

**BEFORE THE NATIONAL GREEN TRIBUNAL,  
NEW DELHI  
(PRINCIPAL BENCH)**

Appeal No. 5 of 2011

Wednesday, the 14<sup>th</sup> day of December, 2011

**Quorum:**

1. **Hon'ble Justice Shri C.V. Ramulu**  
(Judicial Member)
2. **Hon'ble Dr. Devendra Kumar Agrawal,**  
(Expert Member)

**Between:**

1. **Vimal Bhai**  
D 334/10 Ganesh Nagar  
Pandav Nagar Complex, DELHI-110 092
  2. **Dr. Bharat Jhunjunwala**  
Lakshmoli, P.O. Maletha, VIA Kirti Nagar  
DT. Tehri, UK – 249161
  3. **Briharshraj Singh Tariyal**  
Village: Naurakh, P.O. Pipalkoti,  
DT. Chamoli, Uttarakhand
- ...Appellants

and

1. **Ministry of Environment & Forests**  
Through the Secretary  
Government of India  
Paryavaran Bhawan  
Lodi Road, New Delhi - 03
2. **Tehri Hydro Development Corporation**  
Pragati Puram, Rishikesh,

DT. Dehradun, UK

**3. Department of Forest**

Through Principal Chief Conservator of Forests,  
Uttarakhand Forest Department,  
Indira Nagar, Forest Colony  
Dehra Dun

.....**Respondents**

**(Advocates Appeared:** Shri Ritwick Dutta & Ms. Parul Gupta, Advocates for Appellants and Mrs. Neelam Rathore, Advocate for Respondent No. 1. Shri Shail Kumar Dwivedi and Shri Abhinav Shrivastava, Advocates for Respondent No. 2 and Shri Ashutosh Kumar Sharma for Respondent No. 3.)

**J U D G M E N T**

**(Judgment delivered by the Bench)**

This appeal is filed being aggrieved by the grant of Forest Clearance (for short FC) accorded by the First respondent through its Order No. 8-65/2009 – FC dated 3<sup>rd</sup> of June 2011 under which deforestation of 80.507 hectares of government forest land diverted for construction of 65m high diversion dam across river Alakhnanda near village Helong in Chamoli District of Uttarakhand State for the purpose of generating hydroelectricity power.

Before going to the facts of this case it may be necessary to notice that the Environmental Clearance (for short EC) was already granted as early as on 22<sup>nd</sup> August 2007 by the first respondent. Though, it is more than three years, the EC was not challenged and the same is valid. However, after issuance of the FC by the First respondent, questioning the same the present appeal is filed. Thus, the only challenge made is for the grant of FC and not EC.

### **Submissions:**

According to the appellants, the appellant No. 1 is a Gandhian Social Activist working for the Environment Protection and Peoples' right over the natural resources in middle Himalaya area since 1988. The appellant No. 2 is an economist and a former Professor of Indian Institute of Management, Bangalore and lives on the bank of the river Alaknanda. The appellant No. 3 is a Social Activist and elected as Van Sarpanch of Village Naurakh. And all of them are affected by the FC of the Vishnugad-Pipalkoti hydro power project in which construction of a 65m high diversion dam across river Alaknanda at Helong Village, Chamoli district of Uttarakhand State is proposed.

The total land requirement of the project is about 120 hectares. Out of which, about 40ha is agriculture land and about 80 hectares is government forest land. The project is being developed by the Respondent No. 2. Respondent No. 3 had sent proposal for diversion of forest land vide their letter no. 65/IG-2521(Chamoli) dated 2<sup>nd</sup> September 2009. The said proposal was considered by the Forest Advisory Committee (for short FAC) of Respondent No. 1 on 30<sup>th</sup>/31<sup>st</sup> May 2011. While that being so, the matter of diversion of forest land for Kotlibhel 1A and Kotlibhel 1B hydroelectric Projects appears to have come up before the Hon'ble Supreme Court and the Respondent No. 1 herein was directed to conduct a detailed study with defined scope of work. The grant of FC in the present case was substantially based on the study made by Indian Institute of Technology, Roorkee (for short IITR) and Wildlife Institute of India, Dehradun (for short WII). As per the scope of work, "effectiveness of mitigative measures and compliance of stipulated conditions on which various projects earlier have been examined", was to be completed, however, no such study was conducted. Thus, the



recommendation of the FAC was based on non-existent study and as such is arbitrary and whimsical. Further, even the environmental flows study recommendations by IITR were also not done scientifically. The environmental flow requirement suggested by the IITR has not taken the ecological functions of flood flows into account. The cost benefit analysis was not evaluated properly and the negative aspects were not taken into account.

The Respondents No. 1 to 3 have filed their detailed reliefs. According to them, all the allegations made and the grounds raised in the appeal are all baseless and liable to be rejected. Further, the very appeal is not maintainable, since the appellants are neither interested parties nor they are aggrieved and/or injured persons as defined in the Act. They are neither directly nor indirectly affected by the project. The Respondent No. 2, in this regard, relied upon several sections of the National Green Tribunal's Act 2010 and also referred to various Judgments of Apex Court as well as High Courts. In fact, diversion of forest land for Kotlibhel 1A and 1B projects had come up before the Hon'ble Supreme Court much before the Respondent No. 1 received proposal seeking prior approval of the Central Government for diversion of the forest land for the Vishnugad-Pipalkoti hydroelectric Project. In compliance to orders of Hon'ble Supreme Court, Respondent No. 1 placed the proposals of Kotlibhel 1A and 1B before them. On examination of the FAC recommendations, the Hon'ble Supreme Court constituted Central Empowered Committee (for short CEC) and entrusted the matter for examination. The suggestions made by CEC were placed before the Hon'ble Supreme Court where Respondent No. 1 was directed for a study and place the matter for reconsideration before the newly constituted FAC. The FAC entrusted the matter to a sub-committee. The sub-committee examined the whole issue in proper perspective and recommended for grant of FC only after taking into consideration the

study made on comprehensive study of carrying capacity of river Ganga in the hilly terrain upto Haridwar. In so far as Cumulative Impact Assessment (for short CIA) or carrying capacity study is concerned, this was undertaken by IITR and WII. Final reports were submitted by them. In view of the same, the appeal is devoid of merits and is liable to be dismissed.

The Counsel on either side advanced elaborate arguments and also submitted their written arguments.

**Discussion:**

We have given our earnest consideration to the respective submissions made by the learned counsel on either side and perused the material made available on record.

We are of the considered opinion that the following questions arise for considerations in this appeal.

