

**HALF-YEARLY REPORT FOR THE PERIOD ENDING JUNE,2011**

**Ministry of Environment & Forests**

**Regional Office::: Shillong**

**Monitoring Report**

**PART-I**

**DATA SHEET**

1	Project Type: River-valley /Mining / Industry / Thermal / Nuclear / Other (specify)	River- valley (Multipurpose)
2	Name of the Project	Pagladiya Dam Project
3	Clearance Letter (s)/OM No. & dates	No.J-12011/18/05-IA-I Dt: 19.08.1996
4	Location (a) District (b) State (c) Latitudes (d) Longitudes	Baksa Assam 26.37 54.4 N 91.31 E
5	Address for Correspondence (a) Address of concerned Project Chief Engineer (with Pin code & telephone/telex/fax numbers)	(a) The Chief Engineer, Pagladiya Dam Project, Brahmaputra Board, Nalbari, Pin- 781 335 Telephone(03624) 224319,223970 Fax(03624) 223970 (b) Same as (a)
6	Salient features (a) Of the Project (b) Of the environmental management plans	As enclosed in Annex-I As enclosed in Annex-II & Annex-IV
7	Breakup of the Project area (a) Submergence area: Forest & Non- forest  (b) Others	Total submergence area = 37.06 Sq Km (Excluding coverage under Dam, Margin for Dam safety etc.) Forest area = Nil Private land = 30.80 Sq Km (Homestead + Agricultural) other (Govt. land + Reverie area + non cadastral) = 6.26 Sq Km
8	(a) Break up of Project Affected Population, with enumeration of those losing houses/dwelling units only, agricultural land only, both dwelling units & agricultural land & landless labourers/artisans (b) Others (please indicate whether these figures are based on any scientific and systematic survey carried out or only provisional figures, if a survey is carried out give details & year of survey	As enclosed in Annex-III  The figures regarding affected population are provisional figures based on secondary information received from the District Administration in the year 2000. A systematic survey had been initiated by the District Administration in association with the Brahmaputra Board from 26.12.03, was temporarily postponed due to unavoidable circumstance. Again attempt was made by District Administration with

		<p>effect from 27.01.2004, but could not be carried out due to stiff resistance from a section of local people. The BTC issued N.O.C for implementation of Pagladiya Dam Project in Dec,2006. The BTC is taking necessary actions for starting of Zirat Survey to facilitate construction activities of Pagladiya Dam Project.</p> <p>The Revenue Dept, Govt. of Assam instructed the Deputy Commissioner, Baksa in Dec,07 to submit fresh L.A proposal and assessment to Zirat. A meeting was held among the Civil administration, Brahmaputra Board and the representatives of PAFs where the R&amp;R Package as per NPRR 2003 was discussed.</p>
9	<p>Financial details</p> <p>(a) Project cost as originally planned &amp; Subsequent revised estimates &amp; the Years of price reference.</p> <p>(b) Allocations made for environmental Management plans, with item-wise &amp; year –wise breakup</p> <p>(c) Benefit cost ratio/Internal rate of Return &amp; the year of assessment</p> <p>(d) Whether © includes the cost of environmental management as shown in (b) above</p> <p>(e) Actual expenditure incurred on the Project so far.</p> <p>(f) Actual expenditure incurred on the environmental management plans so far</p>	<p>Originally planned: Rs.542.90 crore (at 1999 price level CCEA approved cost). Revised estimate of Rs.1187 crore ( on March,2007 price level) has been submitted to MoWR for clearance of PIB &amp; CCEA.</p> <p>As enclosed in Annex-IV(a) – as per original estimate Annex-IV(b)- as per revised estimate</p> <p>B.C.Ratio (as per revised estimate) Flood control-1:1, Power 1:1, Irrigation-1:1.7 Overall 1:1:56 IRR=16% (Year of assessment 2007)</p> <p>Yes</p> <p>Rs.25.77 crore upto March’2010. As an amount of Rs.10.00(ten) crores given to State Govt. of Assam for R&amp;R plan, has been received back.</p> <p>Rs.11.995 crore up to Jun e, 2008 against R&amp;R</p>
10	<p>Forest land requirement</p> <p>(a) The status of approval for diversion of forest land for non-forestry use</p> <p>(b) The status of compensatory a forestation, if any</p> <p>(c) The status of clear felling</p> <p>(b) Comments on the viability and Sustainability of compensatory a forestation program in the light of actual field experience so far</p>	<p>No forestland is likely to come under submergence As a result of construction of the Project.</p> <p>NA</p> <p>NA</p> <p>NA</p>
11	<p>The status of clear felling in non-forest areas (such as submergence area of reservoir, approach roads), if any with quantitative information</p>	<p>The works for construction/improvement of road have been taken up only for the existing roads. No widening leading to felling of trees has been carried out.</p>
12	<p>Status of construction</p>	<p>Planned date of commencement was April 2001.</p>



