Preface

Since the 1990s, the North East has been the chosen destination for construction of large a number of Mega hydro electric projects. The region is home to a number of river basins, those of Brahamputra and its tributaries, which provide an attractive proposition for governments, both Centre and state to build a case for power generation through these projects.

Although, there have always been uncertainties regarding the issue of big dams, especially from the point of view of the people facing displacement and those whose lives and livelihoods stand to be affected, the debate in general has been one that has been largely confined to discussions between technocrats, academics and environmental activists. People's apprehensions regarding the projects have been more or less sidelined.

In the context of the North East, the first major public outcry took place in 2006, when water released from the Ranganadi dam located in Arunachal Pradesh flooded the downstream area of North Lakhimpur district of Assam, resulting in the loss of lives and livelihood on a large scale. Public resentment against Mega dams became even more visible as the years went by. Recently in April 2012, before the proposed public hearing on Lower Siang hydro project, in Arunachal Pradesh could commence, people came out on the streets in protest.

In light of the growing protests against the mega dams coming up in the Brahmaputra and Barak valleys, CDRO decided to send an all-India fact finding team to these areas. An eight member team visited the three states of the north east, Manipur, Arunachal Pradesh and Assam, between 18-23 April 2012. The team specifically looked into the Hydro Electric Projects of Tipaimukh (Manipur), Lower Subansiri, Lower Siang, Demwe and Debang (Arunachal Pradesh). The team had discussions with a cross section of people, going to be affected by these projects in the three states and few academia and experts on this subject.

What follows is a report of the team highlighting the issues related to the potential impact of these projects on the lives and livelihood of the local people and the overall ecology of the region.

Abbreviations:

AAMSU	All Assam Minority Students' Union
AASU	All Assam Students Union
AATASU	All Assam Tai Ahom Students' Union
ABK	Adi Bane Kebang
AdiSU	Adi Students Union
ADSU	All Deuri Students' Union
AFU	Armed Forces of the Union
AJYPC	Assam Jatiyabadi Yuba Chhatra Parishad
APSCB	Arunachal Pradesh State Pollution Control Board
AUSSU	All Yamne Doyen Student Union
BBK	Bogum Bokang Kebang
BFCC	Brahamputra Flood Control Commission
BNHS	Bombay Natural History Society
BOOT	Build Own Operate Transfer
CAG	Comptroller Auditor General of India
CEA	Central Electricity Authority
CIA	Cumulative Impact Assessment

CISHME	Centre for Inter-Disciplinary Studies of Mountain & Hill Environment
DPR	Detail Project Report
EIA	Environmental Impact Assessment
FSD	Forum for Sian Dialogue
GMCH	Guwahati Medical College Hospital
HEP	Hydroelectric Power
HuJI	Harkat-ul-Jihad-al-Islami
IBA	Important Bird Area
ICOLD	International Commission on Large Dams
KKK	Kangleipak Kanba Kangluo
KMSS	Krishak Mukti Sangram Samiti
LSD ALOU	Lower Siang Dam Affected Land Owners' Union
LSHEP	Lower Siang Hydroelectric Project
MAA	Meghalaya Adventure Association
MABC	Mebo Area Bachao Committee
MMK	Mising Mimag Kebang
MoA	Memorandum of Association
MoEF	Ministry of Environment and Forests
MoU	Memorandum of Understanding
NEERI	National Environmental Engineering Institute

NEFA	North East Frontier Agency
NHPC	National Hydroelectric Power Corporation
PAPs	Project Affected Persons
PMSBV	People's Movement for Subansiri and Brahmaputra Valleys
PREPAK	People's Revolutionary Party of Kangleipak
SIPHRO	Human Rights Sinlung indigenous Peoples Organisation
SJVNL	Satluj Jal Vidyut Nigam Limited
SKJP	Sonowal Kachari Jatiya Parishad
SLHEP	Subansiri Lower Hydroelectric Project
SPF	Siang People Forum
TMPK	Takam Mising Porin Kebang
ULFA	United Liberation Front of Assam
UNIP	United Nation Indigenous People Convention
WAPCOS	International Consultants in Water Resources, Power and Infrastructure Development
WCD	World Commision of Dam
WPSI	Wildlife Protection Society Of India
ZSI	Zoological Survey of India

There should be one map in the beginning of the report covering all the visited projects with name of rivers , places and dams.