- a) Whether the appellants can be called as aggrieved and /or injured "person(s)" as defined under the National Green Tribunal (for short NGT) Act and the appeal is maintainable by them;
- b) Whether the appellants are justified in raising grounds that may be available for challenging the EC or its conditions in the guise of challenging the grant of present FC;
- c) Whether the FC granted in favour of project proponent is in consonance with the principles of sustainable development and precautionary measures;

- i) Whether the environmental flows fixed by the authority is in accordance with the fixed standards or not;
- ii) Whether the cost benefit analysis have been properly conducted while applying for grant of FC;
- iii) Whether the impacts of deforestation on wildlife ecology and environment have been considered or not.

The above points have been examined in detail as under:

**Point (a) :**

***Whether the appellants can be called as aggrieved and /or injured "person"(s) as defined under the NGT Act and the appeal is maintainable by them;***

Before going into the arguments advanced by the Counsel on either side it may be necessary to notice few sections of the NGT Act 2010 in this regard, which reads as under:

**Section 2 (j) :**

"person" includes—

- i) an individual;
- ii) a Hindu undivided family;
- iii) a company;
- iv) a firm;
- v) an association of persons or a body of individuals, whether incorporated or not;
- vi) trustee of a trust;
- vii) a local authority; and
- viii) every artificial juridical person, not falling within any of the preceding sub-clauses.

**Section 16 (e) :**

Tribunal to have appellate jurisdiction -- Any person aggrieved by—

(a to d).....



- (e) an order or decision made, on or after the commencement of the National Green Tribunal Act 2010, by the State Government or other authority under section 2 of the Forest (Conservation) Act, 1980 (69 of 1980).

Section 18 - Application or appeal to Tribunal:

(1) Each application under sections 14 and 15 or an appeal under section 16 shall, be made to the Tribunal in such form, contain such particulars, and, be accompanied by such documents and such fees as may be prescribed.

(2) Without prejudice to the provisions contained in section 16, an application for grant of relief or compensation or settlement of dispute may be made to the Tribunal by –

- i) the person who has sustained the injury; or
- ii) the owner of the property to which the damage has been caused; or
- iii) where death has resulted from the environmental damage, by all or any of the legal representatives of the deceased; or
- iv) any agent duly authorized by such person or owner of such property or all or any of the legal representative of the deceased, as the case may be; or
- v) any person aggrieved, including any representative body or organization; or
- vi) the Central Government or a State Government or a Union territory Administration or the Central Pollution Control Board or a State Pollution Control Board or a Pollution Control Committee or a local authority, or any environmental authority constituted or established under the Environmental (Protection) Act, 1986 (29 of 1986) or any other law for the time being in force:

Provided that where all the legal representatives of the deceased have not joined in any such application for compensation or relief or settlement of dispute, the application shall be made on behalf of, or, for the benefit of all the legal representatives of the deceased and the legal representatives who have not so joined shall be impleaded as respondents to the application:

Provided further that the person, the owner, the legal representative, agent, representative body or organization shall not be entitled to

make an application for grant of relief or compensation or settlement of dispute if such person, the owner, the legal representative, agent, representative body or organization have preferred an appeal under section 16.

(3) The application, or as the case may be, the appeal filed before the Tribunal under this Act shall be dealt with by it as expeditiously as possible and endeavor shall be made by it to dispose of the application, or, as the case may be, the appeal, finally within six months from the date of filing of the application, or as the case may be, the appeal, finally within six months from the date of filing of the application, or as the case may be, the appeal, after providing the parties concerned an opportunity to be heard.

We may also have to take note of the Preamble and Section 20 of the NGT Act, 2010 which reads as under:

Preamble of NGT Act 2010 – “An Act to provide for the establishment of a National Green Tribunal for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.”

Section 20:“Tribunal to apply certain principles–The Tribunal shall, while passing any order or decision or award, apply the principles of sustainable development, the precautionary principle and the polluter pay principle.”

A combined reading of the Preamble and Section 20 of the NGT Act, 2010 would reveal that this Tribunal has got vast jurisdiction to decide the environmental disputes such as enforcement of legal rights relating to environment, compensation, damages to persons and property, and matters connected therewith and incidental thereto including conservation of natural resources. Keeping this in view, we have to examine the case on hand.



The project in question is a hydroelectric power project on Alakhnanda river. According to the Respondent No. 2, the appellants are neither **aggrieved person (s)** nor **injured person (s)** for maintaining an appeal of this nature. According to him, the **person** as defined under Section 2 (j) or as appear in Section 16 or 18 of the Act have no application to the facts of this case. The appellants are neither directly nor indirectly affected and as such cannot **be called as aggrieved/injured person (s)**.

Further, the learned counsel for the Respondent No. 2 strenuously contended that may be the Section 2 (j) and **person** as noticed in Section 16 and 18 all inclusive definition. But Section 18 (2) (a) entitles only a **person** who had sustained injury *per-se* to approach this Tribunal. Further, the **aggrieved person** as contemplated in the Act refers to substantial grievance as to denial of some personal, pecuniary or property right or imposition upon a party of a burden or obligation. In any case the grievance must be substantial and cannot be fanciful. Mere sentimental grievance does not make a person aggrieved (Nekumar K. Porwal vs. Mohanlal Harigovindas, AIR 1963 Bom, 246). A **person aggrieved** must be a **person** who has suffered a legal grievance i.e. a man who has been wrongfully deprived of something or to whom something has been refused wrongfully (2003) 3 SCC 393. Further, the technical considerations, if any involved, Courts generally will not interfere into such matter, since the technicalities are the matters on which experts might disagree which involve nice issues of judgment and choice which required the exercise of informed discretion (1988) 4SCC page 59. It is also the case of Respondent No. 2 that the EC in this case was granted 4 years ago and the same was widely published in the local newspapers and the Appellant No. 1 was individually informed of the same. If the appellants are concerned with the environmental impact of the project, they should have raised the issue in accordance with the law at the stage of EC itself. The appellants have no concern with the environmental

effect of the project but there is ideological bias against the development of projects. The Appellant No. 1 had put forth certain demands at the time of "Public Hearing" regarding the EC. The same was considered and redressed. The appellant did not raise any objection. Thus, the Respondent No. 2 moved forward with the project and also for the sanction of investment of the project. According to the Respondent No. 2, the *mala-fide* intention of the appellants is evident from the recent communications which they have sent to the World Bank demanding review of the loan sanctioned by it. The Appellants also threatened that there has been a challenge of FC accorded and they hope to succeed in the same. Therefore, it cannot be said that they have approached this Tribunal with clean hands and can be called that they are the **aggrieved persons**. The learned counsel for the Respondent No. 1 and 3 also submitted arguments on the same lines.

The appellants however, vehemently submitted that they are the lovers of nature, environment and ecology. Their grievance is genuine and they cannot be thrown out saying that they are not the persons directly aggrieved or injured.

