

ORISSA STATE WATER PLAN

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INTER STATE AGGREMENTS

INTER STATE AGREEMENTS

Orissa State has inter state agreements with neighboring states of West Bengal, Jharkhand (formerly Bihar),Chattisgarh (Formerly Madhya Pradesh) and Andhra Pradesh on Planning & Execution of Irrigation Projects.

The Basin wise details of such Projects are briefly discussed below:-

(i) Mahanadi Basin:

Hirakud Dam Project:

Hirakud Dam was completed in the year 1957 by Government of India and there was no bipartite agreement between Government of Orissa and Government of M.P. at that point of time. However the issues concerning the interest of both the states are discussed in various meetings:-

Minutes of the meeting of Madhya Pradesh and ORISSA officers of Irrigation & Electricity Departments held at Pachmarhi on 15.6.73.

IBB DIVERSION SCHEME:

3. Secretary, Irrigation & Power, Orissa pointed out that Madhya Pradesh is constructing a diversion weir on Ib river. This river is a source of water supply to the Orient Paper Mill at Brajrajnagar as well as to Sundergarh, a District town in Orissa State. Government of Orissa apprehends that the summer flows in Ib river will get reduced at the above two places due to diversion in Madhya Pradesh. Madhya Pradesh Officers explained that this work was taken up as a scarcity work in 1966-77 and it is tapping a catchment of 174 Sq. miles only in Madhya Pradesh. There is no live storage and Orissa should have no apprehensions as regards the availability of flows at the aforesaid two places.

It was decided that the flow data as maintained by Madhya Pradesh at the Ib weir site and by Orissa at Brajrajnagar and Sundergarh should be exchanged and studied. As Madhya Pradesh catchment below the diversion weir is also considerable, it was decided that in order to have full idea of the flow at the border of the two States, one more gauging site should be established by Madhya Pradesh. It was agreed that after studying such data further problems if any can be discussed.

MAHANADI RESERVOIR PROJECT:

4. The Orissa Officers enquired about the salient features of this project and the utilization of Mahanadi waters that Madhya Pradesh is already making. It was explained to them that the Rudri Diversion Weir was constructed more than 50 years ago. To firm up this irrigation a reservoir on a tributary of Mahanadi was constructed near about 1926 which is known as Muramsilli Reservoir. Subsequently another reservoir known as Dhudhawa tank was constructed on Mahanadi itself in 1958. The Mahanadi Reservoir Project near Gangrail is the third reservoir which is being

constructed primarily for the Bhilai Steel Plant. Small irrigation component is also built into it.

5. The Chief Engineer, Orissa stated that for Mahanadi they have very nearly developed a water use of about 11 M.A.F. as below:

In Sambalpur and Bolangir Districts - 6 lakh acres
Directly from the Reservoir.

Annual irrigation in deltaic regions - 14 lakh acres
After power generation.

The Orissa Officers stated that by constructing Mahanadi Reservoir Project in Madhya Pradesh their water utilization through Hirakud Dam as well as other riparian use down stream should not be adversely affected. Secretary, Irrigation, Madhya Pradesh enquired as to how much was the catchment in Orissa between the Hirakud Dam and the Naraj Weir ? He felt that a considerable quantity of water would be available from this catchment also and that they should have no apprehension of diminution in the availability of water as a result of the Mahanadi Project. It was explained that this catchment is below the Hirakud Dam and is not a good catchment as compared to that above the Dam. Secretary, Irrigation and Power, Madhya Pradesh stated that Orissa might supply details of the catchment and water availability in Mahanadi below Hirakud, and also the following details.

- (i) Hydrological data as contained in the evaluation committee report for Hirakud (1962)
 - (ii) Latest data developed for Hirakud Coordination Committee for regulating the uses between Irrigation and Power.
- (b) It was agreed to supply these data.
6. Utilization of Mahanadi waters was discussed at length. It was explained by Sri Acharya that Mahanadi was the life-line of Chhattisgarh and drains the rice-bowl of the State. The total culturable command in the Mahanadi basin in Madhya Pradesh was more than 10 million acres falling in important districts like Durg, Raipur, Bilaspur, Bastar and Raigarh. These districts comprise extensive areas which grow finest qualities of paddy and not only meet the requirements of the State but also export substantial quantities to the neighboring States. The total catchment of the river at the Hirakud Dam site is 32,200 sq. miles out of which 27,900 sq. miles lie in Madhya Pradesh. As regards contribution of water, of the observed average annual inflows of 33 M.A.F. at Hirakud, 28.6 M.A.F. are contributed by Madhya Pradesh. Having regard to these basic facts even 50% of the culturable command in the Mahanadi basin in Madhya Pradesh is to be brought under irrigation, considerable effort will have to be made by this state to plan and execute works for that target.
7. He further stated that the Master Plan of Mahanadi Basin in Madhya Pradesh was in progress and his State was vitally interested in making optimum use of those waters for the thirsty lands of Chhattisgarh. The Secretary, Irrigation and Power, Orissa stated that the relevant details of Master Plan may be supplied to Orissa as and when ready, since Orissa being a lower riparian state, was vitally interested in all

water uses upstream, particularly in the context of already developed uses in the Mahanadi basin in the State.

8. It was agreed that Officers of both the States should remain in constant touch and keep on exchanging data relating to the hydrology of the Mahanadi river, as well as detailed proposals for the utilization of its waters.

FLOOD WARNING IN MAHANADI BASIN

9. In order to help in flood warning system, it was, considered that flood warning stations (wireless) should be installed by Madhya Pradesh at Raipur and Bilaspur under Flood Control Programme. Expenditure on these stations could be met out of Central Sector provisions under Flood Control. In case of any difficulty on this score, the question of sharing the cost of these warning stations between the two States could be discussed and settled later.

MADHYA PRADESH'S SHARE IN HIRAKUD POWER

10. The Secretary, Irrigation and Power, Madhya Pradesh raised this question and said that although Hirakud Project has been completed many years back, Madhya Pradesh has not received till today its due share in the power that is generated there. He said that there were well accepted principles for determining the power share of the concerned States in an Inter State river. These principles are, the water and the fall contributed by each State. He pleaded with the Orissa Officers that they should accept the just and reasonable claim of Madhya Pradesh calculated on the above principles.
11. Secretary, Irrigation and Power, Orissa said that Madhya Pradesh was offered 5M.W. of power from Hirakud which they have accepted since long and this question therefore cannot be reopened again at this stage. Secretary, Irrigation and Power Madhya Pradesh stated that discussions about sharing Hirakud Power have been going on for the past nearly 20 years. In the early fifties when these matters were being discussed there was no awareness in the State about its power requirements in the eastern region nor was the claim pressed on the basis of the above principles that have been recognized throughout the World. Full scale discussions between the two states on this questions were also not held and the matters were pursued through correspondences which was protracted and intermittent. He said that the offer of Orissa to supply 5M.W. of power was no doubt there but Madhya Pradesh had never accepted it finally. Since Madhya Pradesh contributed 87% of the catchment and 88% of the water at the Hirakud site, the question of sharing the Hirakud Power was an important one from the point of view of Madhya Pradesh and it could ill afford to treat it as closed. Secretary, Irrigation and Power, Orissa Government regretted that he could not agree to this view.

Summary Record of discussions between officers of Madhya Pradesh and Orissa Government held at Bhubaneswar on 28.5.76 and 29.5.76.

