

Sub: Diversion of 6017.00 ha. of forest land in favour of Rashtriya Jal Vikas Abhikaran for development of Ken-Betwa Link Project from Distt. Chattarpur, Panna and Tikamgarh, Madhya Pradesh.

The State Government of Madhya Pradesh vide their letter No. F-3/50/2015/10-11/2182 dated 07.10.2016 was submitted the above subject proposal for seeking prior approval under Section 2 of Forest (Conservation) Act, 1980. The said proposal was placed before Forest Advisory Committee (FAC) in its meeting held on 9th & 10th November, 2016. The Committee discussed the above proposal of diversion of 6017.00 ha. of forest land in favour of Rashtriya Jal Vikas Abhikaran for development of Ken-Betwa Link Project. The Committee noted as under:

1. Legal Status of the Land -
Chhatarpur (T) - 337.55 ha (PF); Tikamgarh (T) - 91.18 ha (RF) ; Tikamgarh (T) - 9.34 ha (PF) ; Panna National Park - 4757.06 ha (PF) ; Panna National Park - 821.86 ha. (RF) ; Panna North (T) - 0 ha. (PF)
Total = 6016.99 ha.
2. The forest proposed for diversion with vegetation density is as follows:
Chhatarpur – Density: 05, Eco-Class: 3,
Panna National Park - Density: 02 to 0.7, Eco-Class: 3,
Tikamgarh - Density : 0.2 & 0.5, Eco- Class : 3.
3. This proposal was placed before 39th Meeting of Standing Committee of NBWL held on 23.08.2016 under the chairmanship of MEF&CC and after discussions, the Standing Committee agreed to recommend the proposal with the conditions prescribed by the Site Inspection team and NTCA, as agreed by MoWR and that the resultant reservoir area shall be retained as core area with minimum activities for management purpose under close consultation with the Tiger Reserve Management. The landscape based plan for the area will be finalized with NTCA in lead, assisted by WII, State Forest Department and project proponents. The effort to integrate the said three wildlife sanctuaries within the PTR will be undertaken simultaneously and the management objective of these areas will be in context of treatment of the area as a part of tiger landscape.
4. The total number of trees to be felled/affected at FRL under this project has been estimated – 1804962 Nos.
5. The forest land proposed for submergence area of project is attached to buffer line of Panna Tiger Reserve.
The Submergence area of the Tiger Reserve proposed for diversion is- (a) Core Zone-4206.50 ha. and (b) Buffer zone- 1372.42 ha.; the forest land proposed for Canal is almost 11 Km. away from the buffer line of Panna Tiger Reserve. Details are as follows-

Component wise breakup			
S.no	Component	Forest Land (ha.)	Non-Forest Land (ha.)
1.	Submergence Area	5761	3239
2.	Spillway	30	0
3.	Power House-1	7	0
4.	Power House-2	4	0
5.	Upper level tunnel	1.15	0
6.	Lower level tunnel	0.55	0
7.	Plant area	5	0

8.	Road Bhusor gate to Dam Axis	10	0
9.	Approach road for PH-2	2	0
10.	Road from plant area to abutment	0.8	0
11.	Land of switch yard, transformer yard etc.	5	0
12.	Canal	190.5	2097
13.	Canal LBC	0	63

6. There are several rare endangered species of flora and fauna found in the area.
7. Environment Clearance for this project has not been obtained as yet.
8. Compensatory Afforestation over the degraded forest land covering of 12034 ha. is spread over in 239 patches.
9. As per the documents submitted, it is not clear the CAT PLAN (Catchment Area Treatment) has been approved by the Competent Authority or not.
10. The Relief and Rehabilitation Plan – it is not clear whether this plan has been approved by the Competent Authority or not.
11. There are 1913 families, which would be ousted for implementation of this project - out of this 648 ST Families, 271 SC Families, 735 BC Families and 259 OC Families. The certificate on Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 has not been received for the entire proposed area i.e. 6017 ha.
12. The total estimated cost of the Project is Rs. 939300/=Lakhs
13. Following Wild Life Species are found:

Tiger, Wolf, Leopard, Wild Boar, Wild Dog, Monkeys, Chital, Sambhar, Sloth Bear, five/seven species of Vulture, Blue Bull, Hyena, Ghariyal etc.
14. After careful consideration of the facts placed before **Forest Advisory Committee (FAC) in its meeting held on 9th & 10th November, 2016** and discussion with the Director General, NWDA, representatives of M.P. Government, Nodal Officer, FCA (M.P.) etc. FAC observed that –
 - (i) The project is involving submergence of part core zone and part buffer zone of Panna National Park besides Forest Area in Chhatarpur and Tikamgarh Forest Division and it appears to be in its pristine form.
 - (ii) Out of 6017.00 hectares forest area, photocopy of FRA Certificate is available only for 5258 Hectares, original documents are required to be submitted. For remaining area FRA Certificate has not been received.
 - (iii) Further to have correct assessment of various issues involved, a Committee consisting of Additional Director General of Forest (Forest Conservation), Dr. Deepak Apte, Dr. Sanjay V. Deshmukh, Shri Rajesh Kaushal, APCCF, Regional Office, Bhopal, IG (Forest Conservation), AIGF shall inspect the site, verify the relevant document/reports and furnish its report to MoEF&CC, which would be placed before FAC. Before the site visit Committee advised to provide all necessary documents to the committee members such as EIA report, NTCA site visit report etc. for further scrutiny.
15. In view of recommendation of FAC in its meeting held on 9th & 10th November, 2016, the State Govt. of Madhya Pradesh was requested vide this Ministry's letter dated 22.12.2016 to provide the information as sought by FAC and also constitute a committee to inspect the site, verify the relevant document/reports and furnish its report to MoEF&CC for further consideration.

16. The State Government of Madhya Pradesh vide their letter No. F-3/50/2015/10-11/2182 dated 07.10.2016 has submitted their response and placed in file at F/X. The point-wise reply as given is as under:

Point: (i): The project is involving submergence of part core zone and part buffer zone of Panna National Park besides Forest Area in Chhatarpur and Tikamgarh Forest Division and it appears to be in its pristine form.

Reply: In this regard, the State Govt. reported that the detailed reply is given by the project proponent vide their letter dated 16.01.2017 and the same is agreeable.

It is informed by the project proponent that the area of the project involving submergence and other components are as per table given below:

S. No.	Particular	Area in Ha.
1.	Submergence Area	
	Panna Tiger Reserve	4141.00
	Panna Tiger Reserve Buffer (811.4+503)	1314.40
	Other Forest in Chhatarpur (T)	305.60
2.	Total in Submergence	5761.00
3.	Other Components	
	Panna Tiger Reserve	65.50
	Panna Tiger Reserve Canal Area	58.02
	Forest in Chhatarpur (T) Canal Area	31.96
	Forest in Tikamgarh (T) Canal Area	100.52
	Total canal & other components	256.00
	Grand Total of Forest in Project Area	6017.00

As per details given above total submergence area in PTR is 4141 ha which 7.18 % of the total area is Daudhan dam and its submergence is in one corner of the PTR area. As per nomenclature in Wildlife department whole National Park area is known as core area but the dam is not in the center of the park area however it is situated at South-West corner of the PTR area.

More than 90% of PTR area is in the Right side of Ken-River and only 979 ha of this area is going to be submerged and surrounded by villages.

There are four big villages i.e. Daudhan, Kharyani, Palkoha and Sukhwaha are adjacent to left side of the Ken River. While going through the attached map with this letter it is very clear that left side of the Ken River is badly disturbed by the village activities. So, the said pristine area of the PTR is surrounded by big villages. Once the dam is constructed these villages will be relocated on project cost and will result in to the best area for Wild life undisturbed by human activity and get converted in pristine area in real sense.

Due to heavy release of Water from the dam for irrigation down below 40 % of the submergence area i.e. 3600 ha will be opened in month of December and 60% of the submergence area i.e. 5400 ha. will be opened in month of February and so on, and available as very good pasture land for herbivores.

Apart from this 49 Sq. km area of PTR in Chhatarpur district, near Sukwaha, Palkoha is in the left bank of Ken River and which is surrounded by the above stated villages and the area is badly degraded and with very low pray base population. Only one tigress is said to be inhabiting in this area which is totally dependent upon the cattle for food

If all the villages are relocated from the submergence area, then the whole area will actually become pristine area for wild life:

Point (ii): Out of 6017.00 hectares forest area, photocopy of FRA Certificate is available only for 5258 Hectares; original documents are required to be submitted. For remaining area FRA Certificate has not been received.

Reply: The original FRA certificate of 6017 ha and related documents are enclosed herewith as desired in separate volume.