A reading of Section 2(j) (i) to (viii) would reveal that any individual, Hindu undivided family, Company, Firm, an association of persons or a body of individuals whether incorporated or not, trustees of a trust, a local authority and every artificial juridical person not falling within any of the preceding sub-clauses, would indicate "**person**" who can maintain an application/appeal under the NGT Act. But, it is the argument of the learned counsel of the Respondent that even the above defined person shall be a **person** either **aggrieved** or **injured** directly or indirectly and not otherwise.

Then the question arises whether in the environmental matters, a **person** who is really **aggrieved/ injured** shall alone be permitted to approach this Tribunal. A combined reading of the above sections, would indicate, that any person whether he is a resident of that particular area or not whether he is **aggrieved** and/or **injured** or not, can approach this Tribunal. In such situations, it is of course necessary to scan and find out the credentials of the applicant/appellants as to their true intentions and motives. No doubt that in the present case though the appellants have participated in the EC proceedings and they have not challenged the same. However, that does not mean that they cannot challenge the FC proceedings on any available legal grounds (However, it is to be noted that in the guise of challenging the FC, the appellants cannot be permitted to raise the grounds which might be raised, had the EC was challenged). Appellants apprehend a great danger and disaster to the environment and ecology, if the project is not properly envisaged and does not satisfy the principles of sustainable development and precautionary principles as is mandated under Section 20 of the NGT Act. In the matters of environmental cases, any individual or persons and body of individuals can agitate as to the correctness of the study of environment and ecology made by the granting authority. Further, nothing substantial has been demonstrated to doubt the credentials of the appellants except saying that they (appellants) are not **aggrieved** and/or **injured person (s)** under the Act and they are a busy body and their motives are ulterior. The **person injured per-se** as occurred in Section 18 (2) of the NGT Act is only for the purpose of claiming relief, compensation or settlement of disputes, is altogether different from the **person aggrieved** as available in Section 16. **Person aggrieved** and **person injured** are two different words which connote different meaning. Under Section 16, any person aggrieved can approach this Tribunal by way of filing an appeal, whereas, under Section 18 (2), the person injured **per-se**, whether it is an individual or a body of individual or a social organization or a Hindu joint family, etc.



Further, under Section 14 and 16 any **person** can approach this Tribunal for appropriate relief including the relief under Section 18.

The only exception to be made for treating an appeal/application as not maintainable could be a matter which falls beyond the seven (7) Acts as notified in Schedule I of the NGT Act 2010 and in a case of *mala-fide* and vexatious litigation brought before this Tribunal and not otherwise.

In a given case, the person living in the area or vicinity of the proposed project may not know about many intrinsic scientific details and effects of the ultimate project and any disaster, it may cause. The safety of the dam and the likely devastation and loss of properties and lives of the people in the downstream, if the dam, being situated in a highly earthquake prone area, bursts or leaks - the structural flaws of the dam and rehabilitation policies, etc. Therefore, it may not be proper for this Tribunal to reject an Application on the ground that the applicant/appellant as the case may be, is not the resident of the area or not directly injured or aggrieved. The nature has been created over lakhs of thousands of years and such nature cannot be allowed to do away with one stroke of pen, in the guise of development, without properly examining the environmental and ecological impact of the project proposed. No scientific study assumes finality as with the progress of time our knowledge and understanding of the subject matter undergoes metamorphous with new evidence.

It is further very apt to note the relevant provisions of the Constitution of India which reads as under:

**“Article 48A – Protection and improvement of environment and safeguarding of forests and wild life: *The State shall endeavor to***

***protect and improve the environment and to safeguard the forests and wildlife of the country.”***

**“Article 51A - Fundamental Duties: It shall be the duty of every citizen of India: .....**

***(g) to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures.***

From the above it is clear that the State shall endeavor and safeguard the environment and wild life and it is the fundamental duty of the citizen to improve the natural environment including forests, lakes, rivers, and wildlife and also to have compassion for living creatures. Once, the protection and improving the natural environment is the fundamental duty of a citizen, any person can approach this Tribunal and agitate his grievance as to protection and improvement of the natural environment. The statutory provisions are subservient to the constitutional mandates. The person as defined or person aggrieved as occurs in Section 2(j) 16 and 18 (2) of the NGT Act cannot be placed above **“every citizen”** as appears in Article 51A of the Constitution of India. Once the mandate is of every citizen, any person can approach this Tribunal complaining environmental threat in the activities of the State or any organization or individual.

Therefore, we are of the view that the appellants are interested **persons** in the environment and ecology of the area, though they are not directly **affected/ injured** at this point of time. But, they can be definitely called **aggrieved persons** since they apprehend some danger, if the project is launched without taking proper precautions. The **person aggrieved** in environmental matters must be given a liberal construction and needs to be flexible. Therefore, we are of the considered opinion that **persons** like

the appellants are also entitled to approach this Tribunal and the appeal is maintainable.

Point (b)

***Whether the appellants are justified in raising grounds that may be available for challenging the EC or its conditions in the guise of challenging the grant of present FC?***

The learned counsel for the appellant vehemently submitted that the grounds which are available for challenging EC or its conditions can be raised in this appeal while challenging the grant of FC. According to him, it is a matter of environment and ecology and grant of EC & FC cannot be viewed independently. We are of the considered opinion, in view of the legal provisions as to the period of limitation, etc., it may not be proper on our part to examine such areas which fall into the area of grant of EC while considering the FC under challenge. The EC, which was issued, was liable to be challenged within 30 days from the date of decision (Section 16 of the Act). Admittedly, the EC was granted to the project on 22.8.2007 and no challenge was made to EC. The FC alone is under challenge in this Appeal, which was granted on 3.6.2011. Now, it is more than four years and the Appellant No. 1 in fact participated in the EC proceedings and having raised several objections, did not challenge the EC. Therefore, the submission made by learned counsel for the appellant that all the issues that arise from the EC can also be raised in this appeal cannot be countenanced and accepted. But an exception can be made when the issues overlap i.e. the issues that were considered at the time of grant of EC and again while granting FC, since they are considered one after the other, independently. In fact, in the present case, few of the stipulations made under the EC have since been revised, based on the studies that were undertaken for various reasons, as discussed herein after for grant of FC, have been considered in this appeal.



