

CHAPTER 4

POINT 3 : BETTER USE OF IRRIGATION WATER

4.1 Water is a scarce resource having diverse uses. It is most productively used for irrigation. Creation of irrigation potential is a highly capital-intensive activity. Unfortunately, irrigation potential often remains under-utilised. Therefore, a gap between potential created and utilised represents the need to use under effectively. The components monitored under TPP-86 are:

(A) **Quantitatively monitored items:**

- (i) Irrigation Potential Created, and
- (ii) Utilisation of Potential Created

(B) **Qualitatively monitored items:**

(a) Command Area Development Programme (CADP) consisting of:

- (i) Warabandi
- (ii) Field channels
- (iii) Land levelling
- (iv) Field drains
- (v) Training, and
- (vi) Co-ordinated use of ground and surface water.

(b) Catchment Area Development Programme consists of:

- (i) Soil Conservation, and
- (ii) Afforestation

4.2 Irrigation Potential Created and Utilised:- Country's Ultimate Irrigation Potential (UIP) has been assessed at 139.89 million hectares (m.ha). So far about 68 percent of UIP has been harnessed. Average annual growth in irrigation potential at about 1.5 m.hac per annum upto end of Eighth Plan (1992-97) was proposed to be increased to 3.4 m. ha annually by the end of Ninth Plan (1997-2002). The slower progress in creation of irrigation potential at the rate of about 1.80-1.85 m.ha per annum during the Ninth Plan was due to varied reasons including constraint of financial resouces of the State Government. The Ultimate Irrigation Potential (UIP) of the country from major and medium projects is estimated as 58.46 million hectares. The Ultimate Irrigation Potential from minor irrigation projects is estimated as 81.43 million hectare of which 17.38 million hectare is from surface water minor irrigation schemes and 64.05 million hectares from ground water schemes. A project with culturable area less than 2,000 hectare is a minor irrigation project. The details are as per *Annexure-4.1*

4.3 **Command Area Development Programme (CADP):-**

4.3.1 Centrally sponsored CADP involves execution of on-farm development works like construction of field channels, land levelling etc. and shaping conjunctive use of surface and ground water. Warabandi, the rotational system of water distribution is undertaken with a view to ensuring equitable and timely supply of water to farmers. The CADP components are:

- (1) On-Farm Development (OFD) works: (a) Development of field channels and field drains within the commands of eath outlet; (b) Land levelling on an outlet command basis; (c) Re-alignment of field boundaries wherever necessary (where possible, consolidation of holding should also to be combined); (d) Enforcement of a proper system of "Warabandi" and fair distribution of water to individual fields; (e) Reclamation of waterlogged areas (since April, 1996); (f) Supply of all inputs and services, including credit; (g) Strengthening of extension services; and (h) Encouraging farmers for Participatory Irrigation Management (PIM).
- (2) Selection and introduction of suitable cropping pattern.
- (3) Development of ground water to supplement surface irrigation (conjunctive use under Minor Irrigation sector).
- (4) Development and maintenance of the main and intermediate drainage system (irrigation sector).
- (5) Modernisation, maintenance and efficient operation of the irrigation system upto the outlet of one-cusec capacity (irrigation sector).

4.3.2 Central assistance of Rs. 2756.14 crore has been released to the State Governments under the erstwhile CADP. The achievement of CADP up to the end of Ninth Plan and for Annual Plan 2002-03 & 2003-04 are as under:

The target and achievement for annual plan 2002-03 and 2003-04

(Unit: in '000 hectares)

Sl. No.	Item	2002-2003		2003-2004	
		Targets	Achievement	Targets	Achievement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Construction of Field Channels	586	471	510	400
2.	Warabandi	386	340	530	140
3.	Field drains	127	138	170	070

4.3.3 The CAD programme has been restructured and made operational from the year 2003-04 with the title "*Command Area Development and Water Management Programme*". The new programme will be run in 133 projects during the remaining three years of X Plan. Details are as under:

4.3.4 Command Area Development and Water Management Programme (CAD&WM): Water is a scarce resource having diverse uses. It is most productively used for irrigation. Irrigation is one of the most important inputs for modern agriculture. Creation of irrigation potential is a highly capital-intensive activity requiring huge resources. Unfortunately, irrigation potential often remains under-utilised. Therefore, a gap between potential created and potential utilized represents underutilization a vast resource, which needs be tapped effectively.

