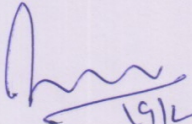


**LOWER ORR MAJOR IRRIGATION PROJECT  
COST-BENEFIT ANALYSIS  
PARAMETRE FOR EVALUATION OF BENEFITS**

S.N	PARAMETER	IRRIGATION PROJCT
1	Increase in productivity attributed to the specific project.	The Lower Orr major project is conceived to irrigation water to 45047 Ha CCA in 146 villages of dist. Shivpuri and Datia. Annual irrigation is proposed 67570 Ha with annual intensity 150%. Total annual benefit in the terms of productivity have been worked out as 3698444 qtl. from 780105 qtl. Therefore total annual profit is worked in terms of amount Rs. 25729.30 Lakhs.
2	Benefit to economy.	The main objective of Lower Orr Major project to provide irrigation water to CCA 45047 Ha. And 6 MCM water reserved for drinking water for the population of 1.65 Lakhs. It will generate the revenue of about Rs. 15.60 Lakhs. In addition to this the benefits from fishries development in the submergence area would be Rs. 3592.00 lakhs. Total benefits to economy would be Rs 3607.60/- lakh
3	Number of population benefitted.	Lower Orr project will provide irrigation facilities to CCA 45047 Ha in the 146 villages coming under the district Shivpuri and Datia.
4	Employement potential.	During the construction period for 5 years temporary and permanent nature type employment will generate. About 1950 person of 35 villages around the dam site will get the employment per day. Total nos. of employment would be about 4270000 mandays. The construction of the Project will result in increase of tourist recreation facilities generating the opportunities of self employment to the local population.
5	Cost of aquisition facility on non forest land wherever feasible.	No human commodity will affected due to constroction of project.
6	Loss of (a) Agriculture & (b) Animal Husbandary production due to diversion.	No loss of agriculture envisaged. In fact present object has been proposed for the improvement of agriculture in this area. No loss in the Animal Husbandary production.
7	Cost of rehabilitating the displacement persons as different places.	Amount Rs. 21568.82 Lakhs
8	Cost of supply of free fuel-wood to workers residing in or near forest area during period of construction.	During project construction phase, labour population is likely to congregate near various construction sites. It can be assumed that the technical staff likely to congregate will be of higher economic status and will live in a more urbanized habitat, and will not use wood as fuel. However, workers and other population groups residing in the area may use fuel wood (if no alternate fuel is provided) for whom firewood/coal depot could be provided. As per the EIA study about 1241000 quintals or 155000 cum fuelwood estimated for the labours during the construction phase of 5 years. About 62000 trees will be cut to meet the fuelwood requirements to the labour. Hnce to minimize the imapcts,community kitchen have been provided. Thus provison for cost of fuel-wood made nil.
9	Total benefit due to project.	Rs. 7768.08 Lakhs per annum.

**Cost Benefit Analysis :-**

(i) Total benefit due to project	7768.08 Lakhs
(ii) Total annual cost	5045.84 Lakhs
(iii) Benfit cost ratio	1.54

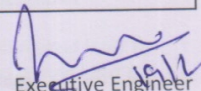
  
19/12

Executive Engineer  
Investigation Division  
National Water Development Agency  
Bhopal



**LOWER ORR MAJOR IRRIGATION PROJECT**  
**COST-BENEFIT ANALYSIS**  
**PARAMETRE FOR EVALUTION OF LOSSES OF FOREST**

S.NO	PARAMETER	IRRIGATION PROJCT
1	Loss of value of timber, fuel wood & minor forest produce on annual basis including loss of man hours of people who derived livelihood & wages from the harvest of these commodities.	Total 968.24 ha forest area is coming under the submergence of lower Orr major project and total 944 nos. families are displaces and rehabilitated to suitable place. The project will provide 67570 Ha annual irrigation with annual intensity 150%.NO fuelwood and timber are allowed to cut from forest. Colletion of tendu patta and minor forst produc is the benefits from the forest area. (TheTendu Patta collection at the rate of standard bay per hactor amounting to Rs. 1250 and other minor forest produce Rs .750/- per hactor ) . Hence Amount is worked out due to losses of Tendu Patta and other minor forest produe is Rs. 19.36 Lakhs.
2	Loss of animal husbandary productivity inclusive of loss of fodder.	The foddar would be loss from the forest area. The production of fodder has been considered as 0.5 tonne /ha and Rate of fodder is Rs. 10/Kg. Hence total loss of Fodder Amount would be Rs. 48.41 Lakhs
3	Cost of human resettlement.	Amount Rs. 3996.35 Lakhs
4	Loss of public facilities & administrative infrastructure of forest land or which would required forest land if facilities were diverted due to project.	Based on the preliminary survey there is no loss of any facilities or existing infrastructure in the forest area coming under the dam submergence.
5	Environmental losses (soil erosion, wild life,habitant,effect on hydrological cycl, micro climate up setting of ecological balance)	Amount Rs. 981.71 Lakhs/ Year
6	Suffering oustees.	Villagers have agriculture based economy and cattle rearing are the supporting source of income for them. Calculation of income and expenditure from these two sectors is a complex job because the villagers are not able to explain their income properly. They neither calculate their income nor they maintain the accounts of their day to day expenditure.However Rs 3000/- per month per PAF have been considered in the resettlement plan and cost have already included under col.3
7	Total losses	Rs 5045.83 lakh

  
 Executive Engineer  
 Investigation Division  
 National Water Development Agency  
 Bhopal