1. Review of action taken on the minutes of Pachmarhi meeting held on 15.6.73
2. Supply of Hirakud Power to Madhya Pradesh

15. Madhya Pradesh Officers wanted that arrangements for supply of 5M.W. of Hirakud Power should be completed expeditiously. Orissa Officers indicated that the government of Orissa stood by its commitment to supply 5M.W. of Hirakud Power to Madhya Pradesh. They indicated that it was with a view to developing good neighborly relations and meeting the requirements of Madhya Pradesh that Orissa's Chief Minister had agreed to supply 5 M.W. of Balimela Power even though the supply of this Power, strictly speaking, was not obligatory. Madhya Pradesh Officers pointed out that 5 M.W. of Hirakud Power was against Madhya Pradesh's claim of share of power from Hirakud Dam. Hirakud Dam had submerged large areas of Madhya Pradesh and 87% of its water flows from Madhya Pradesh's catchment. Therefore, Madhya Pradesh had a claim on power from Hirakud. They had pressed for claim of minimum of 24% of power generated at Hirakud. They contended that allocation of 5M.W. of Power by Orissa from Hirakud was against this claim and would remain so irrespective of the point of supply across the border. The Orissa Officers did not agree with this contention of Madhya Pradesh. As stated by them earlier they agreed to supply the power as a gesture of good neighborly relation. It was, however, understood that with the available transmission facilities and the extent of demand that could be covered with the existing sub-transmission system, the maximum drawl has been possible up to about 1.7 M.W. Madhya Pradesh Electricity Board officers stated that this was explained to Orissa State Electricity Board Officers in the meeting held at Bhubaneswar on 2.1.1976 and it was agreed that supply at Raigarh would be made available at 33KV by laying a line from Brajarajnagar, as such a line had already been proposed by Orissa State Electricity Board as part of an R.E.C. Scheme. Chairman, Orissa State Electricity Board stated that R.E.C. Scheme for such a line has not been sanctioned.
16. Madhya Pradesh Officers in pursuance of the above, wanted that supply of 5M.W. of Hirakud Power should be made from Brajarajnagar side in the interest of beneficial utilisation of power by Madhya Pradesh. Orissa Officers agreed to the suggestion. Orissa will step up the Brajarajnagar Sub Station capacity from 11 KV to 33 KV. And construct a 33 K.V. transmission line up to the border (about 50 Kilometres)., Madhya Pradesh will erect its own 33 K.V. transmission line from Raigarh to Orissa border (about 11 Kilometres). The cost of the line in either State would be borne by the respective States. Orissa agreed to execute the construction of the transmission line as expeditiously as possible.
17. As regards the rate for supply of this power it was agreed that supply would be made at the actual cost of generation at Hirakud Power Station plus the pooled cost of E.H.T. Transmission incidence at 220 K.V. and 132 K.V. in Orissa State Plus the transmission incidence on the cost of 33 K.V. line up to the border. It was agreed that the 33K.V. line would be intended only for supply of power to Madhya Pradesh and in case any other load is put by Orissa on this line, the transmission incidence would be prorated accordingly.
18. Orissa State Electricity Board will furnish to the Madhya Pradesh Electricity Board the data for arriving at the actual cost of generation and cost of transmission incidence as outlined in Para 17 above. These figures can be checked by Madhya Pradesh who should, after scrutiny, furnish their comments/note of acceptance.

19. It was clarified by the Madhya Pradesh Electricity Board that payments have been made to Orissa State Electricity Board at an ad-hoc rate of 8 paise per Unit up to April, 1976 in respect of power supply by Orissa. As regards the rates there was a difference of opinion between Madhya Pradesh and Orissa Officers. It was the contention of Madhya Pradesh Officers that this should be treated as supply against the 5 M.W. of power due to them from Hirakud. The cost should, therefore, be calculated at Hirakud rates. Orissa Officers, on the contrary, took the view that the supply was made from Balimela instead of from Hirakud because transmission facilities did not exist for wheeling of power from Hirakud. Hence, Madhya Pradesh should pay for this power at Balimela rates and not at Hirakud rates. Madhya Pradesh Officers stated that the supply was agreed to by Orissa in the context of Madhya Pradesh share of 5M.W. in Hirakud and the costing basis should be as already agreed to in Para 17 above irrespective of the point across the border where the supply is being availed to this extent. Both the teams agreed that this difference of opinion may be left to be reconciled at a later date.
20. Madhya Pradesh Officers said that considering the catchment and submergence in their State, they are entitled to a share of Hirakud Power. This share according to them, will not be less than 24% of the total generation. They said that a proposal for this minimum share has already been made to the Government of Orissa in 1974. Orissa Officers stated that this claim was not acceptable to the Government of Orissa. The Project was neither conceived nor executed as a joint project. No stipulation was made for supply of power to Madhya Pradesh. In 1954, Madhya Pradesh wanted supply of some power on commercial terms and even this was in the nature of an enquiry. Over the years, Orissa has developed complete utilization of Hirakud power and, as a matter of fact, power supply has frequently been inadequate to meet the demand in the area. So far as submergence is concerned, it has been fully compensated and the affected people have been rehabilitated at the project's cost. At this stage, therefore Orissa was unable to agree to Madhya Pradesh's claim to a share of more than 5 M.W. of Hirakud Power. It was a separate question and could be considered separately from time to time.
21. Thereafter, Madhya Pradesh Officers stated that in case load has developed around Hirakud, Orissa should give Madhya Pradesh's share of power in Hirakud at other points. They also stated that Orissa had agreed to supply 5 M.W. of power from 1963. As no power was supplied during 1963 to 1975, this power utilized by Orissa all these years should now be supplied to Madhya Pradesh in addition, in a phased manner. Orissa Officers stated that this was not acceptable to them since Orissa had not agreed to treat the supply as Madhya Pradesh's share of Hirakud Power. The supply was contingent on availability of transmission facilities and agreement on rates. As there was a difference of opinion, the matter was left for further examination by both the State Governments.
3. DEVELOPMENT OF CONSUMPTIVE USE ON THE MAHANADI SYSTEM BY MADHYA PRADESH AND ITS IMPACT ON THE WORKING OF THE HIRAKUD RESERVOIR.
22. Orissa Officers expressed their apprehension that by progressive development of consumptive use of Mahanadi waters upstream of Hirakud, the use and operation of the Hirakud Reservoir as was originally envisaged is getting seriously disturbed.

They stated that it was necessary that the pattern of use from the Hirakud Reservoir that has developed during these years is protected and the upstream projects are planned, executed and operated accordingly. It was particularly mentioned by them that the non-monsoon flow into the reservoir has got substantially reduced and to that extent, the utility of the project is getting progressively limited.