Point (c)

***Whether the FC granted in favour of project proponent is in consonance with the principle of sustainable development and precautionary measures.***

At the outset, it may be noticed that Vishnugad-Pipalkoti HEP is a national project being carried out by the Tehri Hydro Development Corporation (for short THDC). The appeal before this Tribunal is directed against FC dated 3<sup>rd</sup> June, 2011 under Section 2 of the Forest (Conservation) Act, 1980 granted by Respondent No. 1 whereby Stage-I approval of the Central Government under the Forest (Conservation) Act, 1980 for diversion of 80.507 Ha of forest land in favour of THDC for 30 years for construction of 444 MW Hydroelectric Project in District Chamoli, Uttarakhand has been granted subject to terms and conditions stipulated in the aforesaid order. No challenge has been made so far as the procedural aspects are concerned and no irregularities have been brought to our notice. Therefore, we are of the opinion that the procedure for grant of FC followed does not suffer from any illegality or irregularity.

The appellants have raised grounds pertaining to negative impact of tunneling on water springs and its subsequent impact on forests and agriculture; Methane emissions from reservoirs; deterioration in water quality due to less absorption of beneficent chemicals; loss of aesthetic and 'non-use values'; value of free-flowing rivers; breeding of mosquitoes in reservoirs and the negative impact on health; deprivation of sand and fish to local people; negative cultural impacts; and negative impact of blasting/ tunneling, etc. Whereas the respondents have filed detailed replies countering the allegations and relied on various

documents/ reports starting from Environment Impact Assessment/Environment Management Plan report, Geological reports, Appraisal documents for World Bank loan, etc. ***At the face of facts placed, it appears that a majority of the issues have been addressed in one or the other document and accordingly, general and specific conditions have been imposed in the EC & FC granted to the project.*** The main question that arise from the arguments pertains to the fundamental question as to 'whether the project follows the sustainable development and precautionary principles or not?' After detailed arguments and subsequent evaluation of the records made available, following additional documents were sought from Respondent No. 1:

- a. The full report of the sub-committee of FAC under the chairmanship of Dr. Mahesh Rangrajan constituted to prepare a detailed report on cumulative environmental impact of various Hydroelectric Projects which was placed before the FAC on 11/12-12-2009.
- b. The Terms Of Reference (for short TOR) for the Cumulative Impact Assessment (for short CIA) study of various Hydropower Projects awarded to IITR and WII separately including any additional TOR, if any.
- c. Final copy of the report and recommendations of the CIA Study awarded to IITR and WII.
- d. Whether any study made in respect of physical and social environment including project configuration (layout) as a part of the CIA or separately while considering FC in respect of the project in question.

A perusal of the documents reveals that:

1. The diversion of forest land for Kotlibhel 1A and 1B hydroelectric projects had come up before the Hon'ble Supreme Court much before the Respondent No. 1 received proposal seeking prior approval of the Central Government for diversion of forest land for the Vishungad-Pipalkoti Hydroelectric Project.

2. State Government of Uttarakhand in August, 2007 and January, 2008 submitted two separate proposals to obtain prior approval of Central Government under the Forest (Conservation) Act, 1980 for diversion of forest land for construction Kotlibhel 1A and Kotlibhel 1B hydropower projects respectively.
3. The FAC constituted by the Central Government in accordance with Section 3 of the Forest (Conservation) Act, 1980 after examination of these proposals in its meeting convened on 29th April 2008 recommended diversion of the forest land required for construction of the aforementioned two projects.
4. In compliance of the order passed by the Hon'ble Supreme Court on 27th April 2007 in IA No. 1413, 1414 etc. in WP © No. 202/1995 in the matter of T.N. Godavarman Thirumulpad versus Union of India and others, wherein Hon'ble Supreme Court inter-alia directed that "...fresh cases may be cleared Project-wise by the FAC and thereafter such clearances shall be placed before this Court for approval...", " as such the proposal seeking prior approval of the Central Government under the Forest (Conservation) Act, 1980, for diversion of forest land required for construction of Kotlibhel-A and Kotlibhel-1B projects along with the recommendations of the FAC on these proposals were placed before the Hon'ble Supreme Court which in turn referred the matter to CEC for their views.
5. On examination of the said proposals and FAC recommendations, the CEC recommended as below:

*"The CEC is of the view that it would be prudent that the reconstituted FAC reviews these projects after considering the findings of the studies regarding as follows:-*



- (a) *Cumulative environmental impact of various hydroelectric projects particularly on the riverine ecosystem and land and aquatic biodiversity; and*
- (b) *Effectiveness of the mitigative measures and compliance of the stipulated conditions on which various projects have earlier been cleared”.*

6. After examination of the above proposals, the Hon'ble Supreme Court vide order dated 20th February 2009 inter-alia directed as below:

*“CEC had made certain recommendations regarding diversion of 258.737 ha of forest land for Kotlibhel Hydro Electric Projects in favour of the National Hydro Power Corporation Ltd. and diversion of 496.793 ha of forest land for Kotlibhel Hydro Electric Projects in favour of National Hydro Electric Power Corporation Ltd. The FAC will review its earlier order and take a fresh decision and decision may be taken at the earliest at least within a period of five months”.*

7. In pursuance to the said order dated 20<sup>th</sup> February 2009 passed by the Hon'ble Supreme Court, the afore-mentioned proposals were placed before the newly constituted FAC in its meeting convened on 2<sup>nd</sup> April 2009. After careful consideration, FAC recommended that a sub-committee under the chairmanship of Dr. Mahesh Rangarajan may be constituted to prepare a detailed report on cumulative environmental impact of various hydroelectric projects, particularly on the riverine ecosystem and land and aquatic biodiversity, effectiveness of the mitigative measures and compliance of the stipulated conditions on which various projects have earlier been cleared.

8. The FAC Sub-committee met on 06<sup>th</sup> June for the first time. On 30<sup>th</sup> June, 2009, all the project proponents of major hydroelectric projects on river Ganga made their presentations on cumulative environmental impact of projects on river Ganga and study done so far, mitigative measures suggested therein and their compliance.

9. The FAC Sub-committee conducted a field visit of Kotlibhel Stage 1A, Kotlibhel Stage 1B, Kotlibhel Stage II and Srinagar HEP on 29<sup>th</sup> October to 1<sup>st</sup> November, 2009. The FAC Sub-committee also interacted with NGOs, local people and user agencies and considered their views and representations.
10. After thorough study and site visits, the FAC Sub-committee submitted its report containing following major recommendations:
- (a) Minimum natural water flow (i.e. ecological water flow) should be maintained for continuity of aquatic eco-system of river Ganga. This may be decided by the National Ganga River Basin Authority (NGRBA for short), constituted in February 2009. However, till time it should be 16 cumecs or 20% of the lean season flow, whichever is higher.
  - (b) Mahseer Conservation Reserve as proposed by State Wildlife Department should be established.
  - (c) Aquatic Otter Conservation area should be properly demarcated as suggested in the Environmental Management Plan and should have restricted access.
  - (d) A corpus of 5% of the project costs of these three projects should be established for sustaining above mentioned activities.
  - (e) The corpus should be managed by a society registered under Society Act, with representative of the MOEF, representative of State Forest Department and State Wildlife Department, two independent experts and representative of NHPC. This will be constituted by the State Government.

