

F. No. J-12011/20/2018-IA.I (R)
Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

2nd floor, Vayu Block,
Indira Paravaran Bhawan,
Aliganj, Jor Bagh Road,
New Delhi - 110 003

Dated: 12th October, 2022

To,

The Sub Divisional Officer
Sarasvati Heritage Sub Division No. 2
Irrigation & Water Resources Department
Government of Haryana
Jagadhri - 135001, Haryana
E-mail Id: xenshdjdr@gmail.com

Sub: Adi Badri Dam on Somb Nadi and its piped link to Saraswati Nadi and Saraswati Reservoir, Dist. - Yamunanagar, Haryana by M/s Irrigation and Water Resources Department, Haryana - reg.

Madam/ Sir,

This has reference to your letter dated 11.11.2019 submitting proposal for grant of Terms of Reference for conducting EIA study for proposed construction of Adi Badri Dam on Somb Nadi and its piped link to Saraswati Nadi and Saraswati Reservoir, Dist. - Yamunanagar, Haryana by M/s Irrigation and Water Resources Department, Haryana to obtain prior Environmental Clearance under the provisions of the EIA Notification, 2006, as amended.

2. Following information has been submitted by the project proponent:

- i. In order to restore water of Somb Nadi to Saraswati Nadi, it is proposed to construct Adi Badri Dam on Somb Nadi and its piped link to Saraswati Nadi and Saraswati reservoir. Adi Badri dam reservoir and Saraswati reservoir would help in recharging the ground water in Himachal Pradesh and Haryana. Recharge will also take along the course of Saraswati Nadi.
- ii. The project involves construction of 33.4 m high and 160 m long dam and a pipe link of length of 8.82 km to Saraswati reservoir having a capacity of 861 ha-m. The catchment area of Somb Nadi up-to Adi Badri dam is about 29.50 km.
- iii. About 31.16 ha of forestland diversion is involved.
- iv. There is no displacement of family in the project and land required for pipelink.
- v. The Saraswati reservoir is already in possession. The **Kalesar Wildlife Sanctuary** is approximately 8.529 km from the dam site.
- vi. The estimated cost of the project is about Rs.108.70 crores.
- vii. It was also mentioned that the proposed project is not a direct irrigation project. The outcome of the project is rejuvenation of Saraswati Nadi, flood control and ground water recharge.



- viii. It was observed by the EAC that project aimed for the purpose of revival of Saraswati Nadi as a heritage project with following additional benefits
- Ground Water Recharge
 - Flood Control
 - Fish Farming
 - Recreation/Tourism
- ix. The project proponent has submitted the project component details as under: -

Sr.no	Particulars	Details
1.	Submergence upto FRL of 344.0 m	: 14.38 ha
2.	Submergence upto 345.388 m level for 25 years return period flood routing. (for acquiring landed property)	: 16.04 ha
3.	Level upto which built up property to be acquired (Level attained during 50 year return period flood)	: 345.515 m
4.	No. of villages whose abadi would fully or partially submerged	: Nil
5.	Total land required for the Reservoir, Somb Sarasvati Barrage and its Appurtenant works and Somb Sarasvati Link Channel	: For Somb Sarasvati Barrage and appurtenant work, colony and rest house = 20 ha For pipeline 2.86 ha (equivalent land) Sarasvati Reservoir = 109 ha Total = 131.1 ha (324 acre)
6.	Transmission lines	: Only some LT lines of tube wells would need relocation. One 66 KV HT line in the Sarasvati Reservoir area will also need shifting.
8	Length of embankments and quantity of stonework required:	
a)	Length of embankments & guide bunds	: (For equivalent section of 12.4 m, (otherwise length will be more) = 500.0 m
b)	Quantity of stone needed	: 5420 Cum
c)	Quantity of Filter material needed	: 2710 cum
d)	Stone needed for Somb Sarasvati Barrage	: 2600 Cum (approximately)
9	Roads submerged	: Nil
10	Tube wells submerged	: These will come with the land to be acquired
Somb Sarasvati Barrage and its Appurtenant works:		

