting repeated sedimentation study in reservoirs and for works connected with the safety of dams of the completed projects. During 08-09 it is to take up the safety measures in 5 dams.

## **16. Benchmarking of Irrigation system in Kerala for Effective Irrigation Management**

**(Outlay Rs. 5 .00 lakh)**

Benchmarking is a management tool helping in the evaluation of an individual irrigation system and suggesting methods to improve the system. Benchmarking is used to compare the processes with the best practices and to adopt suitable ones. The cycle of improvement should continue for realizing the potential envisaged. In the irrigation system, this would improve the efficiency of the system and result in savings in water usage. As the irrigation systems of the State are facing the challenge of increased competition for water, efficiency of the existing system has to be improved. Hence in the 11<sup>th</sup> Plan it is proposed to introduce the bench marking for effective irrigation management with the objective of identifying the best management practices, prioritizing and evaluating rehabilitation and remodeling of projects with an objective to improve irrigation efficiency

For benchmarking exercise, key performance indicators would be collected and recorded. Data collected at local centers will be analyzed by comparing the observed values with ideal values required for the performance indicator. The suggestions to improve the system would be finalized at a Central Processing Unit headed by Chief Engineer, IDRDB with members drawn from relevant organizations.

Benchmarking the irrigation systems in Kerala would go a long way in increasing the efficiency of the system. Interventions for repairs, rectifications and improvements would be prioritized based on the report of the benchmarking exercise. All the completed Irrigation Projects would be brought under Benchmarking process in a phased manner, over the plan period. The assistance for the implementation of the recommendations will be supported in subsequent years based on the approved project report prepared for the irrigation projects. A convergence approach would be followed in the implementation process by pooling all the resources available for a project through various schemes in a single action plan.

Land acquisition and canal extension will not be taken up as part of the scheme. The scheme will be implemented as per the guidelines of Government of India.

An amount of Rs. 5 lakhs is provided for 2008-09. During the year 2008-09, Pazhassi, Kanjirappuzha and Chitturpuzha projects would be taken up for bench marking.

### **4.2 MINOR IRRIGATION**

#### **A. Groundwater Development**

##### **1. Investigation and Development of Groundwater Resources**

**(Outlay Rs. 350.00 lakh)**

The scheme envisages identification and realistic evaluation of the ground water potential and providing all infrastructural facilities like drilling machines and other materials for the development of groundwater resources in the State.

The activities include investigation of groundwater potential, preparation of detailed hydrogeological maps and compilation of district groundwater reports, providing technical support for development of groundwater sources by local governments, helping farmers for acquiring sources of irrigation on individual as well as self help group basis, guiding farmers in the adoption of appropriate lifting devices, groundwater management etc. conduct of studies on Hydro geology, geophysics, rock structure, hydrology, remote sensing, well inventory, ground water recharging to understand the hydrogeological features of the area.

The physical programmes for 2008-09 would include siting and construction of 500 drilled wells, tube wells and filter point wells, technical guidance and siting of open wells as per demand and procurement of drilling equipments.

## **2. Conservation of Ground Water and Artificial Recharge**

**(Outlay Rs.30.00 lakh)**

The scheme envisages conservation and recharge of ground water through artificial recharge techniques. It is to conserve ground water by constructing subsurface dams and check dams. In order to give further thrust for rainwater harvesting it is proposed to introduce a new component on well recharging through a simple structure consisting of a shallow trench around the well. During 2008-09 it is to construct fifteen structures for artificial recharging.

## **3. Training of Personnel**

**(Outlay Rs.5 .00 lakh)**

The objective of the scheme is to provide training for the technical and scientific personnel of the Department in the relevant fields of scientific source finding technology of well construction and ground water conservation and management, and modern computer application studies. During 2008-09 training will be given in GIS application and other softwares, for proper ground water management. The outlay is for the purpose.

## **4. Scheme for Control and Regulation of Ground Water Exploitation**

**(Outlay Rs. 20 .00 lakh )**

The objective of the scheme is the enforcement of the legislation to avoid over exploitation of groundwater and to ensure equitable distribution of the resource to all sections of the society. The enactment of the legislation is over. An Authority (Kerala State Ground Water Authority) has been set up based on the Control and Regulation Act and this authority is responsible for the enforcement of the legislation. The outlay proposed is to meet the expenses connected with the enforcement of the legislation and for conducting micro level study regarding the water height and water level depletion.