11. The FAC after examination of the report of the FAC Sub-Committee in its meeting convened on 11<sup>th</sup> and 12<sup>th</sup> December, 2009, in general agreed with the report submitted by the FAC Sub-Committee and observed that in view of preliminary assessment done and the fact that several dozen more small, medium and large similar projects are on various stages of formulation, there is potential for irreparable and irreversible damage to the entire riverine eco-system in the future. The FAC therefore, recommended that no further projects of this nature can be considered by the FAC, without a comprehensive study of carrying capacity of River Ganga in the hilly terrain up to Haridwar.
12. Apart from the Kotlibhel 1A and Kotlibhel 1B, following three proposals seeking prior approval of Central Government under the Forest (Conservation) Act, 1980 for diversion of forest land for construction of Hydropower projects in Ganga River Basin were received by the MOEF:
- (a) Diversion of 658.282 ha of forest land for construction of 530 MW capacity Kotlibhel Hydro-electric Power Project (Stage-II) on lease for 30 years in favour of NHPC, in the district of Pauri-Gharwal Uttarkhand.
  - (b) Diversion of 80.507 ha of forest land for construction of 444 MW Vishnugad-Pipalkoti Hydro Electric Project in favour of Tehri Hydro Development Corporation for 30 years in district Chamoli, Uttarkhand.**
  - (c) Diversion of 60.513 ha of forest land in favour of M/s GMR Energy Ltd. For construction of Alaknanda Hydro-electric Project in Chamoli district of Uttarakhand.

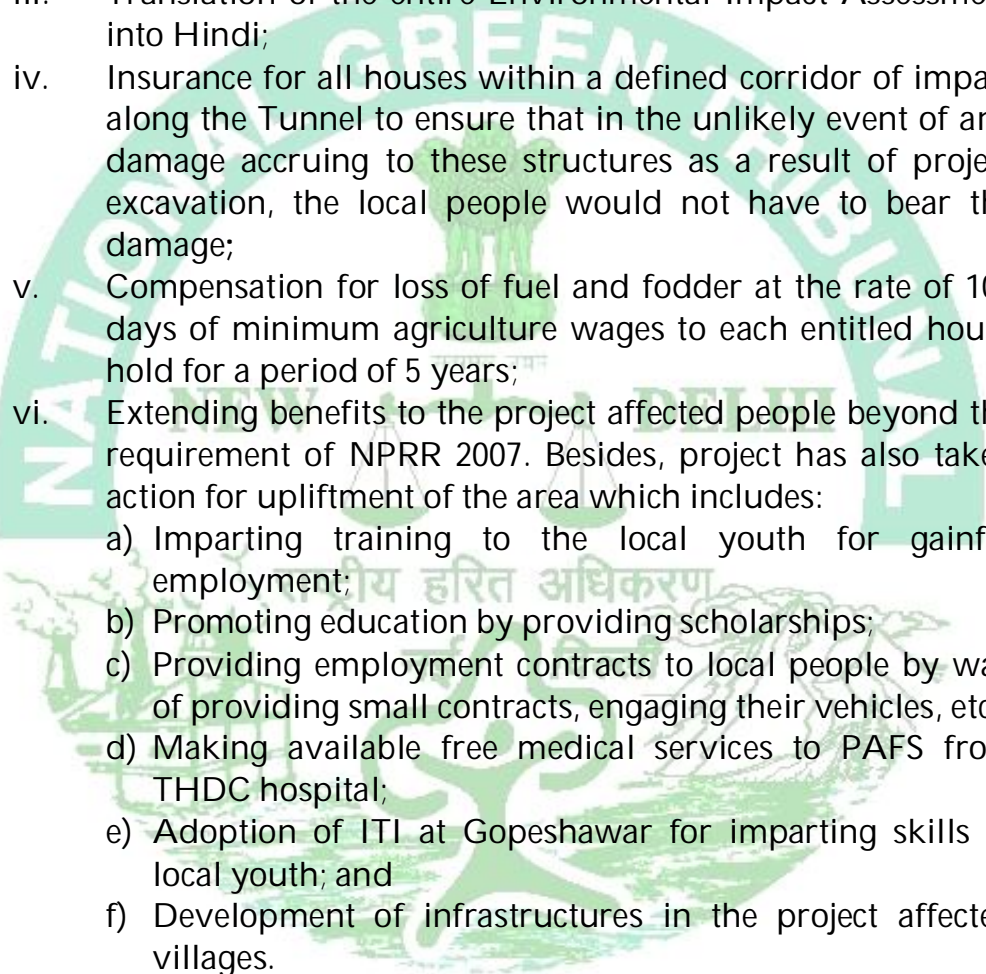


13. Accordingly, the NGRBA was requested to study and fix the minimum ecological water flow with TOR having issues like minimum ecological water flow in river Ganga vis-à-vis sustainable aquatic eco-system and bio-diversity therein, as per their mandate. The NGRBA was also requested that the study should include suitable provision to assess the level of minimum water flow to have a sustainable aquatic eco-system and bio-diversity, impact of these projects on terrestrial flora and fauna, etc. However, it was realized that the NGRBA has not been envisaged as a separate project clearance body. Therefore Forest Conservation Division in the MOEF commissioned the study involving the WII and other appropriate institutions having special knowledge and practical experience in the field of terrestrial, aquatic flora & fauna and bio-diversity. The Forest Conservation Division in the MOEF, therefore, assigned the said study to the WII. Meanwhile, the National River Conservation Directorate of the MOEF also assigned a study on Assessment of Cumulative Impact of Hydropower Projects in Alaknanda and Bhagirathi basins up to Devprayag to the Alternate Hydro Energy Centre of the IITR.
14. The Respondent No. 1 keeping in view the non-availability of any credible study on the issues raised by CEC and as a measure of abundant caution and also to carry out the directions of the Hon'ble Supreme Court, considered the findings of these studies in taking decision on diversion of forest land even for the Vishnugad-Pipalkoti Hydropower Project.
15. In the meanwhile, it is also noticed here that the Vishnugad-Pipalkoti project is a project being carried out by the Tehri Hydro Development Corporation. The Techno-commercial viability to Vishnugad-Pipalkoti project was accorded by the Central Electricity Authority in

September 2006. The Environment Impact Assessment/Environment Management Plan studies of the project were carried out by M/s Water and Power Consultancy Services, a Government of India enterprise, in 2006. The Public Hearing for the project was held in the month of January 2007 at project site. The EC was accorded in August 2007. Further, investment approval for the project was accorded by the Cabinet Committee on Economic Affairs in August 2008. In the meantime, in 2006 it was decided that the project may be considered by the World Bank for funding. As per the World Bank requirements, an additional study entailing detailed field investigations, community consultations and consolidation of previous studies on environmental issues was conducted by an independent environmental engineering firm, M/s Consulting Engineering Services over the period April 2008-May 2009. The additional studies included:

- i. Study of managed river flows in the project stretch of the Alaknanda River;
- ii. Assessment of the terrestrial biodiversity impacts of the Project, including supplemental study of project impact on the Kedarnath Wildlife Sanctuary;
- iii. Assessment of archeological, physical and cultural resources;
- iv. Safety Assurances Plan for the project;
- v. Catchment area treatment plan for the project prepared by the Uttarakhand State Forest Department; and
- vi. Social Impact Assessment and Resettlement Action Plan

In addition to these studies, in the course of time, the project pioneered numerous other good practices in order to minimize the disruption to people living in the project area and to the natural environment. These included:

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- i. Engagement of a reputed NGO, Shri Bhubaneshwari Mahila Ashram, to act as THDC's interface with Project-affected communities, including in Garhwali, the local language;
  - ii. Mandatory use of a Tunnel Boring Machine instead of the traditional drill-and-blast method of driving tunnels to minimize the disruption on people in the project area (blasting will be reduced to the absolute minimum), which also brings environmental benefits;
  - iii. Translation of the entire Environmental Impact Assessment into Hindi;
  - iv. Insurance for all houses within a defined corridor of impact along the Tunnel to ensure that in the unlikely event of any damage accruing to these structures as a result of project excavation, the local people would not have to bear the damage;
  - v. Compensation for loss of fuel and fodder at the rate of 100 days of minimum agriculture wages to each entitled house hold for a period of 5 years;
  - vi. Extending benefits to the project affected people beyond the requirement of NPPR 2007. Besides, project has also taken action for upliftment of the area which includes:
    - a) Imparting training to the local youth for gainful employment;
    - b) Promoting education by providing scholarships;
    - c) Providing employment contracts to local people by way of providing small contracts, engaging their vehicles, etc.;
    - d) Making available free medical services to PAFS from THDC hospital;
    - e) Adoption of ITI at Gopeshawar for imparting skills to local youth; and
    - f) Development of infrastructures in the project affected villages.

In addition to above, other important studies such as Sediment optimization, adequacy of water ways for spillways, Geological Baseline Report were also executed. Based on the detailed studies, the project scheme was prepared in an optimized manner giving



due attention to all the aspects, be it social, environmental or technical. The stringent norms of the World Bank were followed while developing the project scheme and also while finalizing the project parameters.

Following the completion of the additional studies and their incorporation into a single consolidated Environmental Impact Assessment/Environmental Management Plan, in September 2009, THDC organized a Public Hearing at which the findings of all the relevant studies and the associated mitigation measures were shared with project-affected people. At the Public Hearing in September 2009, pradhans, sarpanches and local leaders addressed the public to give their strong endorsement of the project.

Having considered the sound project scheme and robust project preparation the Board of Directors of the World Bank after considering the World Bank's Project Appraisal Document dated 10.06.2011 sanctioned a loan amounting to US\$ 648 million for the Vishnugad-Pipalkoti project on 30.06.2011 and the loan agreement was signed on 10.08.2011.

It would be worth mentioning that a conventional project and site-specific approach to EIA has its limitations when it comes to assessing potential cumulative effects on environmental resources because the impact of a particular project on an environmental resource may be considered insignificant when assessed in isolation, but may be significant when evaluated in the context of the combined effect of all past, present, and reasonably foreseeable future activities that may have or have had an impact on the resources in question. Cumulative effects generally refer to impacts that are additive or interactive (synergistic) in nature and result from

multiple activities over time, including the project being assessed.

Cumulative effects

- (i) are caused by the aggregate of past, present, and future actions;
- (ii) are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who has taken the actions;
- (iii) need to be analysed in terms of the specific resource, ecosystem, and human community being affected;
- (iv) cannot be practically analysed beyond a reasonable boundary; the list of environmental effects must focus on those that are meaningful;
- (v) rarely correspond to political or administrative boundaries;
- (vi) may result from the accumulation of similar effects or the synergistic interaction of different effects;
- (vii) may last for many years beyond the life of the project that caused the effects; and
- (viii) should be assessed in terms of the capacity of the affected resource, ecosystem, and/or human community to accommodate additional effects.

The process of analysing cumulative effects is an enhancement of the traditional EIA components: (i) scoping, (ii) describing the affected environment, and (iii) determining the environmental consequences. The CIA studies in the instant case were awarded to IITR & WII separately with elaborate TOR and time bound deliverables as evidenced from the material placed on record. The TOR not only covered the physical, biological and social aspects but also highlighted the grey areas where specific inputs were sought such as determination of environmental flow, etc. The TOR clearly envisaged capitalizing on the available expertise of the expert institutions in their respective subject area. The scope of work also included integration of

specific inputs/outputs by the two institutions leading to a comprehensive document to be able to provide direction to Respondent No. 1 in taking a final decision.

It is noted from the records made available that IITR submitted its report titled '*Study on Assessment of Cumulative Impact of Hydropower projects in Alaknanda and Bhagirathi Basin up to Devprayag*' in March 2011 whereas WII submitted its **interim report** titled '*Assessment of Cumulative Impacts of Hydroelectric Projects on Aquatic and Terrestrial Biodiversity in Alaknanda and Bhagirathi Basins, Uttarakhand*' in May 2011. The voluminous reports of IITR focused on all existing and proposed hydropower projects of the river basins for the Remote Sensing & GIS Studies, Geological Studies, Seismological Aspects, Water Quality, Biodiversity and River Ecology, Hydrological Studies, Hydropower Development, Impact on Places of Cultural & Religious Importance, Hydropower and Stakeholders to undertake CIA through assessment of hydroelectric projects components of ecosystem to give Conclusions and Recommendations. The **interim report** of WII whereas took account of only five projects i.e. Kotlibhel IA, Kotlibhel IB, Kotlibhel II, Vishnugad-Pipalkoti and Alaknanda-Badrinath and after defining the zone of influence, established the baseline data for floral and faunal attributes. Impact prediction and Evaluation on biodiversity has been done after developing the criterion for scoping and weightage of impacts to give interim findings. It is evidenced from the material papers on record that IITR report looks mostly on physical and social aspects in greater details whereas the **interim report** of WII gives consideration to aquatic and terrestrial ecology only.

It is further noted from the records that the appellants have raised certain objections (similar to the grounds of appeal of the present case) to the IITR report and the same have been forwarded by the Respondent No. 1 to IITR for incorporation in the final report. On the other hand, it is seen that the



WII *interim report* which considers CIA of aquatic and terrestrial ecology only (the final report was expected in September 2011; however, has not been made available to this Tribunal as of date).