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i)	No. of bays	:	10 (with breast wall type gates)
ii)	Width of each bay	:	6.0 m
iii)	Width of Piers	:	2.0 m

iv)	Crest level	:	339.0 m
v)	Top of pier	:	348.0 m
vi)	Gate size	:	6.0 m x (5.0 + 0.15 F.B.)
vii)	FRL	:	344.0 m

11 System for stop logs:

i) 2 or 3 piece stop logs

ii) Monorail crane for lifting of stop logs

7.2	Bridge over the barrage	:	Two way bridge with carriageway of 7.50 m.
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12 Head Regulator for Somb Sarasvati Link Channel:

i) No. of bays : 2 (breast wall type gate arrangement)

ii) Width of each bay : 3.0 m

iii) Width of Pier : 1.5 m

iv) Crest Level : 337.5 m

v) Bottom level of breast wall : 340.0 m

vi) Discharge : 50 cumecs (maximum)

13 Conveyance pipeline from SSB Reservoir to S.R Reservoir:

i) Length of pipeline : 7120 m + 450 m (for branch line)

ii) Diameter of pipe : 1000 mm

iii) No. of pipes : 2

iv) Type of pipe material : RCC pressure pipe of P1 class for 1825 m and of P2 class for 5500 m and MS pipe for end 20 m.

v) FSL at head : 339.5 m (for design of pipeline)

vi) FSL at Tail : 332.0 m (FSL at Sarasvati Reservoir)

14 Sarasvati Reservoir:

14.1	Area of Panchayat land of villages of Rampur Heriyan, Rampur Kamboyan and Chhalaur proposed to be used for Sarasvati Reservoir	:	269.0 acres
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14.2 Sarasvati reservoir levels:

i) Bed Level : 312.50 m

ii) MDDL : 313.40 m

iii) FRL/ MWL : 332.0 m

iv) Top of level of embankment : 333.50 m



v)	Length of embankment along its center line	:	4.92 km
14.3	Sarasvati Reservoir Areas and Capacities:		
i)	Area at El. 312.5 m	:	61.1388 ha (151.07 Acres)
ii)	Area at FRL/ MWL at el 332.5 m	:	90.1763 ha (222.83 Acres)
iii)	Area at top of Embankment (inner	:	92.410 ha (228.35 Acres)

	edge)		
iv)	Slope area from 312.5 m to 332.0 m	:	29.0375 ha
v)	Slope area as percentage of total reservoir area at FRL	:	32.20%
vi)	Reservoir capacity without excavation		774.44 Ha-m
vii)	Capacity of Sarasvati reservoir at FRL without excavation (But by using 2312000 cum earth on embankment and for SSB bunds	:	1000.0 ha- m
viii)	Capacity of the Sarasvati reservoir at FRL with excavation upto El. 312.5 m	:	1475.33 ha- m
ix)	Dead storage capacity of Sarasvati reservoir		69.50 Ha-m
x)	Live storage capacity of Sarasvati Reservoir		1405.83 Ha-m (1475.33-69.50)
xi)	Reservoir losses from 1 st October to 31 st May	:	119.24 Ha- m (When Adi Badri Dam will be in position.)
xii)	Availability of water from the Sarasvati Reservoir from 1 st October to 31 st May		1286.59 ha- m (1405.83-119.24) or 21.5 Cs during this period (at 50% dependability) [if Adi Badri Dam will be constructed]
xiii)	Reservoir losses for whole year		196.25 ha-m (If Adi Badri Dam not constructed)
xiv))	Availability of water for whole year if Adi Badri Dam is not constructed.	:	894 ha-m or 7.80 Cs (at 50% dependability) without Adi Badri Dam)
14.4	Excavation and its uses:		