4.3.5 With a view to bridge the gap between the irrigation potential created its utilization, Centrally Sponsored 'Comand Area Development Programmed' for execution of on-farm development works was introduced since 1974-75. The main component of the CADP were:-

- (i.) Construction of field channels & field drains
- (ii) Land leveling & shaping
- (iii) Enforcement of warabandi

4.3.6 The programme was initiated in 1974-75 with 60 major and medium irrigation projects. So far 310 irrigation projects with a *Culturable Command Area* (CCA) of about 30.00 m.ha. spread over 28 States and 2 Union Territories have been included under the programme, out of which CAD works in 162 projects have been completed and Central assistance closed. Twenty-three ongoing projects have been clubbed into 8.

4.3.7 Restructured "*Command Area Development and Water Management Programme* (CAD&WM)" is to be implemented with those components of CADP, which have been found to be beneficial to the farmers, and includes some new components, which are considered essential for correcting the deficiencies in the irrigation systems.

4.3.8 Training Programme :- So far as training for the better use of irrigation water is concerned, the orientation training programmes meant for the senior level officers are fully funded by the Central Government, while the cost of training other functionaries and farmers is shared equally by the Centre and the State Governments. The training programmes for farmers are either being organised by the CAD authorities or through Water and Power Consultancy Services (India) Ltd. (WAPCOS) Water and Land Management Institutes (WALMIS), or other institutions. During this year (upto February, 2003), 25 National Level and Seven State Level Training Programmes have been sanctioned by the Ministry on different aspects of the CAD Programme.

4.3.9 Scope and Administraiton:- The programme covers 310 Irrigation Projects with cultivable command area of 30.00 million hectare. The programme is being implemented by 28 State Governments and 2 Union Territories through 55 Command Area Development Authorities (CADAs). In order to assess the implementation and impact of ongoing centrally sponsored Command Area Development Programme in terms of the objectives and its quantification, the Planning Commission has emphasised the need for comprehensive evaluation of the CAD programme. Accordingly, evaluation of 18 CAD projects had been awarded by MOWR. Most of the reports have been submitted to the MOWR.The major findings are as under: (a) Enforcement of Warabandi has helped in equitable distribution of water among farmers and in improving utilisation of irrigation potential as well as agricultural productivity. (b) The extention service support has been considered very important to help the farmers in their decision making in switching over from dry land crops to irrigated crops. (c) Suitable cropping pattern and improved variety of crops having better water efficiency have been introduced in many irrigation projects replacing non-remunerative crops. (d) The major constraints for ground water development includes small and fragmented holdings, poor economic status of farmers, cumbersome institutional financial support and poor supply of electricity and diesel to operate pump sets, availability of inadequate subsidy of farmers. (e) For achieving efficiency in irrigation, emphasis has to be given to the maintenance of the system.

4.4 Participatory Irrigation Management (PIM):- The National Water Policy 2002 stresses participatory approach in water resources management. It has been recognized that participation of beneficiaries will help greatly for the optimal upkeep of irrigation system and utilization of irrigation water. The participation of farmers in the management of irrigation would give responsibility for operation and maintenance and collection of water rates from the areas under the jurisdiction of the Water Users' Associations of concerned hydraulic level. Under the CAD Programme, presently a provision exists for a one-time functional grant to farmers' Associations @ Rs.600 per hectare to be shared among the Centre, State and the farmers in the ratio of 270:270:60. The farmer will thus have to contribute 10% of the cost of the works in the form of cash/Labour involving field channel, field drains, water logging, desilting and renovation of tanks etc. The Government of Andhra Pradesh, Goa, Karnataka, Tamil Nadu, Rajasthan, Orissa and Madhya Pradesh have enacted legislations for the establishment of the Water Users' Associations. Haryana Government has formed a committee for framing PIM Act. Government of Maharashtra has approved legislation named as "*Maharashtra Farmer Management & Irrigation System Act, 2003*". Other States are also in the process of taking steps in this direction.

4.5 Catchment Area Development Programme: Soil conservation and afforestation activities in the catchment of the existing projects are being undertaken by the State Governments. Soil conservation for enhancing the productivity of degraded land in the catchments of river valley projects and flood prone rivers, and reclamation of alkali soil have been subsumed under macro management allocation to these states, for these activities will depend upon their work plan/physical targets. Soil is most useful for natural vegetation and its fertility must be protected. It can be conserved if it is left unearned and bare. To conserve soil, following actions are desired from State Government: (i) Protect the fertility of soil by not cutting the trees recklessly.(ii) Compaigh for planting of more and more trees.(iii)Cattles, such as sheep, goats, cows, horses etc. should not be allowed to overgraze in the fields.(iv) Farms should be properly levelled and have proper boundaries. (v) In hilly areas, farms should be terraced. (vi)There should be diversification and rotation of crops.