In the meantime, after examining the above records, the FAC of Respondent No. 1 took the decision to recommend the project under reference for grant of FC giving due emphasis to the fact that cumulative impact of project (on biodiversity) under reference is least. Undoubtedly, in Indian context, the concept of CIA is an emerging subject area and due to lack of available data base, a lot of constraints are posed in conducting CIA; and in the instant case, we sincerely appreciate the efforts put forward by the two leading institutions of the country namely, IITR and WII in producing the voluminous reports with lot of primary database. However, it is surprising that integration of the physical, biological and social aspects of the environment for arriving at the crucial decision making stage, has been somehow not been attempted at all and Respondent No. 1 has overlooked/ignored its own set of awarded TOR for the CIA. To illustrate this point while attempting CIA, impacts such as quantum loss of agricultural land, barren land, river bed land, number of project affected families, villages, infrastructure, geological setting etc. have not been considered. In view of the stated figures and facts, it is difficult to surmise that what would be the outcome of the CIA study, if integration of physical, biological and social aspects in the present case is undertaken – may be the recommendation remains the same. Given the situation, where a large volume of database is available through project specific EIAs apart from these two CIA reports from IITR & WII, it would be appropriate if a single integrated CIA report is finalized and a final decision is taken. By and large, though it appears that every study was made but it does not appear to have made an integrated and comprehensive study for the purpose of a flawless approach in making the CIA report which is required to satisfy the

principles of sustainable development and precautionary principles, subject to suggestions indicated infra.

Point (c) - (i):

***Whether the environmental flows fixed by the authority is in accordance with the standards or not.***

With regards to question pertaining to environmental flow, though originally part of EC, it is argued that the Respondent No. 1 has stipulated at para (xi) of the FC that minimum environmental flow as recommended in ITR study report shall be released whereas, the environmental flow determined by ITR is erroneous owing to limited data, non-use of Building Block Method and mechanical application of other methodologies as examined by Mr. Himanshu Thakkar and Parineeta Dandekar of South Asian Networks on Dams, Rivers and People. In this context, a study of International Water Management Institute (for short IWMI) has been quoted that gives environmental flow recommendations for the Ganges basin. The environmental flow requirement critically depends upon the development stage of the region and what the society expects from the river. The indicative values could not have been taken as final values. The report of IWMI gives value of 67.6 per cent of Mean Annual Run off (for short MAR) for Ganges, if it is treated as class 'A' river, against 12.1 per cent if it is treated as Class 'F' river. The ITR made a fundamental error in calculating environmental flow requirement at 7.62 per cent to 10.72 per cent and FAC made a similar error in accepting the ITR recommendations. The ITR treated Ganges as Class 'F' river which stands for highly degraded river without application of mind. The ITR has not taken the ecological functions of flood flows into account and not ensured that adequate flood flows shall be released.

The respondents argued that considering the constraints, a multi-disciplinary team of experts used various methods and arrived at range of environmental flow to be released from the project under reference. Finally, Respondent No. 1 accordingly revised the originally envisaged environmental flow of 3 cumecs as approved in EC to 15.65 cumecs subject to the condition that this would be further reviewed once the final report of ITR is accepted. It was also argued that the IWMI report gives the recommendation for the entire Ganges basin not the area under reference that is only a small fraction of it apart from the fact that interpretation of term MAR has been done erroneously by the Appellants. Replies also clarified that normal flood flows are proposed to be released and hence the ecological functions of them are not likely to be altered significantly.

Undoubtedly, hydropower projects provide substantial benefits, but, if poorly planned, designed or operated, they can also have serious consequences in terms of health of rivers and the economic and social well-being of communities dependent upon the goods and services provided by rivers. Traditionally, assessments of the environmental and social effects of hydropower projects focused primarily on areas in the immediate vicinity of the project, however, these projects can impact downstream areas by changing the water flow (volume and timing), water chemistry, physical structure of river channels and floodplains, and hydrologic connections between upstream and downstream and between a river and its floodplain. In recent times, planners are realizing the need to maintain adequate water flows and other habitat conditions to sustain river in the further downstream reaches.

It is well recognized that even with the best-available expert knowledge and analysis, impacts of infrastructure development projects involving especially natural resources such as hydropower projects, the environmental consequences of infrastructure development and operations cannot be



predicted with complete certainty. To have ecologically and socially sustainable, water and energy development and management, strong need is for monitoring, evaluation, and adjustment in the development process. It is further expected that the operating objectives of development projects will change over time in response to changing social priorities, scientific and technological advancements, and climate change. These require options for having flexibility to modify the operation policy, if required.

A number of case studies suggest that it is possible to improve the environmental performance of existing hydropower projects in a cost-effective manner, and sometimes with little or no social or economic disruption. This can be accomplished by implementing various water or energy management techniques that increase the flexibility of reservoir storage and releases such that environmental flows can be released into the downstream channel and floodplain. However, it is always easier and more cost-effective to integrate environmental flow considerations into the planning and design of hydropower projects than to modify or retrofit the design and operation of existing schemes.

It is also accepted that scientific opinion of various experts/institutions can have differing views. However, it is important to view the argument from the view point of application of principles of sustainable development and adoption of precautionary principles.

After examining the figures and facts and the arguments made and considering the provisions made in the stipulations in the FC based on a scientific study by IITR within the available timeframe and resources coupled with flexibility option for revising the same, we are of the considered opinion that the stipulations regarding environmental flow certainly follows the sustainable development and precautionary principles.

Point (c) – (ii):

***Whether the cost benefit analysis has been properly conducted while applying for grant of FC.***

The appellants argued that the FC can be granted only if the benefits are huge and costs are less while diverting the required forest land for the purpose of the project. The true cost- benefit analysis has not been done in the instant case before allowing diversion of the forest land. The appellants in this context relied on the few cost-benefit statements filed by other hydropower proponents and stated that following errors are made routinely:

- (1) Future benefits are not discounted to present values;
- (2) Gross revenues are shown as benefits;
- (3) Environment costs are not calculated in money terms and not taken into account;
- (4) Decline in generation due to recession of glaciers is not taken into account; and
- (5) Long term viability of the project due to low-cost solar and other alternative sources of electricity is not examined.

Drawing parallel between other hydropower projects cost-benefit statements and their own suggested framework for cost-benefit stream parameters, appellants tried to demonstrate that the cost-benefit for the project is 0.13 only as against the projected cost-benefit ratio of 7.81 given by the project developer.