## PART-II

### DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO CONDITIONS OF ENVIRONMENTAL CLEARANCE AND ENVIRONMENTAL MANAGEMENT.

1. Clearance letter /OM No. & Date OM No.J-12011/19/95-IA-I dt. 19.08.1996

2. (A) Compliance to conditions of environment clearance

Condition (i):	<p><i>The comprehensive plan for R&amp;R for the affected people shall be based on the latest socio-economic survey and on the basis of prevailing price levels for land and other acquisitions. The problem associated with any encroachment in the rehabilitation sites should be duly taken note of. The Brahmaputra Board shall enlighten the project-affected people on R&amp;R package. The project-affected people shall be consulted in selecting their land and new "abadis". The plan to settle and rehabilitate them will match with the progress of the construction of the dam. The schedule for rehabilitation may be drawn up and necessary financial provisions made before starting the works. A copy of the R&amp;R scheme may be sent to this Ministry.</i></p>
Status of compliance:	<p>The approved comprehensive plan for R&amp;R was prepared on the basis of socio-economic survey conducted in 1990. Subsequently, there have been substantial changes due to increase in the number of R&amp;R sites, types of dwelling units for PAF etc. for which revision of the earlier R&amp;R plan became necessary. Accordingly, the Board has taken up necessary steps for collection of latest data (to be collected through Zirat survey) required for the revised plan. The District Administration is taking necessary steps for conduction the Zirat survey. The Board Authority is in constant touch with the District Administration for early completion of the Zirat survey, through which detailed socio-economic status of the PAF will be collected for assessing the quantum of compensation based on prevailing price level.</p> <p>The problem associated with encroachment in the rehabilitation sites has been duly taken care of and the State Govt. has taken up the responsibility of allotting encroachment-free land for R&amp;R.</p> <p>The Brahmaputra Board and the R&amp;R Committee constituted by the Board for the project are in constant touch with representatives of the affected people regarding various aspects of R&amp;R programme.</p> <p>The revised R&amp;R Plan will be formulated as soon as the latest data are available and copy of the same will be submitted to the Ministry of Environment and Forests.</p>
Condition(ii)	<p>A monitoring mechanism / committee should be established for implementation of the RR programme. This committee should be responsible for interacting with the project in all stages, identifying land for Rehabilitation including agricultural land</p>
Status of compliance:	<p>A state level monitoring committee on R&amp;R has already been constituted with the Commissioner &amp; Secretary to the Govt. of Assam.</p>