Chapter I : Introduction

The onset of liberalisation has resulted in a sudden interest in the development of the North East (NE). The area being rich in natural resources has been specifically targeted for Hydro Electric Power Projects. In 2001, Central Electricity Authority (CEA) in its preliminary study of Brahmaputra basin had identified 168 hydroelectric projects with a total installed capacity of 63,328 MW and termed it as 'future powerhouse of the country. As per the document of Department of Power, Government of Arunachal Pradesh, which shows the Revenue accrued of HE projects in terms of processing fee, upfront premium etc. dated 30-09-2010, altogether 186 Memorandum of Understanding (MoUs) and Memorandum of Agreement (MoAs) related to Hydro Power projects have been signed in Arunachal Pradesh alone. Many of these MoUs and MoAs have been signed between state government and big corporate houses such as Jaypee, Jindal, Reliance, GMR and others under the 'Built, Own, Operate and Transfer' system. As per the claims of the Government of Arunachal Pradesh, the network of these dams, in the state is expected to generate more than 70,000 MW of power, yielding revenue of over 10,000 crores every year.

Each of the MoUs/ MoAs has been accompanied by monetary advances taken from project developers at the time of signing, as "processing fees". As reported in Hindustan Times, dated 29 April 2012, from 2005 to January 2012, the Government of Arunanchal Pradesh collected more than Rs 1,333 crores from the projects as processing fees from different private companies. The performance audit report of Comptroller and Auditor General on capacity expansion Hydro Power Sector by Central Public Sector Enterprises (CPSEs), Ministry of Power (Report No 10 of 2012-13) also revealed that Arunachal Pradesh government allotted six projects to NHPC to generate 20,700 MW which is part of an ambitious programme of constructing 168 dams to generate 63,300 MW. Four of these six projects were transferred subsequently to private parties between 2006-2010 without tendering or competitive bidding process!

It was in the early 1990's, after Manmohan Singh became the finance minister of India, that the Dr. Indra Barthakur committee was appointed to look into the possible ways of exploring the market potentials of the NE. This was projected as '*the solution'* for under-development, insurgency and isolation. A direct fall out of the committee's recommendations was the establishment of North East Development Finance Corporation in 1996. This was followed by the formulation of the North East Industrial Policy in the year 1997. This policy contained enormous tax/duty exemptions as well as loan and transport subsidies for corporate/industrial houses for about 10 years from the date of establishment of the specific industrial unit. Ironically, this was done when subsidies from other areas/sectors were being withdrawn. A non-lapsable Central Grants Pool was put in place. This was followed by a mandatory rule calling all central ministries to spend 10% of their total budget layout- in NE.

The NE as a result became a 'gold mine' for industrial houses. The cement industry was at the forefront of this race, as this was a golden opportunity to capitalize on the available limestone and coal in NE, mostly in Meghalaya. Table 1 presents a glimpse of the medium and large industries which

have come up in the state. Many of the industries coming up, in the NE, such as the cement industry, have a direct link to the construction of big dams. The simultaneous beginning of the construction of dams and the growth of cement industry cannot conceal the relation between the product and the market. According to Planning Commission (Report of the Working Group on Cement Industry for the XII Five Year Plan 2012-2017) twenty-three percent of the cement production in India is directly linked to "irrigation" or the construction of dams and canals.