23. Madhya Pradesh Officers stated that as much as 28,000 square miles of the Hirakud catchment lies in Madhya Pradesh and only about 4,000 square miles of the catchment lies in Orissa. They cannot, therefore, accept that Madhya Pradesh could not utilize any water from their catchment for all time to come. According to them it was necessary to develop consumptive use of water in Madhya Pradesh from their catchment and that there could be no objection to plan utilization of the waters not committed for the Hirakud Project as per the Project Report.
- 24 They further stated that the post-monsoon inflow into Hirakud was of the order of 1.2 MAF. Orissa has 4000 square miles of its own catchment upstream which would give an annual inflow of more than 4 MAF. Out of this, Orissa could easily store in its own territory whatever water is needed to meet the deficiencies of post-monsoon inflow even after full development of irrigation upstream. They added that interception by upstream reservoirs would substantially get compensated by regenerated flows from irrigated areas.
- 25 They stated that the capacity of the reservoir being 4.7 MAF it could regulate about 6 to 7 MAF of water for consumptive use during the year. But Orissa is stated to have developed a water use of 11MAF for irrigating 20 lakh acres. How much of this water use was from Hirakud reservoir and how much from the drainage are below Hirakud was not known to Madhya Pradesh. The data pertaining to the water uses of 11MAF may be supplied by Orissa.
26. Orissa Officers stated that the full potential of Hirakud Dam Project as envisaged in the Project Report should be available without incurring further expenditure. The full potential of Hirakud Dam Project as envisaged in the project report has not yet been realized since the lift area proposed to be covered under the project has been deferred. They further stated that with 4.7 MAF it is possible to regulate much more than 6 to 7 MAF of water for consumptive use since in addition to 4.7 MAF of live storage there is about 1.5 MAF flow (mean for 19 years, namely, 1947-48 to 1965-66) into the reservoir in the post-monsoon season. Due to low head during the monsoon period, the average discharge through the power house is much more than the average discharge during the other months. Evaporation from the reservoir is also to be accounted for. Thus, a total use of about 11 MAF has already been developed through this reservoir. But the irrigation commitment against this use is in respect of about 4.00 lakh acres in Khariff and about 2.60 lakh acres in rabi. This is without the use of water for the lift irrigation ayacut (which has been deferred for the time being). The argument that Orissa should use 4000 square miles of its catchment for ensuring adequate post-monsoon inflow into the reservoir is not valid because reservoirs cannot be constructed to store water from the entire 4000 square miles. Besides the irrigation needs of these areas will also have to be taken into account.

27.Orissa Officers further stated that the suggestion of Madhya Pradesh regarding construction of storage reservoirs upstream of Hirakud in their territory was unacceptable to them because (i) storage reservoirs in Orissa territory would mean substantial additional cost, (ii) the possibility of such sites remains to be ascertained, and (iii) after the Hirakud project was sanctioned on certain assumptions of inflows, the upper riparian State should not interfere with the inflows in a manner that affect the assumptions and should not ask the lower riparian State to compensate inflow losses at substantial additional cost. They further stated that such a right on the part of Madhya Pradesh could be exercised only if and to the extent Orissa's utilization from the Hirakud Reservoir exceeded the full development potential contemplated in the Project Report.

28.Madhya Pradesh Officers reiterated their stand as contained in paragraphs 23,24 and 25 and they also did not accept the argument regarding cost. Orissa Officers, on their part, reiterated their stand as contained in paragraphs 22, 26 and 27. Since there was not reconciliation between both points of view, the matter, it was agreed, would be further re-examined by both the States.

29.Orissa Officers pointed out that they would like to have details of the upstream reservoirs that have been developed between 1957 and till now, their live capacity, their spillway capacity and the quantum of dry weather flow they intercept. They would also like to know the ayacut, both kharif and rabi, in each case along with similar information for the diversion weirs that have been built up during this period. Madhya Pradesh Officers wanted to know if in actual practice, there has been a fall in the dry-weather flow of the Hirakud reservoir and the details thereof. It was agreed that data on these subjects should be exchanged expeditiously.

Discussions held on 27.04.1983 at Bhubaneswar attended by Sri Arjun Singh, Chief Minister, M. P. Sri Janaki Ballabh Patnaik, Chief Minister,Orissa and Sri Niranjana Patnaik, Minister of State for Irrigation & Power, Orissa along with the officials of the two states (as per list enclosed) the following agreement was reached.

1 Ib Project (Orissa Project)

Madhya Pradesh agrees to spare 25 percent run off from the catchment area drained by Ib river and lying in its territory under the proposed Ib dam project (Approximate Latitude 23° -12'N. Longitude 84° -06' E).Orissa agrees to fix full reservoir level of Ib dam at R.L. 272.50 m. The land in Madhya Pradesh would, however, be acquired up to R.L. 273.0 metres to allow for back water impact. In exceptional cases, if areas lying above R.L.273.0 Min the foreshore area of the reservoir in Madhya Pradesh are damaged due to floods, the damage being solely attributable to the construction of Ib dam, suitable compensation will be paid by Orissa. Madhya Pradesh may generate hydro-power at the head works of Ib project entirely at its own cost without paying for the cost of storage, but bearing the full cost of all additional civil and electrical works required for generation of hydro-power. Madhya Pradesh will make its own arrangement for operation and transmission of power generated. Project Report for power part will be prepared by Madhya Pradesh for which Orissa will extend necessary cooperation. However, the regulation of the Ib reservoir shall be done by Orissa as per operational and irrigation requirements.

2. Sapnai Project (Madhya Pradesh project)

Orissa agrees to spare 70 percent of run off from its catchment area for use in Madhya Pradesh at Sapnai dam (Approximate Lat.21°-53'-45"N. Long.83° -30'-05"E).Madhya Pradesh may formulate Sapnai Project leaving an upstream reserve to the extent of 30 percent of run off from Orissa catchment for use in Orissa State submergence due to project is to limited Madhya Pradesh territory only.

3. Kurnala Project (Joint Project)

Madhya Pradesh and Orissa agrees to implement the Kurnala Project as a joint irrigation scheme, where the catchment area of Kurnala is about 45 Sq. miles (Approximates Lat. 21°-55'N Long 8°-33'E) to irrigate about 3000 acres in Madhya Pradesh and about 9000 acres in Orissa. The cost of head works of the project shall be shared in proportion of the ultimate irrigation benefits derived by each State.

4. Upper Jonk Project (Orissa Project)

Orissa agrees to supply water through the left bank canal of Upper Jonk Project at Orissa- Madhya Pradesh border to support irrigation in an area of 2000 acres in Madhya Pradesh territory on charges to be determined. The requirement of rest of the areas in Madhya Pradesh may be met by Madhya Pradesh by utilizing the waters of the tributaries of Jonk river upstream of lower Jonk Project (Orissa) draining that area subject to a maximum utilization of 40 square miles of catchment. Orissa agrees to consider request by Madhya Pradesh for submerging Orissa land for the above projects(s) if any.

5. Lower Jonk Project (Joint Project)

Orissa and Madhya Pradesh agree that a dam across Jonk river near Girina (Approximate Lat.21° -10'N.Long.82° -37'-30"E) should be constructed as a joint Project and share the cost of dam, reservoir and available run off in the ratio of 30 percent(Orissa) and 70 percent (Madhya Pradesh). The cost of head regulators and canal system will be borne by the respective beneficiary states). The surveys and investigation of Girina dam will be carried out by Madhya Pradesh.

6. Ong Project (Orissa Project)

Madhya Pradesh agrees to spare 20 percent of run off from its catchment area lying in Ong Sub-basin for use by Orissa at the proposed dam site across Ong river near its confluence with Surangi river (Approximate Lat.21°-05'-29"N. Long 83°-03'-06"E). Orissa agrees to fix the full Reservoir Level of Ong reservoir at RL219.0 metres Orissa may however fix the full reservoir level at R.L.220 metres provided the reservoir does not submerge existing irrigated area in Madhya Pradesh for which necessary field verification will be carried out jointly.

7. Jira Project (Orissa Project)

Madhya Pradesh agrees to spare run off from 14.25 Sq.miles of its catchment lying in Jira sub-basin for use by Orissa at proposed Jira dam project (Approximate Lat. 21°-23'N.Long 83°-26'E) with full reservoir level fixed at R.L.697.5 feet.

8. Sahajbahal Project (Joint Project)

Orissa and Madhya Pradesh agree to implement Sahajbahal Project as a joint irrigation scheme where the catchment area of the river is about 22 Sq. miles (Approximate Lat. 21°-21'-15"N. Long. 83°-21'15"E) in Madhya Pradesh. The cost of joint works and irrigation benefit shall be shared in the ratio of 70 percent (Madhya Pradesh) and 30 percent (Orissa).Survey and Investigation of this joint project will be carried by Madhya Pradesh.