	Revenue Dept. as Chairman and senior officials of Brahmaputra Board and Nalbari District Administration; representative of the Ministry of Water Resources, Govt. of India and representatives of ousters and local NGOs as members vide Notification No.BB(W&B)20/97(102) dated 27.08.1999.
Condition (iii)	<i>All watershed management shall be planned in details and submitted to the Ministry of Environment and Forests for approval within six months of clearance of the project. These measures should be completed before the reservoir is filled.</i>
Status of compliance:	A catchment area treatment plan was prepared and furnished as mentioned against condition (iv) below. Due to various unavoidable reasons the cost estimate of the project had to be revised and approval is awaited for the RCE from the PIB and the CCEA. Once the RCE is cleared by the CCEA, detailed watershed management plan will be drawn up and all measures shall be completed before the reservoir is filled.
Condition (iv)	<i>An integrated study of watershed management and catchment area treatment should be undertaken for the whole area including portion falling in Bhutan. This is to decide whether watershed management and catchment area treatment are required for the area falling in Bhutan or not. The report should be submitted to this Ministry within six months from the date of issue of the clearance letter.</i>
Status of compliance:	A comprehensive report called "Status Report and Catchment Area Treatment Plan for Pagladiya dam Project, 1990" prepared by the Board through the AFC Ltd. was forwarded to your Ministry vide No.BB/CE(P&D)89/149/Pt-II/165 dt. 8.02.91. A summary note on the same was also later furnished in a letter addressed to the Additional Director, Ministry of Environment & Forests vide No.BB/CE(P&D)/PR-548/2300 dt. 8.09.1998.
Condition (v)	<i>Special monitoring committee must be constituted with experts from various fields such as ecology, environment, watershed management, soil conservation, sociology etc. to oversee the effective preparation and implementation of various environmental action plan.</i>
Status of compliance :	Action for formation of a Special Monitoring Committee is being initiated.
Condition (vi)	<i>Restoration of the construction area should be ensured by leveling, filling up borrow pits to remove the scars left over due to the project.</i>
Condition (vii)	<i>Necessary arrangement may be made by the project authorities to provide fuel to the labour force during the construction stage of the project so that indiscriminate felling of the trees in the neighborhood may be prevented.</i>
Status of compliance:	Provision has been kept in the environment management plan with necessary cost allocation for establishment of fuel depot for meeting the fuel requirement of workers during construction stage.

(B) Descriptive report on other aspects of environmental management not specifically covered above:

Not applicable

## ANNEX-I

## SALIENT FEATURES OF PAGLADIYA DAM PROJECT, ASSAM

1	<b>Location of the Project</b>	Near Thalkuchi village , about 26 Km. north of Nalbari town in the district of Baska, Assam. (Longitude-91.31 0E, Latitude-26.37 54.4 N.)
2	<b>Category of the Project</b>	Multipurpose- Irrigation, Flood Control and Hydropower.
	(a) Irrigation	To Irrigate 54160 ha of G.C.A on the right bank of Pagladiya, d/s of dam site, with a net irrigable area of 34630 ha.
	(b) Flood moderation	To limit the discharge at N.T. Road Bridge to 625 cumecs, which is considered as safe carrying capacity of the d/s reach of the dam.
	( c) Hydropower	3.0 MW Hydro power for energy generation of 8.64 GWH at load factor 42%.
3	<b>Hydrology</b>	
	i) Name of the river	Pagladiya
	ii) Catchment area	
	(a) Upto dam site	570 sq.km.
	(b) Upto Indo-Bhutan	381 sq.km
	( c) Free catchment in India	189 sq.km
	iii) Maximum observed discharge:	
	a) At Thalkuchi (Dam Site)	1272 cumecs
	b) At N.T. Road crossing	1734 cumecs
	iv) Average Annual Yield	939.16 MCM
	v) Design flood peak for flood protection	1911 cumecs
	vi) 75% dependable Yield	645.73 MCM
4	<b>Reservoir</b>	
	a) Dead storage level	76.85 m
	b)Conservation level	81.75 m
	c) Full Reservoir level	86.50 m
	d) Maximum Water level	88.18 m
	e) Gross storage at FRL	273.83 MCM
	f) Gross storage at MWL	339.84 MCM
	g) Dead storage	45.46 MCM
	h) Liver storage at MWL	294.38 MCM
	i) Water spread area at FRL	3706 ha.
	j) Water spread area at MWL	4231 ha.
	k) Sedimentation rate	0.16 Ha-/Km2/Year
5	<b>Dam</b>	
	a) Type	Rolled Earth fill Dam
	b) Elevation of top of Dam	EL 93.00 m
	c) Height of the dam above deepest river bed EL 68.00 m	25.00 m
	b) Width at top of the dam and length	6.00m, 20.63 km
	e) Width at river bed level	179.85 m
	f) Free board ( above MWL)	4.82 m
6	<b>Spillway</b>	