Here it is important to note that while state governments may welcome these investments in the name of growth and development, it is these very investments that have also sparked series of protests by the local people against the proposed projects. The reality of lives and hardships faced by people in the North-East (NE) hides a sordid tale of military suppression which impacts every aspect of their lives. The Armed Forces Special Powers Act (AFSPA) has been in operation in Nagaland since 1950's, in Manipur since 1980s, and Assam since the 1990's. Part of Tripura has also been reeling under the Act. Out of 101 districts in India under AFSPA, 78 are from the NE. Arunachal Pradesh has a heavy presence of the Indian army as this forms part of the territory over which India has a dispute with China. The declaration of areas as "disturbed", heavy deployment of armed forces and the extraordinary powers conferred on security forces through AFSPA and the pre-occupation of the authorities with 'National security', has created an environment of impunity where fundamental rights of expression, assembly and association are curtailed affecting also the life and livelihood of people. Notwithstanding these impediments there has been a rise in popular opposition to State imposed "development" projects in the upper and lower reaches of the Brahpmaputra and Barak Valleys of Assam and Arunachal Pradesh.

The groups opposing the project are raising a variety of concerns. One, that there has been no comprehensive or cumulative assessment of the likely impacts of the dams on the ecology, lives and livelihood of the people. People living in both the upstream and downstream areas of the river basins have their lives intertwined with that of rivers. Besides being economically dependent on the waters of these rivers for their sustenance, these rivers also are an integral part of their social and cultural belief system of the communities living along the river banks.

There is also the particular concern over the neglect of certain undeniable facts concerning the topography and ecology of the region. For example, it is argued that even in cases where the Environmental Impact Assessment (EIA) has been submitted to Ministry of Environment and Forest (MoEF), reports have ignored the fact that the Brahamputra valley and its adjoining hill ranges fall in the seismic unstable zone which has experienced some major earthquakes in the past. Another concern raised by the organisations opposing the dams relates to the loss of fisheries in the river, changes in the *beel* (wetland), impact on agriculture on the *chapories* (riverine islands and tracts); impact on blockage of river by dam (e.g. driftwood collection, sand and gravel mining), increased flood vulnerability due to massive boulder extraction from river beds for dam construction and sudden water releases from reservoirs in the monsoons; dam safety and associated risks in this geologically fragile and seismically active region.

There is also a misconception about NE and the Sixth Schedule. With the formation of states, many regions covered by the Sixth Schedule divested their states of its purview. As a result, barring Meghalaya and Assam's Karbi Along autonomous council under Sixth Schedule, the areas going to be affected by Mega Dams fall outside provisions of Sixth Schedule. Indeed it has been argued by many people we met in Dhemaji and

Lakhipur, as well as Arunachal Pradesh, that the Sixth Schedule should again be applied as it would have allowed the local communities a greater say over their common resources. It would have helped the anti-dam movement in Assam and Arunachal Pradesh because it empowers district and regional councils which are constituted under it to allot, occupy or settle land in non-reserve forests, or manage forests other than reserve forests, or use canal or water course for agriculture. Although the Schedule also lays down in 3.1 (a) that 'nothing in such laws shall prevent the compulsory acquisition of any land, whether occupied or unoccupied for public purposes [by the Government of the State concerned] in accordance with the law . . .'

It is, therefore, a moot point whether the Sixth Schedule would have helped local communities because despite its provision in Meghalaya, the pace of coal mining, limestone quarrying, proliferation of cement industries etc. have persisted riding roughshod over public concerns.

The MoEF's practice of giving clearance to such dams even before an environment clearance has been granted as it did for seven hydroelectric projects in Sikkim before the study on carrying capacity of Teesta river basin was even completed, shows that the MoEF is violating its own norms of mandatory EIA clearance in such cases, is another major cause of concern.