## **5. National Hydrology Project (Ground water component)**

**(Outlay Rs.250 .00 lakh)**

This is a World Bank aided project operated jointly by the Ground Water and Water Resources Department for building up a database, covering all aspects of surface and ground water hydrology. The Phase – I of the project was completed by 31.12.03 and the Phase II has been approved.

The total cost approved for Phase II is Rs.18.35 crores (Rs.7.55 crores for Surface water and Rs.10.80 crores for Ground Water). The duration of the project is 6 years from 2005. The expected date of completion of the project is 31.12.2010.

The objective of the project is to build a database on various aspects of the surface and ground water hydrology and hydrogeology. The data will be collected from the existing network stations and additional ones to be set up in different parts of the State. The Phase II of the project will be implemented with the objective of strengthening the capacity of departments to develop and sustain the use of Hydrology Information System (HIS), enhancing the capabilities of implementing agencies in using HIS for efficient water resources planning and management, reducing vulnerability to floods and droughts, thereby meeting the country's poverty reduction objectives; improving access to HIS by public agencies, civil society organisations and private sector through awareness building. The various components included in the project are institutional strengthening, vertical and horizontal expansion of the activities of Phase I of the project and for implementing the second Phase.

An outlay of Rs. 2.50 crores is provided for 2008-09 for meeting the operational and maintenance cost of Phase I and for implementing the second phase.

## **6. Establishment of Hydrology Data Bank**

**(Outlay Rs. 5.00 lakh)**

As a part of National Hydrology Project a State Data Centre has been established in the department. Six full climatic stations have been established in various locations of the state. In collaboration with the department of Agriculture, a Satellite based Automatic weather network is also under implementation by the department. In order to strengthen the weather network and to establish a Server system to receive the Satellite data as well as to meet the operational cost of the data centre including operational expenses of developing the field net work, an outlay of Rs. 5 lakh is provided during 2008-09. The project will be coordinated by the State Planning Board. For augmenting the weather network, support from NHP II will be utilised.

## **7. Rajiv Gandhi National Drinking Water Mission Scheme (S.S. 50%)**

**(Outlay Rs. 55.00 lakh)**

The scheme is to provide drinking water to the non covered/partially covered habitations through out the state by digging bore wells, tube wells and filter point wells. The scheme also includes training, purchase of machineries and equipments, accessing

the quality of water and implementation of group projects with participation of beneficiaries. It is to take up 5 schemes for implementation during 2008-09. The outlay is the 50% state share for the implementation of the scheme.

## **B. Surface water Development**

### **1. Lift Irrigation**

**(Outlay Rs. 50.00 lakh)**

Works involving lifting of water by mechanical means with a command area not less than 40 hectares come under this category. The outlay is for completing the ongoing works. Major new works would be taken up under RIDF for which provision is provided separately.

### **2. Minor Irrigation Class – I**

**(Outlay Rs.175.00 lakh)**

Minor works like improvements to tanks and rivulets, construction of check dams, sluices, regulators, bunds, vented cross bars, salt water barriers, layout of channels and drainage structures etc. that serve an area more than 50 ha upto 2000 ha come under this category. The outlay proposed is to meet the expenditure towards completing the ongoing works and for taking up new works, after meeting the spill over commitments.

### **3 Minor Irrigation Class II**

**(Outlay Rs. 100.00 lakh)**

Minor Irrigation works which can serve below 50 ha come under the scheme. The outlay proposed is to meet the expenses connected with completion of the ongoing Minor Irrigation Class – II schemes and for taking up new works after meeting the spill over commitments.

### **4. Repairs and Maintenance of Minor Irrigation Structures**

**(Outlay Rs.205 .00 lakh)**

There are more than 11624 surface lift irrigation schemes and many of them are in a dilapidated condition. Periodical maintenance of the LI schemes are essential to realize the potential of the projects. Rehabilitation of the existing lift irrigation schemes and other MI structures are proposed in the Annual Plan 2008-09. The outlay provided is for the repairs of the minor irrigation schemes.