	a) Type	Ogee shaped
	b) Elevation of Crest	EL 72.00 m
	c) Maximum discharge through spillway	5775 cumecs (PMF)
	d) Type and No. of gates	Radial gates – 6 Nos
	e) Gate size	10 m (width) x 9.5 m (Height)
	f) Top level of the gate	EL 81.50 m
	g) No. of Bays	6 bays of 10 m each
	h) No. of piers	5 piers of 7.00 m thickness
7	<b>Irrigation</b>	
	a) Gross Command Area (GCA)	54160 ha.
	b) Culturable Command Area (CCA)	40743.5 ha.
	c) Net Irrigable Area	34630 ha.
	d) Annual irrigation	54160 ha.
	e) Intensity of Irrigation	
	i) Present	100.64%
	ii) Proposed	133.00%
	f) Annual irrigated area	54160 ha.
	g) Annual Irrigation Water requirement excluding evaporation loss	68232 ha. m.
	h) Annual utilizable ground water	33662 ha. m.
	i) Annual utilizable surface water	34570 ha. m.
	j) Domestic Water Supply	6120 ha. m.
	k) Evaporation Loss	2590 ha. m.
	l) Nos of deep tube well proposed	230 Nos.
	m) Yield from deep tube-wells	34161 ha.m/year
	n) Full supply discharge at head of main canal	46.30 cumecs
	o) Length of main canal	6.20 km.
	p) Total length of branches	39.50 km.
	q) Total length of distributaries	102.30 km.
8	<b>Flood control</b>	
	a) Storage requirement	168.23 MCM
	b) Total financial outlay for entire rehabilitation programme	(a) Rs. 47.89 crore as per original estimate (b) Rs.102.83 crore as per revised estimate.
9	<b>Cost of the Project</b>	<b>Rs. 542.90 crores (original)</b> <b>Rs.1187.00 crores (revised)</b>
10	<b>B.C.ratio ( as per RCE)</b>	
	Components	Bearability method
	Flood control	1.00
	Irrigation	1.7
	Power	1.00
	Project (overall)	1.56
11	Submergence of forest land	Nil
12	Affect on flora	No rare, endangered or threatened species affected As per BSI report)
13	Affect on fauna	No endemic or endangered faunal species affected (As per ZSI report)
14	Affect on wild life	No wild life habitat including Manas Tiger Reserve will be affected (Forest Department,

**PAGLADIYA DAM PROJECT, ASSAM**

(a)	Details of submergence area		
	I. No. of Families	3271	
	II. No. of Persons	18470	
	III. Homestead land (ha)	195	
	IV. Cultivable land (ha)	1852	
	V. Other areas including Riverine (ha)	1659	
	Total (Ha)	3706	
(b)	Details of Rehabilitation Area		
	No of villages	5	
	Total land in Rehabilitation villages (ha)	2236	
	I. Dwelling houses, civic amenities and Infrastructure (ha) for 2256 families	417	
	II. Agriculture land to 2016 land holding Families (ha)	1770	
	III. Grazing land (ha) for 5 villages	49	
	Total (ha)	2236	
©	Financial Requirement for the proposed Rehabilitation program		
Sl. No.	<b>ITEM</b>	<b>Financial Requirement (Rs.in lakh)</b>	
		<b>Original</b>	<b>Revised</b>
1	Compensation	2839.95	4200.29
2	Physical Rehabilitation	710.17	4249.32
3	Economic Rehabilitation	472.00	650.00
4	Training	6.00	10.00
5	Project Implementation	42.63	75.00
6	Price and physical contingency	719.10	719.10
	Total	4789.85	9903.71
Total R&R cost for Compensation, Physical & Economic Rehabilitation March, 2003 price level.....		Rs. In lakh	9903.71

Note:- The details of rehabilitation area is stated in (b) above are likely to change as the rehabilitation area earmarked for the PAF are found to be encroached and the Government of Assam is in the process of identifying alternate rehabilitation sites. The Government of Assam has already handed over 956 Ha (7046 Bigha) of land under different Revenue Circles of Baksa District to the Board and the remaining land is being handed over soon.