(Annex 1: list of dams for which MoU/ MoA have been signed)

Another major question being raised relates to the process of constructing and usage of these dams. The main rational for the construction of these dams is power generation and not irrigation, which would be more useful for the people living in the area, who would actually bear the cost of their construction. As per Central Electricity Authority (CEA), the total installed capacity of electricity generation in India as on 31 May 2012, is 2,02,979.03 MW. Out of this, two-third (1,34,635.18 MW) consists of thermal power. The share of hydro renewable energy is 19.2%. The largest share of installed capacity for hydro power comes from the northern region (38.9%) followed by the southern region (29%) and the western region (19%). On the other hand, the share of in-

Table 1: Status of Large and Medium Industries in Meghalaya

Sl. no	Type of Industry	Nos.	Investment made (Rs/lakhs)	Employment generated
1	Cement	10	36067.45	1311
2	Steel Units	48	15073.84	1925
3	Limestone mining and Crushing Plant	4	1796	336
4	Foods	12	3831.48	373
5	IMFL	3	484.94	99
6	COKE	2	756	70
7	Information Technology	2	283	85
8	HDPE Bags	4	1373.4	135
9	Others	31	13361.09	1083
	Total	**116**	**73032.2**	**5417**

(Source: Meghalaya State Development Report 2008–09)

stalled capacity in the North-East is only 3.1%, i.e., 1,200 MW. Of this the major contributor is Assam (35.2%) and Meghalaya (26.2%). The share of Arunachal Pradesh in the total installed capacity of Northern-Eastern hydro renewable energy is around 8.1% at 97.57 MW.

As per the Departmnet of Hydro Power Development, Government of Arunachal Pradesh, the topography of the state is well suited for hydro electric power projects. The state has five major river basins—Kameng River basin, Subansiri river basin, Siang river basin, Dibang river basin and Lohit river basin. Apart from these there are many other smaller river systems which offer conducive sites for such projects. Initially the Central Electricity Authority (CEA) identified 89 major projects which could generate over 49,000 MW of electricity. Similarly potential from other micro/ mini/small projects was estimated to be about 1600 MW. The Hydro Power Policy further states, 'If the available potential can be harnessed, the state would be floating in "hydro dollars" just as Arab Countries are floating in "Petro Dollars"

Even with regard to power generation, it should be remembered that construction of the dams in NE is not to meet the demand for power here. While these dams aim to generate power of 63,000 MW, the estimated need for power in the NE by 2020 is 2,700 MW only. The contradiction becomes more stark when we take a closer look at each of the projects and the way authorities have given their sanction to these, without necessarily taking in the views of the people who are going to be most affected.

In order to streamline HE projects in the state, Government of Arunachal Pradesh has laid down procedure for allotment of these projects for the interested developers including the private developers. Any interested developers can give their offer to the State Government through the State nodal agency. After receiving the proposal/ offer the State Gernment will give consent for for preparing preliminary feasibility report (PFR) through the State nodal agency. Under the Stage –I forest clearance, after getting the NOC from the Department of Hydro Power Development, State Forest and Environment Department will send the recommendation to the Ministry of Forest and Environment, Government of India. Based on the PFR, State Forest and Environment will also decide to give consent for preparation of Detailed Project Report (DPR). Once the DPR is accepted by the State nodal agency through the Secretary (Power), Government of Arunachal Pradesh, an MoU will be executed between the developer and State Government for the implementation of the project. This is followed by conducting of public hearing which is organised by the State Pollution Control Board in association of concerned Deputy Commissioner of the affected areas. The policy document of the State Government related to development of hydroelectric power in the state lays down an emphasis for encouraging the private developers (both Indian and Foreign) provided they have the required technical and financial credentials. The state Governemnt will will assist the private party in obtaining all the statutory approvals required for the implementation of these projects.

Chapter II : Tipaimukh Hydroelectric Project

The Project

Tipaimukh is a small village in a remote corner of Churachandpur district of Manipur. It is located at the confluence of Tuvai (Barak) and Tipaimukh Rivers. A dam has been planned on Barak river at about 500 metres downstream the confluence. All requisite clearances for the dam were obtained by 2008 (*See Box-1, Chronology*). Since then the people of the region, including those of Tipaimukh as well as other villages downstream are agitated about the construction of the dam.

