

## WATER RESOURCES AND IRRIGATION IN CHHATTISGARH (May 2006)

### 1. Water Resources of the State :

1.1 The state has an area of 137360 Sq.km. and nearly 44% area is covered under forest. The annual rainfall in the state is about 1400 mm. Nearly 90% rainfall occurs in about 4 months in a year. The rainfall is so uneven that the annual averages have little significance on the main crop of the state which is Paddy. In fact; every third year, there is always a threat of drought, which is due to uneven occurrence of rainfall rather than deficient rain.

### 1.2 Surface Water

The Surface water of the rivers flowing within the state is estimated to 59,900 Million Cubic meter. Considering the reservation of 8700 Million Cubic meter for usage of down stream states under various interstate agreements, and other practical considerations approximately 41700 Million Cubic meter Surface water can only be used. Present utilization is about 9200 Million Cubic meter (22%).

The State has five river basins. The following table gives basin wise availability of Surface Water.

S. No.	Basin	Drainage area (Sqkm)	Surface Water (Mcum)
1.	Ganga	18,808	5,712
2.	Brahamani	1,316	400
3.	Narmada	2,113	642
4.	Mahanadi	75,546	22,945
5.	Godavari	39,577	12,020
<b>Total</b>		<b>1,37,360</b>	<b>41,719</b>

### 1.3 Ground water

In addition to Surface Water there is a dynamic (rechargeable) ground water resource of 13678 Million Cubic meter, out of which present utilization is about 2792 Million Cubic meter (20.4%).

### 2.0 State Water Policy

The State Water Policy was introduced in November, 2001. The main objectives of the policy are :-

- (1) Integrated development of water resources.
- (2) Water Resources Development in drought prone and shadow area.
- (3) Providing drinking water for drinking, agriculture and industries on rationalised.
- (4) Encouraging private participation in the development and
- (5) Participation of beneficiaries in the development of water resources.

To achieve the above objectives the five steps are proposed to be implemented.

- (1) Water Resources Planning
- (2) Water Resources Development
- (3) Water Resources Management
- (4) Rationalization of water rates
- (5) Water conservation

The National Water Policy has been revised in April 2002. In view of this the State Water Policy is also being revised. Main modification proposed includes development of information technology, emphasis on development of weaker sections of the society, training of farmers and staff etc.

### **3.0 Irrigation Development**

**3.1** The provision for Xth Five year plan (2002-07) for irrigation sector has been made as Rs. 3000 Crores. The target for creation of additional potential in plan period is 3.60 Lakh Hectares

The net sown area of the State is 48.28 Lakh Hectares and gross sown area is 57.88 Lakh Hectares On 1st November, 2000 at the time of formation of the State, the irrigation potential was 13.28 Lakh Hectares The percentage of irrigation was 23% of the gross sown area which was far less that national level of 38%.

The year wise target and achievement is given in the following table.

Year	Xth Plan Ceiling (Rs.Crores)	Budget Allotment (Rs. Lakhs)	Expenditure (Rs. Lakhs)	Physical Target ('000 Ha)	Achievement ('000 Ha)	Cumulative Achievement
2002-03	392.23	429.99	388.15	70	41	1453
2003-04	401.92	507.91	452.52	70	98	1551
2004-05	660.39	738.57	641.69	80	75	1626
2005-06	858.46	714.00	576.86	70	45	1671
2006-07	687.00	854.19	-	70	-	-
Total	3000	3244.66	2059.22	360	259	-

#### 4.0 2005-06

#### 4.1 Budget Allocation

The Budget provision of Rs. 714.00 Crores was made for financial year 2005-06. Head wise budget allocation and expenditure for 2005-06 is given below :-

S. No.	Head	Budget Provision Rs. Crores	Budget Allocation Rs. Crores	Expenditure Rs. Crores
1.	Plan General	523.92	523.92	431.69
2.	Tribal Sub Plan	179.48	177.69	138.66
3.	Special Components Plan	10.60	10.60	6.51
	<b>Total</b>	<b>714.00</b>	<b>712.21</b>	<b>576.86</b>