### **5. Detailed Investigation of Minor irrigation works and Preparation of Projects**

**(Outlay Rs. 10.00 lakh)**

Minor irrigation has been given sufficient thrust during Eleventh Plan period. The share of minor irrigation has been stepped up substantially during the plan period. Apart from this, the rehabilitation package in three districts also extended support to

minor irrigation structure. But the project preparation capability as well as the quality of projects have to be improved to tap maximum possible amount from Government of India and NABARD. An amount of Rs. 10 lakh is provided to initiate investigation of minor irrigation works and to prepare detailed project reports for financial assistance.

## **6. RIDF Assistance**

**(Outlay Rs.5800 .00 lakh)**

An amount of Rs. 5800.00 lakh is proposed for implementing the ongoing NABARD assisted lift irrigation schemes, Minor Irrigation Class I & II schemes and for taking up new schemes assisted under RIDF during 2008-09. Government of India has sanctioned a Rehabilitation package for farmers in the suicide prone districts of Wayanad, Palakkad and Kasaragod. The package consists of various components for improving irrigation facilities. Restoration of irrigation tanks is one of the components of the package. The assistance for the package will be from RIDF of NABARD. The outlay envisaged is for availing assistance from NABARD.

### **4.3. Command Area Development**

#### **(a) Command Area Development Programme (SS 50%)**

**(Outlay Rs. 470.00 lakh)**

As per the direction of the Ministry of water resources, the existing CAD programme has been restructured as Command Area Development and Water Management (CADWM) programme to bring greater participation of beneficiaries from 2004-05 onwards. The restructured CADWM programmes are implemented in the four existing projects Kallada, Periyarvalley, Pazhassi and Kanjirapuzha. Kallada Project has been included by dropping the Pampa project. The restructured CADWM programme attempts to address the deficiencies such as inequity in water distribution, inefficient and over irrigation, slow pace of formation of Water User's Associations (WUAs) etc. besides the development and management activities below the outlet. In the restructured CADWM programme new components like rehabilitation and remodeling of existing minor irrigation tanks within the irrigation project commands and correction of system deficiencies were included. Muvattupuzha Valley Irrigation Project will also be included under CADWM. The outlay is the state share for continuing the command area development and water management programmes.

#### **(b) Restoration of water bodies (SS 25%)**

**(Outlay Rs.25. 00 lakh)**

Government of India has introduced a pilot scheme on 'restoration of water bodies with 75% central assistance during 2005-06. Assistance was provided for the restoration of 10 tanks in Palakkad and 13 tanks in Pathanamthitta during the X Plan period. It is proposed to continue this scheme in other districts during the Eleventh plan period. An amount of Rs. 25.00 lakhs is provided for 2008-09 for implementing this

scheme. The outlay is the state share of assistance for the implementation of the schemes during the year

## **2. Implementation of Participatory Irrigation Management**

**(Outlay Rs. 2.00 lakh)**

The sub optimal utilisation of irrigation potential created in the State is mainly due to non-maintenance of irrigation structures which could be improved through PIM. The newly enacted modified Irrigation and Water Conservation Act 2003' has also stressed the introduction of PIM in the State. The completion of the CAD programmes, correction of system deficiencies of canals, restoration of water bodies and formulation of necessary rules are necessary for the implementation of the PIM. The outlay proposed is for the implementation of PIM in Chitturpuzha irrigation project and Kanjirappuzha during 2008-09 by CADA. The outlay will be utilised for the preparation of ayacut maps and records of ayacut area, ayacut owners list, and for other preliminary works during 2008-09.

## **3. Local Level Water Resources Development and Management**

**(Outlay Rs. 18.00 lakh)**

One of the strategies identified for attaining self sufficiency regarding water requirements is to provide special focus for revival, conservation and upgradation of local water resources and traditional systems of water management. Local water resources development and management is the responsibility of the Local Governments which can be realised as a collaborative venture involving line departments concerned and R&D institutions.

There are a large number of tanks and ponds located in different part of the state only a few of them are put in use. As compiled data on the present use and problems in utilising the local water resources are not available, an assessment has to be made at the district level to document the present status of the local storage structures. It is proposed to prepare an action plan for the development of local water resources through local governments.