The entire region, which is going to be affected by the construction of the dam, is inhabited by a number of *adivasi* communities. The main ethnic groups getting affected by the Tipaimukh dam, as they are referred in the dam-region are (i) Upstream of the Dam Site: Hmar and Zeliangrong Nagas (both officially STs), (ii) Downstream: Majorly affected—Hmar, Bengalees, Meiteis; Less affected—Kukis, Paites, Zeliang Nagas and Jaintia Khasis. The 2011 census gives the figures of Hmar and Zeliangrong tribes as 212482 which is 93.03% of the total population. The rest 7% are Bengali and Meitei speaking people and some others.

Tipaimukh HEP had a long gestation and a history of shifting sites. The site of this proposed dam on Barak was changed thrice and finally Tipaimukh has been chosen. This hydel project is aimed at producing 1500 MW of electricity. At 168.2 metres above the foundation, this will be a high rock-filled dam. It will impound water and the consequent lake will be more than 3 kms in length upwards from the dam. It will submerge 29150 ha (hectare) of land, out of which 26237 ha will be thickly forested areas of Manipur and Mizoram. The cost of the project has been estimated at Rs.6979.44 crore as per the 2004 notification of the government, and will take about 87 months to complete.

This dam will displace people both in Manipur and Mizoram. A large number of people of Zeliangrong and Hmar communities will be permanently displaced. Government estimates of affected people have been dubiously changing over time. From 37 villages to be submerged (in 1984) to only 8 villages (in 2004), without any change in the plan or design of the dam, tells a story we need not elaborate upon. The project threatens to destroy livelihood, environment, and trade in minor forest produce, among other things.

The Ministry of Environment and Forest's (MoEF) letter granting environmental clearance to the Tipaimukh dam, makes it amply clear that the land required is much more than the land which will actually be submerged, by the dam. 'Private land' that needs to be acquired is also significant. It seems that a large part of this so called private land could be, the common land used by the local people. In that case, how and whether the land acquisition act can be invoked is also an important question.

More than 75% of the land required for the project is forest land. The project has not yet got a forest clearance despite getting environmental clearance almost four years ago, and therein lies an interesting story. The diversion of forest land will require the felling down of 78 lakh trees! The Manipur forest department (Chief Conservator of Forests) and conservationists are up in arms against this large scale felling of trees in a region of such rich biodiversity.

The MoEF's letter granting environmental clearance is also disturbing on many other counts. For instance, it promises development sops like

education and basic health care to the people in exchange for their land, water and forests. So what the people should get as a matter of right, is being given as a "compensation" for giving up their access to resources. Also, the validity of this clearance is also suspect given the fact that there is a land acquisition, resettlement and rehabilitation bill pending in the Parliament to become a law. The old R&R policy will certainly not be valid in case the bill becomes a law.

The Tipaimukh dam is being built by SJVN Limited, a public sector undertaking, a joint venture of the Government of India and the Government of Himachal Pradesh. The political economy of dams being built by the State is no longer vastly different from those being built by private capital. Both are guided by profit and economics of efficiency rather than equity. However, the profit of a public sector corporation reaches the government as revenue. So far as the private sector is concerned it is profit removed from the public domain. This is not to deny that the role of state enterprises as custodians of public funds has eroded because of egregious corruption.

Tipaimukh Dam: Chronology of events

Year	Agency	Proposal/ Plan	Implementation/ Action	Reason	Questions
1954–67	Central Water and Power Commission at the request of the Assam Government	Dam at the following sites: Mainadhar Naraindhar Bhubander	All sites dismissed	Reasons given were geological instability and uneconomic as submergence areas had large cultivable settlements	
1977	Central Water Commission(CWC) begins investigations at the behest of the North East Council (NEC)				
1984	CWC	Chooses a site in the gorge just before the river Barak enters Bangladesh	Project not implemented	It did not have the requisite environment and dam management plan.	Was there a plan for Tipaimukh an alternative site?
1995	Brahmaputra Flood Control Board at the request of NEC	Prepares the DPR (Detailed Project Report) and revises budget for dam at Tipaimukh.			Where, how and who decided the site? And were the reasons of the projects dismissal earlier addressed?