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i)	Total excavation required for attaining bed level of 312.50 m	:	701.45 ha- m = 70.145 lac cum
ii)	Reservoir excavated earth to be used on Sarasvati Reservoir Embankment	:	20.425 lac cum
iii)	Reservoir excavated earth to be used on Somb Barrage Reservoir embankments	:	2.695 lac cum
iv)	Balance earth to be disposed off 'anywhere'	:	47.025 lac cum
v)	Quantity of stone needed for	:	94632 Cum

	Sarasvati Reservoir		
	(Total quantity of stone needed for the project = 5420 + 2600 + 94632 = 1,02,652 Cum)		
	Filter material for whole project = 2710 + 47181 = 49891 cum		

3. The proposal was earlier considered by the EAC (River Valley & Hydro-electric) in its meeting 17th & 24th held on 27.08.2018 & 27.05.2019 respectively. The EAC (River Valley & Hydro-electric) observed that the instant project does not involve any components of irrigation/hydropower generation which are listed in the 1(c) of the Schedule of EIA, Notification, 2006, as amended. The EAC, based on the information available found that the project involves infrastructure development. The above project activity in the present form may not be considered in Category 1(c) by this committee and therefore the same was returned as it does not require EC under 1(c) of the Schedule of EIA, Notification, 2006.

Since this project site is close to archaeologically important area as well as ecologically sensitive zones and as the proposed project which involves construction of barrage with change in the flow pattern in the downstream and resultant change in the ecology, it was felt that this project must be appraised by the Ministry for studying the environmental implications of the proposed barrage construction on entire river eco-system including environmental flow, downstream uses as well as change in upstream ecology. Accordingly, it was decided that the Joint Committee (River Valley & Hydro-electric and Infrastructure-II) will examine the environmental implications associated with project that involve creation of infrastructure in the river with respect to these projects and to suggest appropriate mitigation measures. Accordingly, the Joint Committee has deliberated on the proposal in its meetings held on 16.02.2021, 16.09.2021 and 17.05.2022 respectively, and suggested Environmental Safeguard Measures for sustainable implementation of the proposed construction of Adi Badri Dam and its piped link to Sarasvati River & Sarasvati Reservoir. Based on the suggestions of Joint Committee, Ministry hereby suggested following environmental safeguard measures for sustainable implementation of the proposed project:



A. Environmental Management:

- i. Monitoring stations for regular monitoring (Monsoon Season and Post Monsoon Season) of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the prescribed guidelines at designated locations (Surface water quality at two locations of Somb nadi U/s of Adi Badri Dam and 2 locations of Sarswati Reservoir D/s of Adi Badri dam) may be installed.
- ii. Appropriate Air Pollution Control (APC) system should be in place for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.
- iii. Necessary control measures such as water sprinkling arrangements, etc. should be taken up to arrest fugitive dust at all the construction sites.
- iv. The Environmental flow in the Somb River for the project should be maintained as per the direction given by the Hon'ble NGT vide its Order dated 09.08.2017 in the matter of Pushp Saini Verses Ministry of Environment, Forest & Climate Change to preserve the ecosystem of the Somb River and it may become a perennial resource.
- v. A detailed plan should be prepared and implemented in consultation with IARI for watersheds development in the catchment area of Somb River (up to its confluence with Yamuna River) and identified stretch of Sarawasti River for long term survival of both rivers.
- vi. All the equipment likely to generate high noise should be appropriately enclosed or inbuilt noise enclosures be provided to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.
- vii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
- viii. Necessary steps should be under taken to control growth of weeds like Bolivia, water hyacinth, etc in reservoir area.

B. Waste management

- ix. Muck disposal be carried out only in the approved and earmarked sites. The dumping sites should be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.
- x. Restoration of construction area including dumping site of excavated materials should be ensured by levelling, filling up of burrow pits, landscaping etc. The area should be properly treated with suitable plantation.
- xi. Sanitation and Solid Waste Management Plan for domestic waste from colonies and labour camps etc. should be prepared and implemented in consultation with public health department. Land filling of plastic waste should be avoided. Efforts be made to avoid one time use of plastics.