Action plan will be prepared through local governments in association with Agriculture department in selected districts and in the second stage a master plan for the development of local water resources in the State would be prepared. A project document for the assistance from GOI will also be prepared. The outlay will be used for preparing the master plan and action plan for selected districts. An outlay of Rs.18 lakhs is provided for 2008-09

## **4. RIDF assistance**

**(Outlay Rs. 200.00 lakh)**

Government of India has sanctioned a Rehabilitation package for farmers in the suicide prone district Wayanad, Palakkad and Kasaragode. The package consists of various components for improving irrigation facilities. Restoration of tanks is one of the components of the package and entrusted to Command Area Development Authority.

The assistance for the package will be from RIDF of NABARD. The outlay envisaged is for availing assistance from NABARD. A portion of the outlay will be used for construction of farm roads after getting approval from NABARD.

## **4.5 FLOOD CONTROL (INCLUDING ANTI-SEA EROSION)**

### **FLOOD MANAGEMENT**

#### **1. Pamba Action Plan (SS 30%)**

**(Outlay Rs. 30.00 lakh)**

A new scheme for the pollution abatement of Pamba river with 70% Central assistance has been sanctioned by the National River Conservation Directorate under National River Conservation Plan. The State government had proposed a project for Rs.319.70 crores consisting of 3 phases. The main components of the project proposed are construction of checkdams, sanitary facilities to pilgrims, collection, conveyance, treatment and disposal of solid waste generated in the nearby towns and pilgrim centres situated in the banks of the river, side protection and river training works, improvements to bathing ghats, rain water harvesting. The first phase of the project was sanctioned for a total cost of Rs.18.45 crores mainly for the pollution abatement of River Pamba. State government has to meet 30% cost under this scheme. Administrative approval was accorded by Government of India at a total cost of Rs.18.45 crores with a phasing of three years. The state share is Rs.5.33 crores. As the Travancore Devaswom Board will contribute Rs.4.85 crores out of the state share of Rs.5.53 crores, the plan support needed is only Rs.0.68 crores for three years. Under this scheme, the Water Resources Department will undertake river protection works such as construction of weir cum regulators, bathing ghats and other protection works of the river Pamba. The public awareness programme will be implemented through NGOs. The outlay provided is the state share for the implementation of the scheme.

### **Coastal Zone Management**

#### **1. Coastal Zone Management**

**(Outlay Rs. 25 .00 lakh)**

The budgetary support made available under the head 'Anti-sea erosion' is being utilised for construction of new sea wall and reformation of old sea wall. The total coastal line identified as vulnerable for erosion/accretion is 478 Km. Out of this, till the end of 3/06, 389.5 Km of new sea wall has been constructed and reformation works were carried out in 117 Kms. The balance length of new sea wall to be constructed is 89 Km. It is proposed to utilise modern technologies like geo-textiles, polyethene fabrics/sheets, nourishment of foreshore with bio materials for coastal protection. The outlay is for continuing the ongoing programmes.

## **2. Critical Anti Sea Erosion works in coastal and other than Ganga basin States (State share 25%)**

**(Outlay Rs. 10.00 lakh)**

Government of India has sanctioned a scheme costing Rs.3.00 crores during 2003-04 for critical anti erosion works in Kerala. The work was started during 04-05 and is progressing. The outlay provided is the State share of assistance for continuing the scheme.

## **3. Twelfth Finance Commission Award for Coastal Zone Management**

**(Outlay Rs. 4375.00 lakh)**

The Twelfth Finance Commission has awarded Rs.175 crore as grant-in-aid for Coastal Zone Management during the period 2005-2010. The outlay will be utilized for the construction of new sea walls and reformation of the existing sea wall for the protection of the coastal area and for establishing permanent benchmarks in the coastal area and for conducting Pilot studies using new techniques. It is proposed to construct 52Km of new sea wall and reformation of 60 km. of old sea wall in 9 coastal districts during 2005-10. It is proposed to establish permanent benchmarks along the coastal area, procurement of wave measuring instruments and other survey and levelling instruments, including pilot studies using new techniques. An outlay of Rs.43.75 crores is provided for implementing the components for 2008-09.

## **4. Assistance under TRP**

**(Outlay Rs. 1511.00 lakh)**

The outlay is provided to continue the implementation of projects approved under TRP.