Year	Agency	Proposal/ Plan	Implementation/ Action	Reason	Questions
1995	Naga Womens' Union	Raises question about the legitimacy of dam			
1995	Kamal Nath, Environment Minister	Assures everything will be taken care of			
1998	Manipur Legislative Assembly	Passed a resolution not to implement the project			
1999	Pranab Mukherjee, Dy. Chairman, Planning Commission	Gives assurances on the concerns raised by various agencies			
1999	Central Government	Hands over the project to NEEPCO			'Tipaimukh High dam (Multi-Purpose) Project' was changed to 'Tipaimukh Power Project. #
2001	The Governor of Manipur (Manipur was under President's Rule at that time)	Gives approval to the project.			How come the Governor of Manipur overwritten the resolution of Legislative Assembly.
2003	Public Investments Board Central Electricity Authority	Both give clearance to the project			
2008	MoEF	Environmental clearance given			
2009	Hmar Peoples' Convention (Democrat)		Blasts Drilling Machinery for the project on the Mizoram bank of the river		

 # In the MOEF clearance document, the project is still categorized as Tipaimukh Multipurpose Project. However, in the agreement with NHPC and SJVN, the implementing agencies, the project is referred as Hydel Power Project.

Lives and livelihood

The livelihood of the people of the region depends largely on *jhum* and a bit of settled cultivation all along the river from Fulartol to Tipaimukh. Furaltol is a small town on the banks of river Barak. People depend on the river for many needs such as food (fishes, snails, and tortoise), water (for bathing, washing, cultivation) and transport. River is the only channel connecting Fulartol to Tipaimukh and other villages on the banks of the river Barak upstream of Fulartol. From Fulartol there are 'regular' ferry services to Tipaimukh. It takes about 18 hours of boat-journey from Fulartol to reach Tiapaimukh. A boat with a black flag on top is that of mourners. When someone passes away, outside his or her village, their body is taken to the village on boat. Also, the sick are taken to the doctor on boat. All this indicate the dependence of the people on the river for transport.

As one travels upstream in a boat from Fulartol to Tipaimukh, beside the lush green bank on both sides, a common sight is that of patches of cultivation of pumpkins on the banks. These pumpkins are sold to the Mahajans (traders) at Fulartol and Silchar, normally at the rate of Rs. 5 to 10. Huge amount of ginger is also produced and sold in many nearby markets through middlemen. It is of course a pity that the producers only get a pittance and the major share of the profit is cornered by the middlemen. Ginger sells above Rs. 80 per kg in markets and the producer receives only Rs. 4-5 per kg. In 2011 the ginger crop failed, at some places due to abnormally heavy rain, and at others because of insects, which had cropped up again due to the rains. There are many more agricultural products which the people along the river banks sell and/or consume. They fish in the river and collect snails (*chengkawl*), which sell for Rs. 10 per kg in the local markets and for Rs. 25–40 in markets in Imphal.

Forest is another main source of sustenance for the people of the region. Apart from doing *jhum* cultivation, people also depend on the forest for collecting timber, bamboo, a number of edible fruits and roots and a little gum. Their entire domestic requirement of house-building material and furniture is met by the bamboo and timber they collect from the forest. Bamboo is also sold to the 'bamboo- mahajans' at Fulartol and Silchar.

What are Mega Dams?