9. Lower Kolab Project (Joint Project)

x x x

10. Back water studies for Hirakud Dam.

Both the State agree to carry out fresh back water studies for the Hirakud reservoir with a view to ascertaining the extent of submergence caused by Raigarh district of Madhya Pradesh at times of high floods. The Central Water & Power Research Station, Pune may, if necessary, be associated with these studies.

11. Establishment of Joint Control Board

Madhya Pradesh and Orissa agree to establish a Joint Control Board to review the progress from time to time of survey, investigation, planning, execution and operation of Joint Inter-State Irrigation and or Power Project(s) and to discuss and resolve any issues.

12. Supply of Power

It is agreed that supply of 5 MW power which was committed by the Government of Orissa previously will be resumed.

As the M. P. State Electricity Board are keen to have power from Hirakud, this will be supplied at Hirakud Bus Bar. The cost of power will be the cost of generation at Hirakud Power House. The cost would be reviewed annually by the representatives of the two Boards.

The question of payment of Electricity Duty by M.P. Electricity Board for future supply by Orissa State Electricity Board of 5M.W. power would be referred to the Department of Power, Government of India for their guide lines.

CONCLUDING NOTES:

After completion of Hirakud Dam Project, many Irrigation Projects have been constructed by Government of Madhya Pradesh intercepting the flow of water to the Hirakud Reservoir. In addition to the above projects some Projects are under construction and some new proposal are for construction in near future.

Chief Minister, Orissa took up the matter with Hon'ble Minister, Water Resources, Govt. of India on 7.7.2000 requesting him to issue an appropriate direction to Madhya Pradesh Government as follows:

- a) Madhya Pradesh Government should allow a flow of 2.0 million Ac.ft. during non-monsoon period for irrigation and generation of powers.
- b) Madhya Pradesh Government should make arrangements to intimate in advance if there is contemplation to release 1.00 lakh cusecs of water or more to the Hirakud Dam indicating the exact quantity and the time of release so that appropriate action can be taken at the dam site.
- c) Till construction of Ib Dam project is completed, Madhya Pradesh Government release water in Ib river for drinking water purpose in non-monsoon period.
- d) Any new proposals proposed to be taken up by Madhya Pradesh Government should cleared by Govt. in India only after concurrence of Government of Orissa.
- e) During the flood season, when there is rain in the downstream, Hirakud can not release water. The safety of dam is threatened with reservoir level above 620 ft. Under such a condition, it was agreed during a meeting on 23.6.2000 between the officials of Orissa and Madhya Pradesh at Raipur that the dam authorities in Madhya Pradesh would try to absorb the incoming flood in their reservoirs on request from Government of Orissa. This should be put to action early.

During the visit of Ministerial delegation of Chhatisgarh state to Bhubaneswar on 20.12.2000 these facts have been intimated to them.

II. **Brahmani Basin:**

Although this is an inter State river with Jharkhand, no such inter-state agreement on Brahmani river have been concluded.

III. **Baitarani Basin:**

A very small portion of the catchment lies within Jharkhand State, and there is no such inter state agreement on Baitarani.

IV. **Burhabalangda Basin:**

No such inter state agreement on Burhabalang Basin has been concluded.

(V) **Subarnarekha Basin:**

Subarnarekha Multipurpose Project is an inter-state Project being executed on the basis of tripartite agreement (TPA) 1978 between three Co-basin states of Jharkhand (Erstwhile Bihar), Orissa and West Bengal. The Project was cleared by the Planning Commission, Govt .of India for Rs.790.32 crores for Orissa portion of works andRs.223.36 Crores towards share of Orissa in Joint component of works to be executed in Jharkhand state at 1993 price level.

TRIPARTITE AGREEMENT ON SUBARNAREKHA

AGREEMENT ON THE UTILISATION OF THE WATER RESOURCES OF SUBARNAREKHA - KHARKAI BASIN, WHERE BIHAR, ORISSA AND WEST BENGAL ARE CO-BASIN STATES, REACHED BY THE CHIEF MINISTERS OF BIHIAR, ORISSA AND WEST BENGAL AT NEW DELHI ON 7.8.1978.

The State Governments of Bihar, Orissa and West Bengal being desirous of attaining the optimum utilization of the water resources of the Subarnarekha-Kharkai Basin and recognizing the need thereof for fixing and delimiting the rights and obligations of each State in relation to others concerning the use of these waters and taking note of the agreements, dated 17th January 1976 and 25th October 1976 reached by the Chief Ministers of Bihar and Orissa and the agreement, dated 19th July 1978 reached by the Chief Ministers of Bihar and West Bengal approve the tripartite agreement set out herein under.

- 1.1. The 75 per cent dependable annual yield has been assessed at Kokpara to be 4.5 million acre feet. The Eastern Zonal Council in their 9th meeting on 28th January 1965 allocate 3.2 million acre feet to Bihar, 1.2 million acre feet to Orissa and 0.1 million acre feet to West Bengal. These allocations are accepted by the respective three States.
- 1.2. The three States take note and accept the recommendations of the Committee set up under the Chairmanship of the Chairman, Central Water Commission and consisting of the Chief Engineers of Bihar, West Bengal and Orissa according to which the water resources of the Subarnarekha basin below Kokpara at 75% dependability have been allocated to the co-basin States as below.

1.	Bihar	2.7 lakh acre feet.
2.	Orissa	2.9 lakh acre feet
3.	West Bengal	5.9 lakh acre feet.
- 1.3. The resources apportioned amongst the three riparian States, above and below Kokpara, can be utilized by the respective States in any manner they choose, with out exceeding the respective limits of their allocated resources.
- 1.4. If there is any shortage or surplus over the currently estimated annual yield at 75% dependability at Kokpara in any water year, then this shortage or surplus will be shared by the three co-basin States of Bihar, Orissa and West Bengal. According to the agreement already entered into by the 3 co-basin States, the water resources at Kokpara at 75% dependability have been distributed between Bihar, Orissa and East

Bengal in the proportion of 32:12:1. It is agreed that in the event of surplus over the currently estimated annual yield at 75% dependability at Kokpara, the surplus water will be allocated between Bihar, Orissa and East Bengal in the proportion of 8:1:1. However, in case of shortage, it will be shared by the States of Bihar, Orissa and East Bengal in the proportion of 32:12:1. In the areas below Kokpara, both shortages and surpluses will be shared by the three States of Bihar, Orissa and West Bengal in the proportion of 2.7:2.9:5.9 respectively.

2. Utilisation of Water Resources at Kokpara

2.1.1 The storage capacity of the dam as proposed by Bihar on the river Kharkai (herein after referred to as the Kharkai Dam) will be 0.68 million acre feet out of which Bihar and Orissa will be entitled to 0.50 million acre feet and 0.18 million acre feet respectively. The cost of the Kharkai Dam and its appurtenant works will be shared between Bihar and Orissa in the proportion of 5.00:1.80

2.1.2. Orissa will extend the required assistance and co-operation in acquiring the land in Orissa that will be submerged by the Kharkai Dam. The costs of such acquisition and of consequential rehabilitation will be included in the cost of the Kharkai Dam. The scale and standard of rehabilitation will be fixed in due course by mutual agreement between Bihar and Orissa.

2.1.3. Upstream of the Kharkai Dam, Bihar and Orissa will limit their utilization to 0.05 million acre feet and 0.20 million acre feet respectively.