**DETAILS OF VILLAGES, HOUSEHOLDS AND POPULATION IN THE COMMAND AREA**

No of villages	149
No of households	22696
No of population	143087

% of S/T population	2.5%
% of S/C population	21.43%

Annex-III(A)

*Table-I*

HOUSEHOLD AND POPULATION OF THE VILLAGES TO BE AFFECTED BY  
THE PAGLADIYA DAM PROJECT

Sl	Name of affected villages	Affected household	Affected population
<b>A.TAMULPUR CIRCLE</b>			
1	Polokata	136	816
2	Uparcharia	72	432
3	Barbhera	150	900
4	Roumari	98	588
5	Kadanga	63	378
6	No.1 Darangapar	40	240
7	Charan Jungle	50	300
8	Kandulimari	198	1188
9	Namchariya	32	194
10	Simlabari	165	988
11	No.2 Darangapar	186	1118
12	Sarubhera	52	313
13	Katahbari	24	143
14	Padmapara	56	337
15	Matangapar	59	351
16	Kumarpara	57	341
17	Kuhipar	53	319
18	Borkajuli	64	386
19	Belkhuti	35	211
20	Balahahi	42	249
21	Mabarbari	19	116
22	Bari Angarkata	3	17
23	NC Angarkata	12	73
24	Doha Angarkata	1	6
	Total	1667	10004
<b>B. BASKA CIRCLE</b>			
1	Gerua	516	2383
2	Thalkuchi	360	1584
3	Adla	121	924
4	Borikadanga	491	2888
5	Madaltana	30	206
6	Simlabari	76	438
7	Uttarpara	7	44
	Total	1604	8466
	Grand Total	3271	18470

Note:- The above figures are based on secondary data furnished by the District Administration, Nalbari and the abject figures will be available after completion of the door to door Zirat Survey by the district administration .

Annex-III(B)

Table-II

**HOUSEHOLD WISE LAND AFFECTED IN THE SUBMERGED VILLAGE**

Sl.No.	Land holding range (ha)	Average land holding (ha)	No. of House hold (No)	Land affected (ha) (Agricultural + homestead)
1	Land Less	Lend Less	352	
2	0.01-0.67	0.54	169	91
3	0.67-0.94	0.8	810	648
4	0.94-1.14	1.07	718	531
5	1.14-1.14	1.21	840	1016
6	1.14-1.80	1.62	214	347
7	1.14-1.80	2.02	168	339
		Total	3271	2972

Notes:-

1. 352 Nos of landless families are likely to be affected.
2. 2972 Ha. of agricultural & homestead land are likely to be affected in the submerged villages.
3. Total 3080 Ha. (2972 + 108) of agricultural and homestead land are likely to be submerged in the affected villages.
4. The above figures have been updated on the basis of secondary data furnished by the District Administration, Nalbari and the exact figures will be available after completion of the door-to-door Zirat survey by the District Administration.

Sl. No.	ITEM	Financial Requirement (Rs. In lakh)	
		Original	Revised
1	Compensation	2839.95	4200.29
2	Physical Rehabilitation	710.17	4249.32
3	Economic Rehabilitation	472.00	650.00
4	Training	6.00	10.00
5	Project Implementation	42.63	75.00
6	Price and physical contingency	719.10	719.10
	Total	4789.85	9903.71
Total R&R cost for Compensation, Physical & Economic Rehabilitation March, 2003 price level.....Rs. in lakh			9903.71

## Annex-IV(a)

**ALLOCATION MADE FOR ENVIRONMENTAL MANAGEMENT PLAN OF PAGLADIYA DAM PROJECT, ASSAM (As per original Cost Estimate)**

A total layout of Rs. 5089.36 lakhs ( at 1999 price level) has been provided in the estimate of the Pagladiya Dam Project. He item-wise and year-wise break up of the lay out is given in the table below.