The scheme wise budget allocation and expenditure is given in following table: -

S. No.	Category of scheme	Budget Provision Rs. Crores	Allocation Rs. Crores	Expenditure Rs. Crores
1.	Major Projects	225.24	225.24	200.57
2.	Medium Projects	135.77	135.77	107.70
3.	Minor Schemes	248.72	246.93	178.09
4.	Drought Relief / Construction of Anicuts	25.85	25.85	13.09
5.	Establishment , etc.	78.42	78.42	77.41
	<b>Total</b>	<b>714.00</b>	<b>712.21</b>	<b>576.86</b>

#### 4.2 Achievements in 2005-06

**4.3.1 Major Projects** - The balance work of Mahanadi Reservoir Project and Hasdeo Bango Project was continued during the year. The work of Sondur Reservoir, Tandula Lining mile 46 to 68.80, Kelo and Samoda Phase-II project were started.

**4.3.2 Medium Projects** - Mongra, Sutiapat, Kosarteda and Kharkhara Mohdipat projects are ongoing. The work of new schemes viz. Sukhanalla, Ghumariya, Karranalla, and Saroda Lining was taken-up.

**4.3.3 Minor Schemes** - State Government has accorded administrative approval of New 67 schemes having irrigation potential of 22000 Hectares in the year 2005-06. Revised administrative approval was also accorded in this year to 49 schemes having 92300 hectares of designed irrigation potential.

**4.3.4** Government of India's Restoration of Water bodies Project" was inaugurated by Hon. Prime Minister on 30th April, 2005. Under a Pilot project in this scheme 10 old tanks of Kabirdham with an estimated cost of Rs. 223 Lakhs will be restored / upgraded and 1890 ha area will be benefited. The pilot project is in advanced stage of completion.

**4.3.5** An additional potential of 45000 Hectares has been created in the year 2005-06.

## **5.0 Targets for 2006-07**

### **5.1 Budget Allocation**

The budget outlay of Rs. 854.19 crores for plan works has been proposed for 2006-07.

The scheme wise proposed allocation for 2006-07 is given below :-

<b>S. No.</b>	<b>Category of Scheme</b>	<b>Budget Provision (2006-07) Rs. Crore</b>
1.	Major Project	279.86
2.	Medium Project	191.06
3.	Minor Scheme	372.94
4.	Flood Protection	3.85
5.	Ayacut	6.47
	<b>Total</b>	<b>854.19</b>

The target for creation of additional irrigation potential in the year 2006-07 is 76000 Hectares In addition to this, about 15000 Hectares is proposed to be restored under the A.D.B. assisted Chhattisgarh Irrigation Development Project.

The balance work of Hasdeo Bango Project and Mahanadi Project will continue and proposed to be completed by the end of 2007. The construction work of Kelo, Rajeev-Samoda Phase-II and Sondur Project (Canal work) will continue during 2006-07.

Seven new Medium projects Khutpalli, Sapnai, Baniyatola, Kasisot, Pidhapal, Bhimsen and Ib are proposed to be started in 2006-07.

Now little scope exists for construction of large dams because of non-viability of economical sites and other factors e.g. socio-economic and rehabilitation costs. 595 Anicuts / stop dams across various rivers have been pin-pointed to create a storage of about 400 MCum with an estimated cost of Rs. 1657 crores. These schemes will enhance ground water potential and serve as a source of water for drinking, domestic, industrial use and provide irrigation to adjoining areas. A provision of Rs. 81.63 Crores for construction of anicuts has been made in the budget for the year 2006-07.

