

## **CHAPTER – XI**

### **OTHER ASPECTS**

#### **11.1 Foreign exchange element**

The Govt. of India has declared the Ken-Betwa Link Project as one of the national projects. Now, the earlier proposed Ken-Betwa Link Project is proposed to be taken up in two separate parts viz., Phase-I and Phase-II. As such, 90% of the cost of the present Ken-Betwa Link Project (Phase-II) is also expected to be borne by Central Government whereas the balance 10% will have to be borne by the beneficiary states viz. MP and UP. Further most of the required materials like plant and machinery, spares, instruments etc. are proposed to be purchased/hired locally from internal resources thereby requiring no import under foreign grants/credits from other countries. Thus, prima facie, no foreign exchange element is required for the project.

#### **11.2 Revenue**

The source of revenue from the project is mainly from the benefits accrued from the following items.

##### **11.2.1 Irrigation water rates**

Annual O&M cost of the project works out to Rs 428.35 lakh whereas benefited area from irrigation is 0.99 lakh ha. The irrigation water rates will be collected from land holders to recover O & M cost of the project. The present range of water rates in Madhya Pradesh state is from Rs 50 to Rs 960 per ha for both flow and lift irrigation. The land owners are free either to enter into an agreement with the Project authorities or to get irrigation on demand from time to time. However, these charges are in addition to the land revenue paid by them.

##### **11.2.2 Betterment levy**

With the introduction of irrigation and improved method of cultivation, the yield of the crops and value of the land will appreciably increase. Therefore, land owners are to pay some share to the Government for this increase in the value of their lands. Subsequently, betterment levy can be charged from beneficiaries of existing command in Vidisha, Raisen,

Sagar, Ashok Nagar and Shivpuri districts of MP who are not getting adequate water for their command from existing system.

### **11.2.3 Sale of Power**

No power generation has been proposed in any of the project under Ken Betwa Link Project, Phase-II. As such there is no sale of power in the project.

### **11.3 Financial resources**

After getting techno-economic clearance from CWC/ TAC – MOWR and obtaining necessary statutory clearance from MOEF, Ministry of Tribal Affairs etc. The DPR of the project will be put up to Planning Commission for investment clearance. The year wise requirement of funds for the construction of the Ken-Betwa Link Project, Phase-II is furnished in Annexure: 10 of Volume – II. This project will be covered under central sector since it has already been announced as a national project and 90% of funding will be borne by central govt. Further, no foreign assistance/ aid will be required for this project since the entire cost will be met from internal resources of Government of India and State Governments. The MoU arrived between Governments of MP & UP and the Union Government regarding preparation of DPR suggests that “specific MoUs as required will be entered in to amongst the States of Uttar Pradesh, Madhya Pradesh and Union Govt. based on the DPR and agreements reached on scope of the link, sharing of costs and benefits and arrangements for management and control of water etc.” So after completion of DPR of Ken-Betwa Link Project (Phase-II), these issues can be discussed further.

### **11.4 Future Utilisation of facilities (Buildings)**

Various existing colonies are in existence in the vicinity of the projects proposed under Ken-Betwa Link Project (Phase-II). Some site colonies are proposed at 4 barrage sites and 1 dam site i.e. Lower Orr dam site. Therefore, these site colonies will be utilized for operation and maintenance of above 4 barrages and the dam.

## **11.5 Legal aspects of interbasin transfers such as impact on existing Awards/Agreements/ Treaties**

### **11.5.1 Existing Interstate agreement on sharing of Ken water**

Ken basin an inter-state river between MP and UP, agreements were arrived at on Rangwan dam in the year 1972 on Ken canal and head works of UP, Bariarpur left bank canal of MP and Urmil Project in the year 1977. In the meeting with Secretary, Irrigation & Power, Govt. of India held at New Delhi on 10.12.1981, it was decided that an upstream use of 80 TMC should be kept for the then proposed KMPP. Details are furnished in the Para 11.5 of DPR of Ken-Betwa Link Project (Phase-I). Agreements between the two States of Madhya Pradesh and Uttar Pradesh are given at Annexure-11.1 of Volume – II.

### **11.5.2 Proposed water sharing of Ken basin upto Daudhan dam as per MoU**

Proposed water sharing of Ken basin upto Daudhan dam as per MoU are given in the Para 12.5.2 of DPR of Ken-Betwa Link Project (Phase-I). However, it is reproduced again as below in Table-11.1.