2.1.4. The Management of the Kharkai Dam will be as follows:

- (i) For sharing the water in the dam the year will begin from the 1st day of July.
- (ii) The need for Khariff irrigation in Bihar and Orissa will be given the first priority and water released against their share on such needs as indicated by Bihar and Orissa.
- (iii) The balance water available out of the allocations of Bihar and Orissa, after the khariff season, will be drawn by the respective States for Rabi and Summer irrigation.
- (iv) Bihar and Orissa will be free to fix the priority for the utilization of its share for industrial and other uses, without affecting the interest of the other State.
- (v) The shortage or surplus over the estimated annual yield at 75% dependability, if any, during the water year will be shared by Bihar and Orissa in proportion to their respective interests in the storage.

2.2.1. Over and above the conservation storage, the Chandil Dam will have a flood storage of 0.375 million acre feet for flood moderation benefits in West Bengal and Orissa. The three co-basin States of Bihar, Orissa and West Bengal will jointly request the Government of India to meet the cost of the flood moderation portion of the dam fully.

2.2.2. Of the allocated resources of 1 lakh acre feet for West Bengal at Kokpara, 50,000 acre feet will be utilized upstream of the Chandil Dam. For the remaining 50,000 acre feet, 10,000 acre feet for Khariff and Rabi irrigation will be made available by Bihar, free of charge, to West Bengal through the left bank high level canal system

of the Chandil Dam. The balance 40,000 acre feet shall be utilized by West Bengal below Kokpara. To facilitate this utilization, storage space of 25,000 acre feet shall be provided for West Bengal in the Chandil Dam, a limit which will not be exceeded in any water year and for which the proportionate cost of the dam and appurtenant works shall be borne by West Bengal. The component of 15,000 acre feet of water will be utilized by West Bengal from the run of the river.

- 2.3.1. Bihar will construct a barrage at Galudih with one canal on each side. Orissa will be entitled to draw through the right bank main canal its share of water in the Kharkai Dam. In addition, Orissa will also draw from this barrage the run of the river flow as available for utilization in its territory, out of which up to 0.10 MAF will be during the non-monsoon period. The drawl from this barrage by Bihar in the non-monsoon period will be up to 0.06 MAF. Provided that if the flow in any non-monsoon period is less than 0.16 MAF the storage shall be shared between Bihar and Orissa in the proportion of 3:5. Further provided that until the Kharkai Dam is constructed and put in to operation all excesses over 0.16 MAF in the non-monsoon flow at Galudih barrage shall be utilized by Orissa. This will be exclusive of the releases to be made from Chandil Dam for West Bengal as per Para 2.2.2. above.
- 2.3.2. The cost of the Galudih barrage and its appurtenant works shall be shared between Bihar and Orissa in proportion to the annual designed withdrawals, that is to say, on cusec-day basis.
- 2.3.3. The right bank main canal from the Galudih barrage will be a lined one and will be so designed as to involve minimum land acquisition in Bihar. The cost of the canal shall be shared between Bihar and Orissa on the cusec-mile basis.
- 2.3.4. The execution of the Kharkai and Chandil Dam and Galudih barrage project along with the right bank main canal up to Orissa border will be taken up together at a time. The arrangements for the execution of the Kharkai Dam will be as may be decided by the Chief Ministers of Bihar and Orissa.
- 2.3.5. Until the Kharkai Dam is constructed and put into operation, Orissa may not be able to draw its quota according to its need. If such withdrawal by Orissa during the non-monsoon period does not come to 0.23 million acre feet at Galudih barrage, the balance shall be made available to Orissa by Bihar at the Galudih barrage in the non-monsoon period by a judicious operation of the Chandil reservoir, until the Kharkai Dam is executed and put into operation.
- 2.4. Since the interests of more than one State have been admitted within each of the utilities of Kharkai Dam, Chandil Dam and Galudih barrage, their regulations shall be conducted as under:
 - 2.4.1. There will be a joint regulation of the Kharkai Dam by a Committee of a Chief Engineer nominated by Bihar, a Chief Engineer nominated by Orissa and a Member of the Central Water Commission who will be its Chairman. The Committee will formulate its rules and procedure.

- 2.4.2. There will be a joint regulation of the Chandil Dam and Galudih barrage by a Committee consisting of the Chief Engineers, each nominated by the three co-basin States and a Member of the Central Water Commission who will be its Chairman.
- 2.4.3. To achieve flexibility in the operation of the Kharkai and the Chandil reservoirs and the Galudih barrage in the best interest of all the States, these two Committees as per Clauses 2.4.1 and 2.4.2 may make diversion of supplies from one or the other reservoir subject to the condition that the share of each State during the water year will not be affected adversely.
- 2.4.4. There shall be a Joint Control Board consisting of the following members for execution of the Galudih Joint Project which comprises of the Galudih barrage and the right bank main canal up to Orissa boarder.
- (i) Chief Ministers of Bihar and Orissa (alternate Chairman for one year)
 - (ii) Irrigation Ministers of Bihar and Orissa
 - (iii) Chief Engineers of Irrigation of Bihar and Orissa
 - (iv) Irrigation Secretaries of Bihar and Orissa
 - (v) Finance Secretaries of Bihar and Orissa
 - (vi) Collector of Mayurbhanj and Deputy Commissioner of Singhbhum
 - (vii) Other Officers as may be nominated not exceeding two each by Bihar and Orissa.
 - (viii) The Project Engineer of the Joint Project (by whatever designation he may be called)- Non-Member-Secretary.

The Joint Control Board of the Galudih Joint Project will function as per the provisions made in the Bipartite Agreements between Orissa and Bihar, dated 17th January 1976 and 25th October 1976.

3. The water resources below Kokpara allocated amongst the three riparian States shall be utilized subject to the provisions as under
- 3.1 West Bengal shall construct a barrage across the Subarnarekha at or near Jhareswarpur to irrigate lands during the Khariff and Rabi season in the district of Midnapur by utilizing its allocated resources of 40,000 acre feet of water above Kokpara (vide Clause 2.2.2) together with its allocated resources below Kokpara.
- 3.2 Orissa will be entitled to draw any part of its share as per Clauses 1.1 above by releases in the river through all the hydraulic structures.
- 3.3. Regarding flood moderation and the recognized need for flood relief, Orissa and West Bengal agree to discuss and plan for a simultaneous and co-ordinated execution of an embankment system on either side of Subarnarekha in consultation with C.W.C., Ministry of Railways and Ministry of Transport, Government of India.
4. Bihar may also develop the Subarnarekha Valley for inland water transport as this will provide a direct sea-facade to the State.
5. West Bengal may construct a weir on the Subarnarekha above Chandil for meeting West Bengal's need within their allocated share

6. West Bengal shall not construct any dam on the main Subarnarekha river above the Chandil Dam.
7. It is agreed that all these three co-basin States will take effective steps to control pollution in the river originating in their respective territories.
8. This tripartite agreement shall be given effect to in conjunction with the other agreements already reached and appended hereto by co-basin States, and in the event of any repugnance the terms of this tripartite agreement will prevail.
9. It is also decided that in the event of any dispute relating to this agreement and the inability of the three States to settle the matter amicably through mutual discussions a sole arbitrator of the standing of a Supreme Court Judge would be appointed by the President of India to settle the matter and his decision shall be final and binding on all the three States.

The above joint component of works as per T.P.A. was started during August 1982 with financial assistance of World Bank and was almost stopped after closure of World Bank Credit in 1992. Although about Rs.400 Crores have been spent, Orissa is unable to get any benefit due to non-completion of works by Bihar (Jharkhand).

After creation of Jharkhand State, all out efforts have been taken up by both the States by conducting series of meetings with the intervention of Ministry of Water Resources, Govt. of India as well as Central Water Commission to resolve the bilateral issues and early resumption of Joint component of works.