The International Commission on Large Dams (ICOLD) defines a large dam as one fulfilling one or more of the following conditions:

- The height of the dam is >15 m (50 ft) from the lowest portion of the general foundation area to the crest, the top most point of the dam. .
- A height of 10–15 m and compliance with at least one of the following conditions
  - Crest of dam is longer than 500 m
  - Capacity of the resulting reservoir is more than 1 million m^3
  - Maximum flood discharge is more than 2000 m^3/s
  - Dam has specially difficult foundation problems
  - Dam is of unusual design

Electricity Generation through hydro projects

Map showing the dam site along with river Barak - Manjit please arrange

The bamboo choppers go to the jungle in groups of 5-7 and stay there for as long as three weeks. The duration of the stay depends on the number of bamboo they intend to bring. They carry provisions for the entire stay and camp in the forest, mostly close to the river. Bamboo is available in different sizes and qualities. Some of the varieties are good for furniture, some for making walls and floors of houses and some for use as poles. Bamboo of the required quality is located, chopped and then extricated from the bushes. Extrication is the most difficult part of the operation and is a laborious process. In most cases it cannot be done individually and hence a few hands are needed for it. After extrication the bamboo has to be carried to the river bank and accumulated there. Once the requisite number bamboo are collected, they are made into rafters/floats by tying them together with the bark of certain trees or nylon ropes and made to float in the river to their destination. It is a very slow journey and sometimes it takes weeks for the bamboo to reach Fulartol or Silchar. It is slightly faster during the monsoon as the depth of the water as well as the speed is more. While transporting bamboo from the forests, the villagers have to dole out money, legally only at one place, that is the forest check-post and illegally at as many as seven places, depending on the distance between the place of collection and the village and also on the number of bamboo transported. The rates of these extortions also vary. Finally the bamboo is either used or sold to get some hard cash.

All this shows how central the river and forest are for the livelihood and social life of the local people. Despite the lack of information and the spread of misinformation, there is a palpable fear that all the activities connected to the two and especially the river, will be disrupted, with the construction of the dam. People expressed their concern and said, 'If the river is devoid of water, we will not be able to carry the bamboo'.

Concerns were also expressed about a small turtle species found at the dam site between Tipaimukh and Fulartol on river Barak. Locally it is known as 'Telte' in Hmar language, and 'Dui Guiphuap' or just 'guiphuap' in Zeliangrong. This beautiful little creature abounds on a certain stretch of the river Barak downstream of Tipaimukh. The local people sometimes catch the turtle for food. It is feared that any disruption in the flow of the river is going to adversely affect this creature and may cause its extinction at least from this place. In a report titled Turtles and Tortoises in Manipur, by Naorem Linthoi and D.K. Sharma of the Department of Zoology, Guwahati University, Assam, there is a mention of the turtles of Barak river and neighbouring areas that we are trying to bring into focus. As per the study, 'Of the 26 species of non-marine turtles and tortoises in India, 19 are found in the northeast region, making this area an important repository for these gentle creatures.' We have not found any description or concern about these, in any of the documents relating to the clearances for the dam, which points at the casual approach to the process of clearance.

The Question of Intra and Inter-Community Relationship and the Dam

There is a strong fear amongst the people of the region that the dam will lead to fragmentation of the their communities. At the Tipaimukh village some members of the Village Authority (VA) feared that their community will be fragmented with the coming up of the dam. They are aware of the fate of the how the 'Chakmas' of Bangladesh have been rehabilitated. They said, 'some of the *chakmas* were sent to Arunachal Pradesh, some to Mizoram, some to Manipur. Thus the community is fragmented now and even the members of the same family have been separated'. They wish to stay at one place or contiguous places. And they know very well that no rehabilitation package can ever ensure that.

Both the Zeliangrong (counted among the

Nagas) and the Hmar (considered part to Kukis) will be affected by the project. Zeliangrongs are largely in the upstream areas and the Hmars are more in downstream of the Dam. Amongst the Zeliangrongs and Hmars, there is a question as to which one of them will be affected more. Misinformation has heightened the tensions, between the two communities and served to benefit the proponents of the projects. Even though it is only too evident that all of them will be adversely affected. The trajectory of capital knows no difference, and in pursuing its targets, can even deepen such differences. There is hope therefore in making a common cause, however challenging that might seem.