Sl. No.	Particulars of items	Year wise allocation (Rupees in lakhs)							Total
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	
1	Catchment area treatment limited to reservoir.	6.40	14.70	17.70	19.40	25.00	25.00	42.10	150.00
2	Establishment of a fuel depot and providing fuel to about 500 workers for seven years in Dam construction works and to 1000 workers for five years for canal and drainage works	3.15	3.15	10.40	12.00	12.00	10.40	7.40	58.50
3	Control of aquatic Weeds in submerged area to provide improved habitat to aquatic life						1.50	1.50	3.00
4	Enforcement of anti-poaching laws	0.14	0.14	0.14	0.14	0.14	0.14	0.16	1.00
5	Public health measures to control spread of water and soil borne diseases.	1.57	1.57	1.57	1.57	2.57	2.57	2.58	14.00
6	Restoration of land in construction area for productive purposes in canal and drainage works areas by filling, grading etc.			6.50	6.50	6.50	6.50	7.00	33.00
7	Relief and rehabilitation of affected population	1000.00	1850.00	1939.85					4789.85
8	Plantation in the Dam site with ornamental & other plants for 100 Ha @ Rs.292.50/ Ha					9.75	9.75		29.25
9	Plantation along the bank of main canal and branch canal including maintenance for 3 years including cost of tree guard etc. for 46 km along 8 m wide strip (46000x8/10,000 = 36.8 Ha @ Rs. 292.5/km)					5.19	5.19	5.39	15.77
Total		1011.26	1869.56	1975.86	39.61	59.56	59.46	74.05	5089.36

Note:- Although no forest area will be affected as a result of construction of the project, a token provision of Rs. 1.00 Lakh has been made in the environment management plan of the project for enforcement of anti-poaching laws with a view to protecting any stray wild animals that may be available in the project area.

ALLOCATION MADE FOR ENVIRONMENTAL MANAGEMENT PLAN OF PAGLADIYA  
DAM PROJECT, ASSAM

A total layout of Rs. 10677.70 lakhs (at Mar,2007 price level) has been provided in the revised estimate of the Pagladiya Dam Project. The proposed item-wise and year – wise break up of the lay out is given in the table below.

Sl. No.	Particulars of items	Year wise allocation ( Rupees in lakhs)							Total
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	
1	Catchment area treatment limited to reservoir.			9.09	36.35	72.68	36.35	27.26	181.73
2	Establishment of a fuel depot and providing fuel to about 500 workers for seven years in Dam construction works and to 700 workers for five years for canal and drainage works			5.23	20.93	41.86	20.93	15.70	104.65
3	Control of aquatic weeds in submerged area to provide improved habitat to aquatic life						2.60	2.60	5.20
4	Enforcement of anti-poaching laws			0.21	0.21	0.21	0.21	0.21	1.05
5	Public health measures to control spread of water and soil borne diseases.			3.11	3.11	3.11	3.63	3.63	16.59
6	Restoration of land in construction area for productive purposes in canal and drainage works areas by filling, grading etc.			0.54	2.68	6.70	8.85	8.04	26.81
7	Relief and rehabilitation of affected population	1038.30	79.45	1386.71	3618.44	4160.13			10283.03
8	Plantation in the Dam site with ornamental & other plants for 100 Ha.				14.29	14.29	14.29		42.87
9	Plantation along the bank of main canal and branch canal including maintenance for 3 years including cost of tree guard etc. for 46 km along 8 m wide strip					5.19	5.19	5.39	15.77
Total		1038.30	79.45	1404.89	3696.01	4304.17	92.05	62.83	10677.70

Note:- Although no forest area will be affected as a result of construction of the project, a token provision of Rs. 1.00 Lakh has been made in the environment management plan of the project for enforcement of anti- poaching laws with a view to protecting any stray wild animals that may be available in the project area.