VI. **Rushikulya Basin:**

The river originates within Orissa territory and as such there is no inter state aspect for Rushikulya river.

VII. **Bahuda Basin:**

Item III-(a) of the Proceedings of the meeting between Chief Minister of A.P. and Orissa at Hyderabad on 15th December 1978, read as follows:

- (a) The State of Orissa seeks clearance for full utilization of water in its territory from Bahuda river.
- (b) As utilizations in Orissa territory affects existing irrigation system through river channels and development of new ayacut in Andhra Pradesh territory, it is necessary to provide appropriate storage to protect such existing irrigation. Andhra Pradesh agrees to construct at its own cost such storage in its territory without involving any submersion of Orissa territory. The storage scheme, however, needs some other ancillary works for its functioning and as such Andhra Pradesh seeks concurrence of Orissa for the following.

- (i) The construction of regulator across Bahuda river below Kalingadola anicut near about Kalabad village in Orissa territory with submersion in river bed and protected by flood banks.
 - (ii) The construction of a second regulator on Boginadi near Sappanga village in Orissa territory with submersion in river bed and protected by flood banks.
 - (iii) The construction of a diversion channel of appropriate capacity connecting the regulators (i) and (ii) above.
 - (iv) The construction of a flood flow channel of appropriate capacity not exceeding 2,000 cusecs capacity from the regulator at Kalabad village up to Andhra Pradesh-Orissa border within Orissa territory.
 - (v) Orissa to make available to Andhra Pradesh 1.5 tmc (including lake losses) of water during June to December every year through the flood channel.
- (c) The State of Andhra Pradesh agrees to the construction of Schemes as at (a) by Orissa subject to protection of 1.5 tmc for schemes at (b) and the State of Orissa agrees to the scheme as at (b) subject to Andhra Pradesh meeting the cost of construction including cost of land acquisition.
- (d) Andhra Pradesh also agrees to utilization of the flood flow canal in Orissa territory for irrigation in its territory provided the extra water for such irrigation will be out of the share of Orissa and Orissa pays to Andhra Pradesh proportionate cost of flood flow channel.

After detailed discussions held on 10.6.92, 1.02.1997, 10.7.99 and 23.6.2000 it was agreed that head works of the storage schemes will be located in A.P. The matter regarding survey work for construction of flood embankment in Orissa territory and the L.A. matters are still under discussion.

VIII Vansadhara Basin

Interstate conference of Chief Ministers of A.P. and Orissa held on 17.7.61 and 18.7.61 at Hyderabad.

Item.4:Neeradi Project on the Vamsadhara River:

The Andhra Pradesh representatives stated that they wanted to execute the irrigation Project at Neradi, which entails the acquisition of 106 acres of land in Orissa territory and they wanted Orissa Government's concurrence to go ahead with the Project. It was indicated that it might be possible to irrigate some areas of Orissa from this Project. On behalf of Orissa it was stated that while Orissa Government had no objection, they wanted to safe-guard against the water logging of their area and therefore had asked for certain details. As soon as these details are received, Orissa Government would communicate their concurrence to the Project.

The matters concerning the design of the Barrage and other structures, the Back water effect, the sharing of water, water logging problem, detail design's and land details for the flood banks within Orissa territory are under discussion between officials of A.P. and Orissa held on 4.9.62, 15.12.78, 27.7.80, 22.6.81, 10.1.84, 15.1.87, 8.4.88, 22.11.91, 10.6.92, 30.12.94, 21.11.95, 21.1.96, 1.2.97, 10.7.99 and 15.2.2001.

IX **Nagavalli Basin:**

Jhanjavati Project in A.P.

In the meeting held on 24.9.75 between Chief Ministers of A.P. and Orissa A.P. Govt. wanted clearance of G.O.O to take up Jhanjavati Project in A.P. territory.

As per the meeting held on 15.12.78 between Chief Ministers of Andhra Pradesh and Orissa at Hyderabad the sharing of water is as follows:

II.- Jhanjavati River

In regard to Jhanjavati river the yield will be shared on 50:50 basis between Andhra Pradesh and Orissa. This yield is approximately assessed as 8 tmc. A revised project report for Jhanjavati utilizing approximately 4 TMC of water will be prepared by Andhra Pradesh providing gated spillway to keep submersion in Orissa territory to the minimum. The Government of Orissa agree to submersion subject to Andhra Pradesh paying compensation for land and property and rehabilitation expenditure according to Orissa Government norms prevailing during the period of acquisition and rehabilitation.

In the subsequent meetings held on 27.7.1980, 22.11.1991, 30.12.94, 1.2.97, 10.7.99, 15.2.2001, 25.6.2001, 29.1.2002, 23.12.2002, the technical issues regarding fixation of FRL, finalization of design flood, extent of back water, interstate boundary and about the boundary of five forest blocks were discussed.

The modalities regarding rehabilitation of displaced persons and the scheme for diversion of forest land for Project use has been under finalization.

(X) **Indravati Basin (Godavari):**

DECISION OF THE GODAVARI WATER DISPUTE TRIBUNAL AS MODIFIED BY THE EXPLANATION AND GUIDANCE GIVEN IN ITS FURTHER REPORT.

Final order of the Tribunal:

The Tribunal hereby passes the following Order:-

Clause I to Clause IV

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Clause V

The following Agreements so far as they relate to the Godavari river and Godavari river basin be observed and carried out:-

- A. Agreement dated the 19th December, 1975 between the States of Karnataka, Maharashtra, Madhya Pradesh, Orissa and Andhra Pradesh annexed hereto and marked Annexure "A" agreed into the clearance of projects for the utilization of waters of the Godavari river and its tributaries in accordance with:-
- (d) Agreement between the States of Orissa and Madhya Pradesh on the 9th December, 1975 – Annexure IV.
- D. Agreement dated the 15th December, 1978 between the States of Orissa and Andhra Pradesh annexed hereto and marked Annexure "D", subject to the provisions of the agreement dated the 2nd April 1980 mentioned below.
- F. Agreement dated the 11th July, 79 between the states of Orissa and Madhya Pradesh annexed here to and marked Annexure "F"
- G. Agreement dated the 2nd April, 1980 between the States of Andhra Pradesh, Madhya Pradesh and Orissa annexed hereto and marked Annexure "G"

ANNEXURE "A"

Godavari River Basin Agreement

Whereas certain discussions have taken place amongst the five states of Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra and Orissa, subsequent to meeting of 19th July, 1975 held at New Delhi on the use of the waters of the Godavari river and its tributaries, and

Whereas in pursuance thereof the following agreements have been entered into between the States hereinafter mentioned viz.

- (d) Agreement between the States of Orissa and Madhya Pradesh on 9th December, 1975- Annexure IV.

Whereas the States of Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh and Orissa have considered the bilateral agreements in their meeting on 19th December 1975 at New Delhi.

Now the States of Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh and Orissa hereby agree to the sanction and clearance of projects for the utilization of waters of Godavari river and its tributaries in accordance with the said agreements, provided that nothing in these agreements will be treated as a concession by any State in respect of any of its contentions in any other water disputes with any other State or with respect to the dispute regarding the sharing of the balance quantity of water in the Godavari and its tributaries. State in this agreement means any of the aforesaid five States.

The five basin States agree that this agreement will be filed before the Godavari Water Disputes Tribunal.

Basing on the agreements meetings were held on 15.6.73,9.12.75 and 11.7.79 between officers of Orissa and M.P. (Now Chattisgarh) for the use of water of the Indravati basin.

Item 2, (iii) of the Proceedings of the meeting between the Chief Ministers of Orissa and M.P. held at New Delhi on 9.12.75 on the quantity of water to be made available at the M.P. border with the conditions specified as per the following provision.