In this context, the respondents invariably stated that the cost-benefit analysis has been carried out adopting detailed guidelines issued for the purpose by Respondent No. 1 (which has been submitted on records). It is

further argued by all the respondents that the cost-benefit analysis prepared in accordance with these guidelines is to be furnished along with the proposals seeking prior approval of central government under the Forest (Conservation) Act, 1980 for diversion of forest land required for such projects. The respondents have further advanced the argument that the case studies of cost-benefit analysis submitted by the Appellants is not in accordance with the guidelines of Respondent No. 1 and details of unit rates, their basis and method, etc. have not been provided and more importantly parallels cannot be drawn to the case study of other project with the project under reference.

Given the finite public and private resources, one need a standard for evaluating trade-offs, setting priorities, and making choices about how to allocate scarce resources among competing uses. The cost benefit analysis provides a way of doing this and this offers a technique for assessing the monetary social costs and benefits of a capital investment project over a given time period. This has traditionally been applied to big public sector projects such as new highway, dams, bridges, flood protection schemes and new industries. At the center of any appraisal decision, the key question remains as to 'does the planned project lead to a net increase in social welfare?' For undertaking cost-benefit analysis, social costs & social benefits are worked out which include calculation of tangible benefits and costs (i.e. direct costs and benefits) and intangible benefits and costs (i.e. indirect costs and benefits – externalities). This aspect is very important as it involves trying to identify all of the significant costs and benefits. Subsequently, the future value of benefits is discounted to the present value since the costs and benefits accrue over time. Individuals normally prefer to enjoy the benefits now rather than later – so the value of future benefits has to be discounted. There are several objections to the use of cost benefit analysis especially when natural resources are involved as they involve problems in attaching valuations to costs and benefits. Some costs are easy to value such as the



running costs (e.g. staff costs), capital costs (new equipment), etc. Other costs are more difficult – not least when a project has a significant impact on the environment. The value attached to the destruction of a habitat is to some “priceless” and to others “worthless”. Costs are also subject to change over time. Similarly, the cost benefit analysis may not cover everyone affected – inevitably with major construction projects; there are a huge number of potential “stakeholders” who stand to be affected (positively or negatively) by the decision. It is in above context that the appellants wish to place a substantial value on public goods such as the environmental attributes.

We must keep in mind that the cost benefit analysis is basically an appraisal technique that tries to place monetary values on all benefits arising from a project and then compares the total value with the project's total cost. It has numerous potential applications although there are inherent difficulties with the issue of valuation. Essentially the process of cost benefit analysis is a comparative one, so that we can perhaps make judgment about which projects from a limited choice should be given the go ahead.

Upon hearing the arguments and perusal of the records furnished, we are of the considered view that the appellants as such intend to have more cost and benefit parameters such as greenhouse gas emissions, climate change, etc. to be included while carrying out the cost benefit analysis. From the records made available, it is noted that guidelines by Respondent No. 1 are available and it is expected that the same should be used while submitting the proposal for diversion of forest land by the project proponent and this cost benefit analysis should be examined with utmost care by the agencies responsible for grant of FC.

In the instant case, however, it is observed that despite elaborate guidelines (Form 'A', Item 1 (v) of form for seeking prior approval under Section 2 of the proposal by the State Government and other authorities in the Forest

(Conservation) Rules, 2003 and prescribed parameters for cost and benefit stream, Annexure VI (a), (b) and (c) in Forest (Conservation) Rules, 2003, against parameters such as item No. 5 of Annexure VI (b), items No. 3, 4, 6 and 8 of Annexure VI (c) of Forest (Conservation) Rules, 2003, only general qualitative statements have been made rather than quantitative statements while making the cost benefit analysis and the same has been accepted by the Respondent No. 1.

In view of the facts stated, we are of the considered opinion that though the cost benefit analysis furnished by the project proponent is not in total accordance with the guidelines of Respondent no. 1 and the same has also been ignored by the Respondent no. 1 during appraisal, who is the custodian of the forest resources of the country. Considering the nature of project, and its likely benefits and comparatively very less loss of forest cover; probably the cost benefit analysis would not alter significantly even if the guidelines are followed in totality with the parameters suggested for inclusion in the cost and benefit stream. However, some suggestions have been made (infra) for better appreciation of the cost benefit analysis while considering such proposals may be taken care of.

Point (c) – (iii):

***Whether the impacts of deforestation on wildlife, ecology and environment have been considered or not.***

The allegation that FAC has assumed that fish migration can be managed by suitable measures, negative impacts on terrestrial and aquatic bio-diversity are also amenable to mitigation and there will be no impact of the project in question on the Kedarnath Wildlife Sanctuary, etc. was also argued in greater details by the Respondents. No substantial evidence has been placed before the Tribunal to come to a different conclusion than what it was recorded by the FAC that though the population status of Cheer pheasant,

which is very poor has been taken note of and no damage is caused to the wildlife available in the area. The project is a national project undertaken by the Government of India and all the precautionary principles were incorporated in the EC and FC to meet the mitigative measures in handling the project; may be in the form of stipulations to implement all the measures as suggested by the respective institutions/authorities. It is also noted that considering the proximity to the Kedarnath Wildlife Sanctuary, it has been mandated in the FC that the proposal requires clearance from National Board of Wildlife. In view of the said facts, we are of the considered opinion that all precautionary measures and principles of sustainable development have been followed in these matters.

**Conclusions:**

For the all the above discussion and reasons, we are of the opinion that there are no substantial merits calling for our interference into the FC, in question, granted by the Respondent No. 1. The appeal stands disposed of subject to the following directions:

1. Integrated CIA Report preparation: The first respondent shall setup an appropriate committee of experts drawn from IITR and WII in the preparation of CIA report of the five projects considered in WII report to integrate the physical, biological and social impacts in making **comprehensive cumulative impact assessment report** and **frame appropriate conclusions and recommendations** within a reasonable timeframe for consideration and final review by the Ministry of Environment and Forest to avoid any unforeseen environmental and ecological threat in the study area in the light of the discussion made against Point (c).



If this direction is not carried out, the appellant is at liberty to take appropriate steps as required under the law.

2. Preparation of Cost Benefit Analysis Norms: Considering the need for better procedures in making sound evaluation of the forest land diversion proposals as discussed in Point c(ii), following options for cost benefit analysis shall be explored for future proposals:
  - a. the guidelines for cost benefit analysis may be updated/modified to provide clear instructions regarding the various cost and benefit elements to be incorporated for the purpose of arriving at cost benefit ratio; and
  - b. the cost benefit analysis for each proposal received for diversion of forest land shall be done adopting the prescribed procedure.

The appeal accordingly stands disposed of. No costs.

(Dr. Devendra Kumar Agrawal)  
Expert Member

(Justice C.V. Ramulu)  
Judicial Member