

## COST BENEFIT ANALYSIS

**Name of Project:** Construction of four laning of Rajauli-Bakhtiyarpur section from Km 101+630 to Km 152+520 of NH-31 (Package-III), Nalanda and Patna district in the State of Bihar.

**Nature of Proposal:** Diversion of 22.4318 hectare of forest land for non- forest purpose for the project "Construction of four laning of Rajauli-Bakhtiyarpur section from Km 101+630 to Km 152+520 of NH-31 (Package-III), Nalanda and Patna district in the State of Bihar."

**Total Length of Project:** 50.89 Km

**Number of district involved-** 02

**Number of forest division involve:** 01

S. No.	Division Name	Proposed Forest Area for Diversion (Hectare)
1.	Nalanda	22.4318
<b>Total Forest Area for Diversion (Ha)</b>		<b>22.4318</b>

**Purpose:** The cost Benefit Analysis is being undertaken as the proposed diversion of forest land being affected due to construction of new national highway for above said project > 20 hectare.

### Estimation of cost of forest diversion

S. No.	Parameters	Remarks
1	Ecosystem services losses due to proposed forest diversion	Ecosystem services losses due to proposed forest diversion Economic value of loss of ecosystem services due to diversion of forest = Net Present Value (NPV) of the forest land being diverted as per prescribed by the Central Government (MoEF & CC). As the forest land proposed does not fall in National Park and Wild Life Sanctuary.
2	Loss of animal husbandry productivity including loss of fodder	The land proposed for diversion is road sides Protected Forest notified by Government of Bihar. No activity is being /has been carried therefore no loss of animal husbandry productivity including loss of fodder will take place.
3	Cost of human resettlement	No resettlement is involved in land proposed for diversion in Forest area.
4	Loss of public facilities and administrative infrastructure	No loss of public facilities and administrative infrastructure is involved in

  
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PATNA

	(Roads, building, schools, dispensaries, electric lines, railways, etc.). On forest land or which would require forest land if these facilities were diverted due to the project	the proposed project.
5	Possession value of forest land diverted	As per MoEF & CC guideline 30% of Net Present Value (NPV) due to loss of forest or circle rate of adjoining area in the district should be added as a cost component as possession value of forest land whichever is maximum.
6	Cost of suffering to oustees	As per MoEF & CC guideline the social cost of rehabilitation of oustees (in addition to the cost likely to be incurred in providing residence, occupation and social services as per R&R plan) be worked out as 1.5 times of what oustees should have earned in two years has he not been shifted.
7	Habitat Fragmentation Cost	As per MoEF & CC guideline while the relationship between fragmentation and forest goods and services is complex, for the sake of simplicity the cost due to fragmentation has been pegged at 50% of NPV applicable as a thumb rule.
8	Compensatory afforestation and soil & moisture conservation cost.	As per MoEF & CC guideline the actual cost of compensatory afforestation and soil & moisture conservation and its maintenance in future at present discounted value.



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Existing guidelines for estimating benefits of forest diversion in CBA

S. No.	Parameters	Remarks
1	Increase in productively attributable to the specific projects	<p>The proposed project will create infrastructure which will provide safe and efficient movement of the traffic under development of NH Connectivity to Backward Areas / Religious / Tourist Places (BRT) Scheme in the central part of the country to upgrade the road network to meet the growing traffic requirement in this part of the country by augmenting the road capacity. The project will result in fast economic growth to the region as it will connect NH-33 and NH-2 at Barhi (Jharkhand) and generally traverses in the Northeast direction passing through Jhumri Tilaiya, Koderma, Nawada, Biharsharif, Bakhtiarpur, Mokameh, Begusarai, Purnea, Dalkhola, Kishanganj, Bagdogra, Siliguri, Malbazaar, Mainaguri, Dhupguri, Cooch Behar, Tufanganj, Kokrajhar, Nalbari and ends at Jalukbari in Guwahati (Assam).</p> <p>Absence of alternative mode of travel in the region between Ramgarh to Biharsharif leaves this highway as the only means of communication. Rail links do cross the alignment but the nearest railheads on the corridor are either Koderma or Hazaribagh Road, over 20 Km and 50 Km away from Barhi respectively.</p>
2	Benefits to economy due to the specific project	<p>The proposed project road will provide uninterrupted free flow of traffic and shall result in</p> <ol style="list-style-type: none"> <li>1. Saving in Travel time, Cost &amp; Natural resources (Fuel).</li> <li>2. Saving in foreign exchange due to less consumption of fuel.</li> <li>3. Increase in income of truck, bus, taxi etc. Owners as they will be able to communicate maximum distance in short time.</li> <li>4. Reduction in accidents as it will provide safe travel.</li> <li>5. Will act as catalyst to the industrial development.</li> </ol>
3	Number of population benefited due to specific project	Population of Jharkhand, Bihar, West Bengal and Assam will be benefited through proposed road.

  
Project Director

4	Economic benefits due to of direct and indirect employment due to the project	Direct and indirect employment will be generated during construction and operation period.
5	Economic benefits due to compensatory afforestation	<p>Economic benefits due to Compensatory Afforestation (CA): As per MoEF &amp; CC guideline these benefits are the benefits from such compensatory afforestation over next 50 years monetized and discounted to the present value should be included as benefits of compensatory afforestation – For benefits of CA the guidelines of Ministry for NPV estimation may be consulted accordingly these benefits have been calculated on two heads namely benefits to CA &amp; benefits due to carbon storage by the afforestation done on CA land.</p> <p>As per MoEF &amp; CC guideline the estimated benefits for the diversion of forest land is the sum total of benefits to economy due to specific project, Economic benefits due to of direct and indirect employment due to the project and Economic benefits due to compensatory afforestation.</p>

Dated:

Place: Patna



Signature of User Agency *Project Director*

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Office Seal PATNA