C. Green Belt and Wildlife Management

- xii. Wildlife Conservation & Management Plan for conservation and preservation of endemic, rare and endangered species of flora and fauna including the measures for free movement



of wild animals should be prepared and implemented in consultation with State Forest Department after approval of Principal Chief Conservator of Forests & Chief Wildlife Warden.

- xiii. To enrich the habitat of the project site, peripheral plantation of different plant species and grassing of the slop of embankment of reservoir should be undertaken in consultation with State Forest Department.
- xiv. Compensatory afforestation in lieu of project affected areas, soil & moisture conservation should be implemented as per the prevailing law/act.
- xv. Fish ladder/pass should be provided for migration of fishes in consultation with CIFRI and CWC. Regular monitoring of this facility may be carried out to ensure it effectiveness.

D. Public and Human health issues

- xvi. Resettlement & Rehabilitation plan should be implemented in terms of the provisions of the State Government, as applicable.
- xvii. Budget provisions should be made for the community and social development plan including community welfare schemes and may be implemented in toto.
- xviii. Provision should be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- xix. The labourers to be engaged for construction works should be thoroughly examined periodically (at least quarterly) by qualified health personnel and adequately treated before issuing them work permit.
- xx. Public Health Delivery Plan including the provisions for drinking water facility for the local community should be prepared and implemented.
- xxi. Preventive measures viz. fuming and spraying of mosquito control should be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions should be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.

E. Risk Mitigation and Disaster Management:

- xxii. Early Warning Telemetric system should be installed in the upper catchment area of the project for advance intimation of flood forecast.
- xxiii. Drilling and blasting should be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
- xxiv. Emergency preparedness and Disaster Management Plan should be prepared for any eventuality of the dam failure and should be implemented before commencement of the project.
- xxv. Stabilization of muck disposal sites using biological and engineering measures to ensure that muck does not roll down the slopes and should be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. The engineering measures for the muck disposal arrangements be evolved after carrying out required slope stability analysis.
- xxvi. Catchment Area Treatment Plan should be prepared in consultation with the State Forest Department and should be implemented in synchronization with the construction of the project.



xxvii. Measures for prevention of animal overgrazing in catchment and reservoir areas and control of sediment and pollution in reservoir areas should be taken.

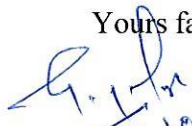
F. Statutory compliance

- xxviii. Forest clearance should be obtained under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
- xxix. Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 should be obtained from the concerned State Pollution Control Board/ Committee.
- xxx. NOC should be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
- xxxi. NBWL Clearance should be obtained, if applicable.

G. Miscellaneous

- xxxi. Stipulations made by the State Pollution Control Board and the State Government should be adhered.
- xxxii. Any changes made in the scope of the project, necessary clearance should be obtained as per EIA Notification, 2006 and as amended.
- xxxiii. Workforce employed for the project should be provided with LPG and kerosene, so the workforce will not cut trees for firewood.
- xxxiv. PP should procure/extract construction material only from those Pvt. Agencies/ corporations /etc. that are having all applicable legal/statutory clearances.
- xxxv. A dedicated team of persons having post graduate qualification in environmental sciences/ environmental management/ environmental engineering should be deployed for effective monitoring and implementation of all environmental safeguards measures.
- xxxvi. The responsibility of implementation of environmental safeguards and carrying out environmental monitoring rests fully with Government of Haryana.
- xxxvii. Study on post construction impacts on environmental flow, change in upstream and downstream ecology of entire river ecosystem should be conducted after every 5 years of implementation of the project through reputed government expert institution.

Yours faithfully,


12.10.2022

(Yogendra Pal Singh)
Scientist 'E'

Email Id: yogendra78@nic.in

Tele: 011-20819364

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1. Guard File