**Table - 11.1**  
**Proposed water sharing of Ken basin upto Daudhan dam**

| Sl. no. | Particulars   | Proposed water sharing |        |
|---------|---|------------------------|--------|
|         |   | MCM                    | TMC    |
| 1.      | Gross water available at proposed dam                 | 6188                   | 218.54 |
| 2.      | Madhya Pradesh requirement in u/s of dam              | 2266                   | 80.03  |
| 3.      | Balance water available                               | 3922                   | 138.51 |
| 4.      | Regeneration(+)                                       | 442                    | 15.61  |
| 5.      | Net water balance available                           | 4364                   | 154.12 |
| 6.      | Total requirement of MP                               |                        |        |
|         | a) D/s of Ex. Daudhan                                 | 1375                   | 48.56  |
|         | b) Enroute use  | 263                    | 9.29   |
|         | c) Domestic enroute utilization & transmission losses | 49                     | 1.73   |
|         | Total   | 1687                   | 59.58  |
| 7.      | Total Requirement of Uttar Pradesh                    |                        |        |
|         | D/s of Daudhan including enroute command              | 1700                   | 60.04  |
| 8.      | Proposed water transfer to Betwa basin                | 659                    | 23.27  |
| 9.      | Requirement for D/s of Dam for ecological need        | 318                    | 11.23  |

After finalization of DPR of Ken-Betwa Link Project (Phase-I), the allocation of water between Govt. of Madhya Pradesh and Uttar Pradesh is shown in Table-11.2.

**Table - 11.2**  
**Allocation of water**

| S. No. | Particulars                            | Proposed water sharing | Planned sharing as per DPR |
|--------|--|------------------------|----------------------------|
|        |  | MCM                    | MCM                        |
| 1.     | Total requirement of MP                |                        |                            |
|        | a) D/s of Ex Daudhan                   | 1375                   | 1405                       |
|        | b) Enroute use                         | 263                    | 277                        |
|        | c) Domestic enroute utilization        | 49                     | 38                         |
|        | d) Transmission losses                 |                        | 68                         |
|        | Total                                  | 1687                   | 1788                       |
| 2.     | Total Requirement of UP                |                        |                            |
|        | a) D/s of Daudhan                      | 1600                   | 1600                       |
|        | b) Enroute use                         | 100                    | 89                         |
|        | c) Domestic enroute utilisation        |                        | 11                         |
|        | Total                                  | 1700                   | 1700                       |
| 3.     | Proposed water transfer to Betwa basin | 659                    | 591                        |

### 11.5.3 Existing Interstate agreement on sharing of Betwa water

The river Betwa is an Inter-State river between Madhya Pradesh and Uttar Pradesh. In Pre-independence era during British period two projects were constructed by the Uttar Pradesh Government as early as in 1920. These are Dhukwan reservoir on the main river upstream of Jhansi and Parichha weir downstream of Jhansi for Irrigation in Uttar Pradesh. In order to supplement Dhukwan reservoir Matatila major project has been constructed by Uttar Pradesh, after independence. In April 1953, the Matatila Project was augmented for 0.45 lakh ha (1.12 lakh acres) irrigation in Madhya Pradesh through Bhandar canal system and 1.07 lakh ha (2.64 lakh acres) irrigation in Uttar Pradesh. Further on the same river Betwa Upstream of Matatila, Rajghat major project has been taken up for

construction by the Betwa River Board. Agreements between the two States of Madhya Pradesh and Uttar Pradesh have been drawn up for distribution of water at Matatila and Rajghat (Annexure 11.2 and 11.3 of Volume – II). The abstract of water use allocation without taking into consideration the Regeneration is given in Table 11.3 below:

**Table – 11.3**  
**Abstract of water use allocation**

| S. No. | Description   | MCM     | TMC    |
|--------|---|---------|--------|
| 1      | Total 75% dependable surface water yield upto Rajghat   | 3370.08 | 119.00 |
|        | Total Surface Water   | 3370.08 | 119.00 |
| 2      | Availability by intervalley water transfer upto Rajghat and being used directly for Bhopal Town water supply                                |         |        |
| 3      | Existing water use by MP 65.0 MCM, Future water use 65.00 MCM, Total (65+65)=130 MCM  | 130     | 4.59   |
|        | (a) For Irrigation purposes from Betwa Basin  | 900     | 31.78  |
|        | (b) For Domestic and Industrial proposes from Betwa Basin @ 214-130=84 MM <sup>3</sup>  | 84.00   | 2.966  |
|        | (c) For Domestic & Industrial proposes from Inter valley water transfer directly to Bhopal  | 130.00  | 4.590  |
| 4      | Reservation for future use by MP in Betwa Basin upto Rajghat (A) For Irrigation purposes (B) For domestic and Industrial purposes Committed | 0       | 0      |
|        | (a) For irrigation purposes U/S of Rajghat Dam without considering any Regeneration   | 484.765 | 17.117 |
|        | (b) For domestic and Industrial purposes from basin water 595-(130+0.2x828)   | 299.4   | 10.57  |
| 5      | Committed Irrigation use by MP from Rajghat   | 750.48  | 26.50  |
| 6      | Committed Irrigation use by UP from Rajghat   | 750.48  | 26.50  |
| 7      | Committed Irrigation use by MP on D/S of Rajghat from water of Rajghat Reservoir  | 84.96   | 3.00   |
| 8      | Committed Irrigation use by UP on D/S of Rajghat from water of Rajghat Reservoir  | 169.92  | 6.00   |
| 9      | utilization by UP from Rajghat Dam project (6+8)  | 920.40  | 32.50  |
| 10     | Contribution to be spared to UP from M.P.C.A. from Rajghat 578 sqkm @ 0.2077 MCM/sqkm or 19 MCFT/sq.miles                                   | 141.60  | 5.00   |
| 11     | Water to be spared to UP from MP catchment area from Rajghat reservoir (920.40-141.60)  | 778.80  | 27.50  |
| 12     | Water use by UP from Matatila Project for 2,64,000 Acre Irrigation  | 526.75  | 18.60  |
| 13     | Contribution by UP catchment area of 1854.49 Sq.km @ 0.2077 MCM/Sq.Km   | 382.32  | 13.50  |
| 14     | Water to be spared to UP from MP catchment area from Matatila (12-13)   | 144.43  | 5.00   |
| 15     | Total quantity of water to be spared for other state @ UP from Rajghat and Matatila Reservoir (10+11)                                       | 923.23  | 32.60  |

As per interstate agreement on Rajghat dam between Govt. of Madhya Pradesh and Uttar Pradesh, Govt. of Madhya Pradesh can utilize the water in the upstream of Rajghat dam if 75% dependability yield at Rajghat dam exceeds to 119 TMC. As per DPR of Ken-Betwa Link Project (Phase-I), 591 MCM water is proposed to be delivered into Betwa river at Parichha weir. As such, The Govt. of Madhya Pradesh may utilize 591 MCM of water in the upstream of Upper Betwa region on substitution basis. However, 4 barrages namely: Neemkheda, Barari, Kesari and Kotha barrages are proposed in the upstream of Rajghat dam under Ken-Betwa Link Project, Phase-II. About, 159 MCM i.e. 5.61 TMC water is expected to be utilized from the 4 barrages by Govt. of Madhya Pradesh. Remaining 432 MCM of water may be kept reserve on account of Govt. of Madhya Pradesh share. Govt. of Madhya Pradesh may take its own view in regard of this 432 MCM of water. Therefore, a fresh agreement is needed after finalization of DPR of Ken-Betwa Link Project (Phase-I) and (Phase-II). Govt. of UP has mentioned in their letter no. D.O. letter no. 848/11-27-SI-4-67(w)/03 Lucknow dated 11.02.2011 that only 8 TMC of water can be spared in the upstream of Rajghat dam for utilization by Govt. of Madhya Pradesh. Copy of the letter is enclosed as Annexure 11.5.

#### **11.6 Further scope of the Ken–Betwa link**

The following ten project components were initially identified under Ken–Betwa Link Project (Phase-II) viz.

##### **Dam**

- i) Lower Orr dam
- ii) Babnai dam

##### **Barrages**

- (i) Tharr Barrage
- iii) Neemkheda Barrage
- iv) Parariya Barrage
- v) Barari Barrage
- (ii) Narkheraghat Barrage
- (vi) Bijrotha Barrage
- (vii) Kotha Barrage
- (viii) Kesari Barrage

Design team of Central Water Commission, New Delhi led by Chief Engineer, Designs (NW&S) visited the proposed sites in Upper Betwa sub-basin under DPR of Ken-Betwa Project (Phase-II) during the period of 20th to 22th November 2013. The inspection team suggested to delete the Parariya, Narkheraghat and Bijorotha barrages as these project proposals are not techno-economically very attractive. Further, the inspection team suggested to review the project proposals of other barrages also. After detailed discussion with the higher officers of Central Water Commission and National Water Development Agency, it was decided that DPR of Ken-Betwa Link Project (Phase-II) has to be prepared with the following five project components:

1. Lower Orr Dam
2. Neemkheda barrage
3. Barari barrage
4. Kesari barrage
5. Kotha barrage with increased pond level i.e. 396 m

In view of above suggestion of Design team of Central Water Commission, New Delhi, the other project components namely Babnai dam, Tharr dam and Parariya barrage may be reviewed and may be implemented in future in phased manner, as the Govt. of Madhya Pradesh has right to use remaining 432 MCM water in lieu of transfer of water into river Betwa by substitution through Ken – Betwa Link project, Phase-I.

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