

# FISHERIES CONSERVATION AND MANAGEMENT PLAN

## 1.1 INTRODUCTION

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The construction of dam across Dhasan river shall lead to creation of reservoir resulting in submergence area of 4699.08 ha. The formation of reservoir would bring about significant changes in the riverine ecology, as the river will transform from a fast-flowing water system to a quiescent lacustrine environment. Such an alteration of the habitat would bring changes in physico-chemical and biotic characteristics of river water. The fish community will be one of most affected biotic communities due to habitat alteration in downstream as well as upstream section. The fishes in the riverine profile shows spatial and temporal variation depending on water depth, velocity of current, substrate, water discharge, physico-chemical conditions, etc. Among the biotic communities, certain species are able survive the transitional phase and adapt to the changed riverine habitat. There are other species amongst the biotic communities, which for various reasons are unable to acclimatize to the changed environment. Under such conditions some of the biotic communities may disappear in the early years of impoundment of water.

During the operation of the project, flow in Dhasan river downstream of dam would be considerably reduced. It will lead to drying of riverbed and very little water will remain in the river restricted mainly in the central portion. The low flow in river will affect the aquatic habitat. The condition will be more critical during the lean season when volume of water is significantly reduced in the main river.

The conservation of fishes under such conditions is one of important task because they typically use different habitats along the river stretch for spawning, feeding, shelter and growth.

## 1.2 FISH COMPOSITION & STATUS

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As per the secondary sources and field visit survey was used to collect information on fish diversity in the study area. Based upon field surveys and according to information provided by locals 13 species are found in the study area. These are *Acanthocobitis botia*, *Hypophthalmichthys nobilis*, *Labeo calbasu*, *Labeo gonius*, *Glossogobius giuris*, *Trichogaster lalius*, *Puntius sophore*, *Garra lamta*, *Osteochilus vittatus*, *Parambassis ranga*, *Channa striata*, *Wallago attu* and *Gagata itchkeea*. Local fishermen use cast net, drag nets and gill net for landing of fish.

### 1.3 MITIGATION MEASURES

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To mitigate the adverse impact of Dhasan Major Irrigation project on the aquatic ecology of the area fishes the following measures shall be adopted to protect and preserve existing aquatic life:

- Development of reservoir fishery
- Releasing /ensuring minimum Environment flow in the river

### 1.4 FISHERY DEVELOPMENT

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The proposed reservoir will present an opportunity to develop fishery in the area as fisheries are not well developed in the project area and large-scale fishing is not being practiced. The proposed reservoir will provide opportunity for commercial fishery development. Overall, this would improve the availability of fish for local population and may play an important role in the growth of local economy.

It is proposed to implement supplementary stocking programme for the project area. The setting up of fish hatchery will be executed by the Department of Fisheries, Government of Madhya Pradesh and funds for the same shall be provided by the project proponent.

Environment considerations require that a portion of flow should be released downstream of the dam in different seasons. As discussed in EIA report in detail, 99% of the river discharge is in monsoon period; total 75% dependable year virgin yield is computed as 540 MCM at dam site, out of which 5.64 MCM is in non Monsoon period. Available yield is about 1.8 times of the storage capacity, hence in monsoon months sufficient surplus water will be available in the river downstream of the dam. However, during non-monsoon months, in order to provide adequate water to downstream users and for the survival of aquatic life in the river, entire available 5.64 MCM available in non-monsoon months shall be released as environmental flow.

### 1.5 COST ESTIMATES

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The cost required for non-recurring expenditure i.e. developing of hatchery, office complex, laboratory etc. shall be **Rs. 24.40 lakh**. The dimension of the hatching nurseries and rearing unit and their approximate cost is given in **Table 1**. The total recurring expenditure for 5 years will be **Rs. 78.82 lakh**. Thus, total cost for fish hatchery and farm including non-recurring, recurring expenditure and escalation will be **Rs. 113.54 lakh**.

**Table 1: Estimated cost of setting of hatchery**

<b>S. No.</b>	<b>Particulars</b>	<b>Dimensions/ Rate (Rs.)</b>	<b>Amount (Rs. in lakh)</b>
<b>A.</b>	<b>Capital – Non-recurring Expenditure</b>		
1.	Construction of Hatchery (Hatchery building (one concrete hall with provision of hatching troughs each with 4 trays) for production of fingerlings-1 No.	20m x 6m x 5m	10.00
2.	Nursery ponds -10 Nos.	5m x 2m x 1m	1.50
3.	Rearing Ponds -4 Nos.	10m x 5m x 2m	2.10
4.	Stocking Ponds -2 Nos.	30m x 10m x 3m	5.00
5.	Office Complex, with all infrastructure and separate provision for store and two laboratories and fish feed room etc. -1 No.	8m x 6 m	3.80
6.	Watchmen hut -1 No.		1.00
7.	Other items like Dragnet, wide mouth earthen pots, bucket, bamboo patches etc.	Lump Sum	1.00
	<b>Total - A</b>		<b>24.40</b>
<b>B.</b>	<b>Recurring Expenditure</b>		
1.	<b>Salaries (For 5 years including 2 years of operation) @15% increase per year</b>		
	Farm Manager -1 No.	25000/- per month	20.23
	Farm cum Reservoir Assistant-1 No.	20000/- per month	16.18
	Farm Attendants-2 Nos.	15000/- per month	24.27
	Chowkidar-1 No.	10000/- per month	8.09
2.	Fish seed (carried over seed with A V. Weight 25 g each 10,000 nos.)	Lump Sum	0.25
3.	Fish food (rice bran oil cake) 1:1	Lump Sum	1.00
4.	Nursery and Rearing tanks management (Lime, natural fertilizer, wages nursery, etc.)	Lump Sum	1.80
5.	Brooders tank management (Lime, fertilizer, artificial food, prophylactic measures, netting and etc.)	Lump Sum	1.00
6.	Training and research	Lump Sum	1.50
7.	Maintenance for 5 years	50000/ year	1.50
8.	Travel & transport – 5 years	50000/ year	1.50
9.	Contingency & miscellaneous expenditure	30000/ year for 5 years	1.50
	<b>Total - B</b>		<b>78.82</b>
	<b>TOTAL A+B</b>		<b>103.22</b>
	<b>GRAND TOTAL (After adding 10% escalation of cost)</b>		<b>113.54</b>