## 5.2 Projects under construction

### 5.2.1 Major Projects

The ongoing major projects and their design potential given below :-

S. No.	Project	Estimated Cost (Rs. Crore)	Design Potential (ha)
1.	Hasdeo Bango	1312.32	433500
2.	Mahanadi Project	800.00	264000
3.	Kelo	235.00	34555
4.	Sondur	309.00	12260
5.	Rajiv Augmentation (Samoda) Phase-II	123.00	28000
	<b>ERM Project :</b>		
1.	Tandula Main Canal Lining	120.00	13896
	<b>Total</b>		<b>786211</b>

The Physical progress of Hasdeo Bango is about 98%. The proposal of Mahanadi Project and HB Project Phase-III & IV for Rs. 204.95 Crores and Rs. 155 Crores respectively under AIBP assistance has been submitted and under

consideration with Central Government. Tandula Lining and Sondur are being constructed under NABARD assistance; other major projects are being executed under state plan.

### **5.2.2 Medium Projects**

Following 10 medium projects are in progress: -

(1) Mongra Barrage (2) Saroda Lining - ERM (3) Mata Sutyapat (4) Upper Jonk (5) Kharkhara Mohdipat (6) Barnai and (7) Kosarteda. (8) Karranalla Barrage (9) Sukhanala Barrage (10) Ghumariya nala

Total designed potential of ongoing medium projects is 60164 Hectares. Kosarteda project of Bastar district is being funded under AIBP. Mata Sutyapat and Kharkhara Projects are being constructed with NABARD assistance.

### **5.2.3 Minor Projects**

In all 312 minor schemes with an estimated cost of about Rs. 600 crores and designed potential of about 1.70 Lakh ha are at various stage of completion. 66 anicuts costing Rs. 156.44 crores are being constructed on various rivers.

From 2nd phase to 11th phase under RIDF programme of NABARD Rs. 727.02 crores have been sanctioned for 338 schemes having a design potential of 171781 hectares. 195 schemes have been completed till March 2006 creating 85700 hectares of additional potential.

**5.2.4** A provision of Rs. 18.10 crores has been made for Asian Development Bank assisted **Chhattisgarh Irrigation Development Project**. Under this project 200 old minor and 20 medium schemes will be restored to their designed capacity benefiting about 2 Lakh Hectares Duration of this project is six years.

**5.2.5 Hydrology Project Phase-II** with an estimated cost of Rs. 21.51 Crores has been approved by the World Bank and a provision of Rs. 5 crores has been made in the budget for 2006-07. This 7 year project has been launched in April 2006.

**5.2.6** Government of India's **Restoration of Water bodies Project** was inaugurated by Hon. Prime Minister on 30th April, 2005. Under a Pilot project in this scheme 10 old tanks of Kabirdham estimated to cost Rs. 223 Lakhs will be restored and upgraded and 1890 ha area will be benefited. The pilot project is in advanced stage of completion.

A detailed project report for restoration of 59 schemes of Kabirdham district has been submitted for approval. The estimated cost of this project is Rs 54 Crores

and about 21 Thousand hectares area will be benefited with completion of this project.

## **6. Ground water, Tube wells**

The dynamic ground water resource is replenished annually. According to Central Ground Water Board Report (March 2005) total ground water resources has been estimated as 13678 Mcum. The ground water draft for all uses in the state is 2792.12 Mcum. (20.4%).

Durg is the most developed district having the highest ground water use of 507.92 Mcum against the availability of 769.20 Mcum.

A total of 19 schemes of tube well irrigation have been completed in the state with design potential of 16295 Hectares, 8 Government tube well irrigation schemes area under progress with design potential of 12315 Hectares

## **7. Water User Association**

After election in April 2000, the irrigation management was transferred to 945 Water User Associations in the month of June 2000. They have been provided the technical support and back up by the Water Resources Department.

WUA's are deciding the priorities of repairs and upkeep of system, extent of command area to be irrigated along with the delivery schedule and resolving disputes. During the past four years the WUA's have regulated the available water satisfactorily.

The PIM act has now been amended to the present needs with emphasis on participation of women. The amendment act is passed in the Legislative Assembly in March 2006.

## **8. Water Supply for Domestic use and Industries**

About 102 Million Cubic Meters of water for drinking and domestic use is being supplied to Municipal Corporations of Raipur, Bhilai, Ambikapur, Korba etc.

22 Industries are also being supplied about 658.5 Million Cubic Meter of water by the water resources department.