17. It is also imperative to mention that as per the recommendation of Forest Advisory Committee (FAC) in its meeting held on 9-10 November, 2016, a Sub-Committee of Forest Advisory Committee (FAC) committee was constituted on 22.12.2016 to inspect the site, verify the relevant document/reports and furnish its report to MoEF&CC to be placed before FAC for further consideration.
18. The recommendation/ observation of the Sub-Committee of Forest Advisory Committee (FAC), constituted on 22.12.2016 to inspect the site, verify the relevant document/reports, are furnished as under:

RECOMMENDATIONS: The committee observed that if there is no other option and the present proposal is the best possible option, the FC proposal may be considered under the following conditions:

- i. It is not possible to compensate the loss entirely because a large proportion of submergence area falls in a riverine habitat, which is unique and cannot be replicated elsewhere. The project proponent shall ensure that similar extent of revenue area to be added to Panna Tiger Reserve, either as a part of the core or corridor with other habitats or satellite core areas and consider the entire landscape as one conservation unit allowing for development and livelihood needs, since there is hardly any connectivity to other source areas and Panna landscape has to be managed to as a single viable landscape in the interest of long-term conservation. It is insufficient to compensate for the loss of forestland, both within the Tiger Reserve and outside, merely through declaring adjacent territorial forest areas adding similar extent of the submergence area under the jurisdiction of the MP Forest Department as "core" or "buffer" areas to the existing PTR because such territorial forests are already available for use by tigers and other wildlife. Therefore it is essential to compensate the loss of "forest land" through addition of revenue lands/non-forest lands by way of purchase or otherwise by the project proponents and the government.

The project proponents and the government should compensate the loss of forestland through purchase and transfer to PTR of 6017 hectares of revenue and private land. Although the tigers mostly use the forests of PTR to the east of Ken River, it is really to the west of Ken River that habitat has to be consolidated if the Greater Panna Landscape for sustaining a viable tiger population is to be achieved. The status of such revenue lands should be declared as "forest land" under the control of the Forest Department. The committee also examined the site for compensatory afforestation and observed that there are 239 sites identified for CA. The CA scheme as approved by the competent authority has 239 sites. These sites are far away from the PTR. These CA sites are falling in degraded forests.

The CA sites, after afforestation will not serve the purpose of strengthening the tiger landscape since these CA sites are smaller and not contiguous. It will not form a landscape for tiger rehabilitation at all. The Committee again reiterate that the CA should be carried out over non-forest land which shall be procured by the user agency from public in a transparent manner. On the western side of PTR as, reported by committee above. This opinion is also expressed in pursuance of FCA guidelines 3.2(ix) which is clarified as below:-

“The provisions of the above guideline would be applicable to only central Sector projects and not on State Sector Projects, which are being undertaken by Central PSU’s on turnkey basis. In such cases, Compensatory Afforestation on equivalent non-forest land/ a certificate of Chief Secretary regarding non-availability of equivalent non-forest land anywhere in the state shall be insisted upon.”

In the above cases Committee feel that NWDA is a national authority which is working as turnkey basis. In this backdrop the above clarification the CA is being insisted by the Committee on non-forest land.

The committee recommends that the project proponent and State Government should consider equivalent non forest area (6017 ha) adjoining to PTR from the revenue and private land and add to the PTR as a part of Core/ Corridor with other areas or satellite core area.

- ii. The committee examined the Benefit/Cost analysis as produced by the project proponent. In the cost benefit ratio the capital Cost Rs.1374437.32 lakhs, annual cost Rs. 166242.34 and benefit of Rs. 282899.38; has been considered. **The B/C ratio has been projected at 1.57 to justify the project.** The BC ration has not paid attention to eco system services lost due to diversion of unique riverine eco system. The economics of eco-good and services to be lost or to be lost in future, a detailed study regarding- is required to be done by reputed institutions to take future action and modification if required.

The committee recommends for benefit cost analysis should be done considering the ecological cost of diversion of PTR.

- iii. The Ken River has a course of 55 km through the National Park. A major part of the Ken River in the park and its tributary along with its unique habitats of caves, gorges, rock crevices along both banks of the river will go under submergence at full-proposed level of water. To maintain some scope of breeding and resting sites, and to save some critical habitat for wildlife, it is necessary to keep a part of the river without submergence even during the peak height of water. The proposed maximum FRL is likely to submerge the area even beyond Ghairighat and this would significant affect the habitat and connectivity and to ensure that the water level below the Ghairighat, specifically below the road crossing the river. Thus, enough length of the river should be left without submergence during full level of water. This is possible only by reducing the height of dam by at least 10.0 meters. This aspect of height reduction of the Dhaudan dam may be examined in the interest of conserving the Park. Water supply from the dam and also adequate flow in the river during monsoon to recharge the ground water from the dam to the site where it meets the Yamuna should be ensured. Some water should also be spared for PTR management including fire management.