After full discussion, the following agreement was arrived at:-

I. Pending final allocation of the Godavari water, Madhya Pradesh and Orissa will be free to use additional gross quantity of 300 TMC and 200 TMC respectively, out of the water of the Godavari basin below Pochampad Dam site for new projects in such manner as they deem fit.

II. In agreeing to 200 TMC referred to in Clause I for Orissa, Madhya Pradesh on its part has taken into account the estimated requirements within the basin only. All the utilization by Orissa and Madhya Pradesh contemplated in the various Clauses shall be only as a part of the 200 TMC and 300 TMC respectively agreed to in Clause I above. The States of Orissa and Madhya Pradesh will not be entitled on the basis of the subsequent Clauses to utilize in any way more than 200 TMC and 300 TMC respectively.

III. Below the dam sites of the Upper Indravati Project, as proposed by Orissa there is a catchment area of about 1555 sq. miles in the Indravati sub-basin up to Orissa border with Madhya Pradesh. From this catchment there is some natural flow across the Jaura Nallah to Sabari (Kolab) River. It was agreed that Orissa will ensure at its border with Madhya Pradesh a flow of 45 TMC in the Indravati and its tributaries at 75% dependability for use by Madhya Pradesh. In the years of shortage, the shortage will be shared proportionately between the two States and the assurance of flow in the Indravati and its tributaries, referred to above will stand proportionately reduced. Both the States agree to joint gauging at suitable points to ascertain the yield data and to ensure the flow of 45 T.M.C. at 75 percent dependability of the proportionately reduced flow in years of shortage that has to flow below the common border. The figure of 45 TMC is on the assumption of total yield of 204 TMC from the Indravati sub basin in Orissa and 91 TMC utilization for the Upper Indravati Project. If the assessment of 204 TMC is found to be high and the correct figure is lower than 204 TMC and the utilization for the Upper Indravati Project gets reduced from the figure of 91 TMC then the figure of 45 TMC will get reduced in the same proportion as the reduction in the figure of 91 TMC.

IV. In view of the agreement incorporated in the above clauses, Madhya Pradesh agrees to the clearance and execution of Upper Indravati Project, as proposed and submitted by Orissa to the Government of India. Orissa also agrees to the clearance and execution of Bodhghat Project, as may be modified by Madhya Pradesh taking into account the water availability as specified in Clause III.

V. It is agreed that Madhya Pradesh and Orissa will consider the feasibility of taking up joint projects in the Sabari sub-basin from the point Sabari (Kolab) river forms the common boundary between both the States up to the point where it joins the Sileru river, on the

basis of common agreements to be drawn up at appropriate time. The Hydel power and the cost debitable to generation of such power will be shared equally between the two states in these projects. The costs and benefits of irrigation, if any, from these projects will also be equally shared among both the States. Orissa will be free to make beneficial uses of the water of this river above the common boundary point and lying in its territory in such manner as it deems fit.

VI. Notwithstanding the agreement on the joint projects on the river Sabari (Kolab) mentioned in Clause V, if there is any submersion of land and properties of either State by other projects sponsored by the other State or any other State in the Godavari basin, the question of submersion and the problems connected therewith will have to be mutually settled before execution of such projects.

VII. Madhya Pradesh and Orissa agree that nothing in this agreement will be treated as a concession by either State in respect of any of their contentions in any other water dispute with any other State or with respect to the dispute regarding the sharing of the balance of water in Godavari and its tributaries.

VIII. Madhya Pradesh and Orissa agree that this agreement will be furnished to the Government of India and they would be requested to expedite the clearance of the new projects. This agreement will also be jointly filed before the Godavari Water Disputes Tribunal at the appropriate time.

Proceedings of the meeting between the Chief Ministers of Andhra Pradesh and Orissa at Hyderabad on the 15th December, 1978.

After full discussions, the following agreement was reached:

I. G-11 Indravati sub-basin:

The State of Orissa can utilise its share of water in G-11 Indravati sub-basin in terms of the Inter State agreement dated 19.12.1975 affirming the bilateral agreement dated 9.12.1975 between the State of Orissa and Madhya Pradesh.

II. G-12 Sabari sub-basin :

A. The State of Orissa can use all the water of the river Sabari (Kolab) up to the point (at near about Lat.18°-55'-04" N and Long 82°-14'-53" E) where the river Sabari forms the common boundary between the State of Orissa and the State of Madhya Pradesh in terms of the Inter-state Agreement dated 9.12.1975, Clause V.

B. The State of Orissa and Andhra Pradesh agree for utilization of all water up to the following project sites on the tributaries and sub-tributaries of the river Sabari (Kolab) by the State of Orissa.

(i) Govindapalle Project on :-

- (a) Dharmgedda nalla site near Lingiyaput village
Lat.18°-36'-07" N, and Long.82°-16'-48E.

(b) Jamnadi site near Govindpalli village.
Lat. 18°-36'-13" N, and Long 82°-16'-48"E.

(c)Garia nadi sitenear Doraguda village.
Lat.18°-34'-03" N and Long. 81°-56'-24" E.

(ii) Satiguda Project site on the tributary of Potteruvagu.
Lat. 18°-18'-57" N. and Long 82°-17'-18" E.

(iii) Parasanapalle Project site on the tributary of Sabari near village Parasanapalli.

Lat. 18°-16'-44" N. and Long.81°-36'-44" E

(iv) Potteru Project site on Potteruvagu near Surlikunta village.
lat.18°-12'-30" N and Long 82°-01'-30" E.

C The State of Orissa in addition to the uses as specified in clauses II(A) and II(B) above, can use 40 U Tmc., for its existing, under construction and proposed project/schemes each using not more than 1.5 tmc. annually.

D Downstream of the point where the Sabari forms the common boundary between the States of Orissa and Madhya Pradesh (at near about Lat.18°-55'-04" N and Long 82°-14'-53" E) and up to the confluence of the Sileru and the Sabari, the States of Orissa, can use not more than 27 tmc., for irrigation by withdrawals from the main river for its existing, under construction and proposed schemes/projects.

E. The quantum of water to meet the evaporation losses of project under clause II D and power projects across the Sabari by the States of Madhya Pradesh and Orissa in terms of clause V or bilateral agreement dated 9.12.1975 between Orissa and Madhya Pradesh will be in addition to the quantum specified in clauses II A,B,C & D above and shall be shared in such proportion as the said two States may agree. However the share of Orissa in excess of 10 T.M.C. in the evaporation losses mentioned above shall be met from its quantum mentioned in clauses II A,B,C & D above.

XI Kolab Basin (Godavari)

Balimela Dam Project:

Final agreement between the Government of Orissa and Andhra Pradesh in relation to the use of waters of the Sileru River on 4.9.62.

- a. A dam on Sileru with F.R.L.1516 shall be constructed at Balimela.
- b. The weir at Guntawada, to be built entirely at the cost of Andhra Pradesh Government shall have specified heights as follows:
 - (a) The construction of weir at Guntawada will be as follow:
1st June, 1963: Spillway Section 600 feet at 1332 and 400 feet at1320

15th April, 1964: Spillway section 800 feet at 1332 and 200 feet at 1320.

15th May, 1964: Spillway section 1000 feet at 1332.

Construction of sluices for 4000 cusecs discharge with water at 1320 will be provided.

By December, 1964: Spillway section will be raised to crest level of 1340.

- (b) R.L. 1340 feet when this power plan is due to go in to operation.
- (c) R.L. 1360 feet with 20 feet gates over 1340 feet R. L .crest when Balimela Dam has reached a height of at least 1400 feet R.L.