The water flow downstream should be regulated in line with the natural flow regime and, in the lean period, 100% of the existing flow regime should be maintained while in the non-lean period, the prescribed minimum by hydrology and aquatic biodiversity experts should be ensured. The break in release of daily minimum water should be considered as destruction of habitat. The minimum flow of water in the Ken River may save crocodiles and other aquatic animals and it will also maintain the health of river till it joins the Yamuna. A provision of e-flow has already been made in the EIA and EMP of the project to save the wildlife including mugger and gharial, and to maintain the water regime downstream of the dam, but the quantity may be prescribed under some agreement so that the provisions are not ignored as happens in the case of other dams. The Committee feels that the dam height which is 288 meters, as per DPR, can be reduced at least by 10.0 meters. It will reduce the submergence areas of around 2000 ha of forest area. As reiterated above, the excess water in rainy season can flow out of the dam. The ponds and canals can be made to store this excess water downstream.

Committee recommends that the water flow downstream should be regulated in line with the natural flow regime and, in the lean period, 100% of the existing flow regime should be maintained while in the non-lean period, the prescribed minimum by hydrology and aquatic biodiversity experts should be ensured. In drought-prone areas, dams are not filled in the dry period when water is most needed. In this background the height of the Dhaudan dam may be re-examined in the interest of conserving the Park and committee recommends that the height may be reduced by 10.0 meters if not at least 5.0 meter as a trade-off between conservation and development. Water supply from the dam and also adequate flow in the river during monsoon to recharge the ground water from the dam to the site where it meets the Yamuna should be ensured. Some water should also be spared for PTR management including fire management.

- iv. There are certain proposed structures such as powerhouses close to the dam and these may be re-examined and avoided in order to minimize disturbance, since power generation is not the primary objective of the project and will exert continued disturbance to the area.

The Committee is of the opinion that the proposed Powerhouse, which have the capacity of 78 MW, shall not be constructed in the forest area to be diverted. This is based on the strong technical conviction that it will create permanent, irreversible disturbance to the tiger

habitat in PTR. This issue has already been discussed in the Standing Committee of NBWL and agreed upon by MoWR.

- v. Committee observed that about 2287.5 ha of land will be used for construction of canal. This includes 190.5 ha of forest land.
Committee recommends that the canal should be realigned to minimise the use of forest land for construction of canal.
- vi. There is going to be significant secondary impacts caused by transportation and construction activities. Technological integration is required in terms of establishing ropeway for transportation of material and people.
- vii. Provision should be made by the project to strengthen and improve habitat management enforcement, and monitoring activities in the core as well as in buffer areas, as there is risk of increased human activities due to this project. Further, support should be provided for buffer management and community activities, including eco-development and skill development programs, for local villagers. Alternative activities for local communities involved in extractive activities inside PTR should be implemented. In the long-term interest of tiger conservation, it is important to consider and implement landscape level conservation, which is administratively/legally effective by some sort of Landscape Management Authority/Council/ Society and should be brought under the purview of tiger reserve management.
- viii. Given that species such as tiger, vultures and gharial are the key flagship species that are likely to be impacted by this project, there is certainly a need to institute Species Recovery Program in the landscape context and this should be executed after scientifically assessing the population status, response to such disturbance and habitat loss, and long-term viability options.
- ix. It is recommended that a dedicated team involving State Forest Department, National Tiger Conservation Authority, Wildlife Institute of India and the project proponent including NDWA should oversee this project during and post construction phases, and should provide regular management inputs for ensuring the conditions proposed herewith
- x. The project proponent has not provided the digital terrain model (DTM) for true assessment of the area of forest likely to submerge. The area calculation is based on orthogonal projections. The actual calculation based on DTM need to be provided by the project proponent. Total counting of trees in the proposed submergence area has not been done but a sample survey by forest department has estimated that about 18 lakh trees above 20 cm girth at breast height expected to be submerged in the National Park Area and this number may go up . Equally high number of trees will be cut or lost in the forest areas outside the National Park. Thus considerable quantity of carbon stored as biomass would be released once the dam is constructed, in addition to loss of vegetation diversity.

As per DPR the numbers of trees to be felled is around 23 lakhs (above 20 Cm.) This figure had been achieved by sampling in 56 compartment of 1.0 ha each. The trees between 10 to 20 cm have not been enumerated. It has been observed by the Committee that there is a profuse crop of plants below 20 cm diameter. These plants are around 8-10 years old. The project completion will take 8 years and these trees will not be felled at once. It will take 7-8 years to fell these trees in the submergence area. Most of these trees will move to above 20 cm diameter class during the currency of project construction.

The Committee recommends that the sampling intensity should be increased and fresh enumeration shall be carried out by the State Government in consultation with MoEF&CC. This should be done in entire project area.

- xi. The committee recommends that felling should not be done at the height of 4 meter below FRL.

In view of above, it is proposed that the above facts of the proposal may be placed before FAC for examination.