Provided that in no case the height of water level at Guntawada, during floods or otherwise, shall exceed about 1360 feet R.L. for maximum designed discharge of 2.5 lakhs cusecs.

- 3. The cost of Balimela Dam for common works shall be shared equally by Government of Andhra Pradesh and Government of Orissa. Provided however that the share of Andhra Pradesh Government shall not exceed Rs.12.00 crores.
- 4. As requested by the Andhra Pradesh Government, Orissa Government agrees to bear the Andhra Pradesh Government's share of expenditure over and above Rs.3 crores (as provided by Andhra Pradesh Government) during the Third Plan period. Such amount as is advanced by Orissa Government on account of Andhra Pradesh Government will bear interest at the average rate of Public loans floated by Orissa State during 1962-65 to be repaid to Orissa Government during the first year of the Fourth Plan period. Andhra Pradesh Government also undertakes to place the balance of the funds required as their share, during the fourth plan period of the extent of the work actually done every year.
- 5. The design and specification of the Balimela dam would be authorized by a Committee of three experts, consisting of the following:
 - 1. Dr. A.N. Khosla, Member, Planning Commission.
 - 2. Dr. K.L. Rao, Member of Parliament.
 - 3. Member, Designs, Central Water & Power Commission.

When vacancies arise they shall be filled by the Central Board.

- 6. Half the total inflow into Balimela Reservoir at Balimela dam will be let down towards the Andhra Pradesh share and the other half into the Balimela High Head Power House of the Orissa Government. The flow to either Power Station will be as per the actual requirements. In any year from July 1st to June 30th, the draw off of either party from storage shall not exceed half the allowed draw off from the year inclusive of evaporation losses but exclusive of surpluses due to filling of reservoir. Rules for regulations of the Reservoir after it is in operation shall be drawn up by the Central Board.

7. Full facilities for investigation, construction and operation of weirs at Guntawada and Lower Sileru site as also Lower Sileru Dam at Donkarai or nearby will be given by the Orissa Government, to the Andhra Pradesh Government. Necessary land will be acquired in Orissa territories by the Orissa Government under the provisions of the land Acquisition Act. Similar assistance for the Balimela Reservoir will be given by the Andhra Pradesh Government to the Orissa Government for the areas in the Andhra Pradesh State.
8. The construction of Balimela Dam will be under a Joint Control Board on which Orissa and Andhra Pradesh will have equal representation. The Chairman of the Board will be the Chief Minister of either State alternatively for terms of a year, the first Chairman being the Chief Minister of Orissa. Works on the Balimela High Head Power House will be done by Orissa Government and on Guntawada weir by Andhra Pradesh Government.
9. The Power House at Balimela Dam utilizing the Andhra Pradesh share of waters will be constructed by and at the cost of Andhra Pradesh and will be operated and be under full control of Andhra Pradesh authorities. This cost include the cost of Penstocks, Trash rack and intake structure. The High Head Balimela Power House will be operated and be under the full control of the Orissa Government, which will bear all the relevant costs.
10. Below Balimela Dam, the entire flow of river Sileru and tributaries is left to the exclusive use of Andhra State in such manner and at such times as they think it. The Andhra Pradesh Government will construct the necessary works. Similarly below the High Head Power House, the entire waters will be for the exclusive use of the Orissa State.
11. If and when any additional water is diverted into Machkund basin from other basins, half the waters will be given to Andhra Pradesh State and Andhra Pradesh State should bear half the cost of diversion and storage works.
12. With the signing of this Agreement the Andhra Pradesh Government may proceed with the construction of the Guntawada weir and ancillary works as per the programme specified in Clause (2) in the Orissa portion of the River and territory. Similarly works connected with the Balimela Dam may be taken up immediately.
13. Any alteration in the terms of this Agreement can be made only with mutual consent of both the parties.

Pollavaram Project:

Agreement dated 2.4.1980 between States of Andhra Pradesh, M.P. and Orissa.

To enable clearance of Pollavaram Project the following is agreed to:

1. The Polavaram Project spillway shall be designed for a flood discharging capacity of 36 (thirty six) lakh cusecs at pond level of RL + 140 (One hundred and forty) feet

and not less than 20 (twenty) lakh cusecs at pond level of RL + 130 (one hundred and thirty) feet.

2. The pond level shall not be kept higher than RL +145 (one hundred and forty five) feet in the month of June if the inflow into the Polavaram reservoir exceeds 3 (three) lakh cusecs.
3. On receipt of flood warning from the upper sites and /or due to anticipated inflows into the reservoir requiring regulation, the pond levels shall be regulated as follows:
 - 4.2.1. the pond of RL+145 (one hundred and forty five) feet shall be lowered progressively as the inflows exceed 3 (three) lakh cusecs so as to restrict the pond level to RL+140 (one hundred and forty) feet for an inflow of 10 (ten) lakh cusecs.
 - 4.2.2. for inflow higher than 10 (ten) lakh cusecs the pond level shall be further lowered, so that it does not exceed RL+130 (one hundred and thirty) feet for and inflow of 20 (twenty) lakh cusecs.
 - 4.2.3. For inflow higher than 20 (twenty) lakh cusecs, all the gates shall be opened fully.
 - 4.2.4. The pond level can be built up progressively in the receding floods to RL+140 (one hundred and forty) feet if the inflow drops down to 10 (ten) lakh cusecs and to RL+145 (one hundred and forty five) feet if the inflow drops down to 3 (three) lakhs cusecs or less, but during the months of July and August, the pond level shall not exceed RL+145 (one hundred and forty five) feet.
 - 4.2.5. On or after first September, whenever the inflow in the Polavaram Reservoirs is 1(one) lakh cusecs or less, the storage at Polavaram can be built up beyond RL+145 (one hundred and forty five) feet, subject to aforementioned depletions at (a) to(c) in the case of higher inflows.
4. In order to protect the lands and properties above RL+150 (one hundred and fifty) feet in the territory of the State of Orissa likely to be affected due to construction of Polavaram Project, protective embankments with adequate drainage sluices, shall be constructed and maintained at the cost of Polavaram Project. However, the State of Orissa may exercise an option at the time of construction of Polavaram Project for compensation to land and property likely to be affected above RL+150 (one hundred and fifty) feet as agreed to in the case of State of Madhya Pradesh in paragraph 5 (five) below.
5. In respect of the properties in the territory of State of Madhya Pradesh likely to be affected above RL+150 (one hundred and fifty) feet, because of the construction of the Polavaram Project the State of Andhra Pradesh shall:
 - (a) Pay compensation towards all buildings with their appurtenant lands situated above RL+150(one hundred and fifty) feet which will be affected due to all effects including backwater effect and rehabilitate the oustees, etc. on the

same pattern as below RL+150 (one hundred and fifty) feet at the project cost; or

- (b) Construct and maintain at the cost of the State of Andhra Pradesh the necessary protection embankments with adequate pumping arrangements and/or drainage sluices.

The said option for alternative (a) or (b) being exercised by the State of Madhya Pradesh at the time of the construction of Polavaram Project depending upon the location of each affected site.

- (c) For damages or injury to lands beyond RL+150 (one hundred and fifty) feet in the territory of the State of Madhya Pradesh, in any event, the state of Andhra Pradesh shall pay full compensation for such damage or injury as may be assessed by the District Collector of the said District of the State of Madhya Pradesh.
- (d) The State of Andhra Pradesh agrees to fix permanent Bench Marks connected to G.T.S. Bench Marks in the territory of the State of Madhya Pradesh for RL+150 (one hundred and fifty) feet as well as for the back water effect, in both cases, at an interval of approximate one kilometer all along the periphery of the Polvaram reservoir.