Census figures, ethnic divisions

Upstream from Tipaimukh, the two districts of Manipur, namely, Churachandpur and Tamenglong going to be affected by the HEP are inhabited by at least 26 STs and several Meitei groups. The downstream areas include Jiribam (in Manipur), Cachar, Silchar, Haliakndi (in Assam), and Sylhet and others (in Bangladesh), and there is no count of the different communities in terms of language, religion and other cultural practices. The census and other anthropological literature tell us that the majority of people going to be affected in Churachandpur are the Hmars and the same in Tamenglong are the Zeliangrongs.

In Churachandpur the Kukis are the only 'ethnic' group present, and Hmars are part of them. According to the census of 2001, there are 212482 *adivasis* (officially ST) which is 93.03% of the total population in Churachandrapur. The Hmars is the dominant group. Some other smaller groups of *adivasis* also inhabit the area. In Tamenglong district, of the total ST population of 106349, which is 98.38% of the total, roughly 35% are Kukis and 65% Naga. We don't have the means to know the exact figures of Hmars (included in the Kukis) and Zeliangrongs (included in Nagas).

Hmars are largely Christians and in a relative sense, a highly educated community.

The Zeliangrongs, who would also be adversely affected by the Tipaimukh project, are present in large numbers in the Tamenglong district of Manipur. As has been stated already, they constitute 65% of the ST population in Tamenglong. The name Zeliangrong actually is derived from the union of three different *adivasi* groups : (i) Zemei, (ii) Liangmei, (iii) Rongmei. In fact, the three groups use different variants of a common language. The union happened during the 'Zeliangrong movement of 1927–32', which all of them celebrate even now. In fact, two more names crop in reference to the Zeliangrongs, which are (i) Kabui, (ii) Kacha Nagas.

Different communities have their own ethnic organisations which are quite active at the village level. For instance the HYA (Hmar Youth Association) and HSA (Hmar Students Association) in Tipaimukh organize cultural activities and village sports. They also helped the women who had lost their husbands and elderly in the village in re-building their houses after a recent storm which devastated many houses in Tipaimukh and other villages. The youth even collected the necessary building materials from the forest.

Resistance against the project

The ethnic organisations mentioned above are in the forefront of protests against the mega dam at Tipaimukh. Apart from these, there are other militant organisations such as Kangleipak Kanba Kanglup (KKK) and People's Revolutionary Party

of Kangleipak (PREPAK), resisting the project. Statements by these two organisations address the issue of the proposed dam at Tipaimukh in as many parameters as possible. Instead of assuming that the 'indigenous' people are an unchanging lot or that they do not need any change these go on to catalogue destructive potential of the project, as well as speculate on the alternatives. They have proposed smaller dams and have extended their support if the state government decides to implement the proposal made by them or is sympathetic to their proposal.

Some NGOs are also engaged in informing people about the project, its details, the legal and constitutional provisions for the safeguard of the affected people as well as the consequences. Human Rights Sinlung indigenous Peoples Organisation (SIPHRO) is one such organisation. In its position paper on the Tipaimukh dam, it talks about the World Commission on Dams (WCD) and United Nation Indigenous People (UNIP) Convention to drive home the point that the proposed dam is being pushed in the most undemocratic manner on people who have not been informed adequately about the project. The basis of its critique stands on the recognition of 'the voice of the *adivasis* in their own land'.

Despondency and Resignation: Non-Acceptance/ Acquiescence

Wherever we met people we came across two distinct positions on the project. A section of the villagers maintained that they do not want the project, as they have several apprehensions about it, feel insecure about the promised gains and but quite certain about what they will lose.

There were some opinions in favour of the project and its promises. When we engaged more with the people with these views, it became clear that they have resigned to their fate. Over the decades, they have accepted a reality that what they want will never be available. For example, it has been so many years since Independence, yet they have not got good roads, hospitals, schools etc. In Tulien village, people said, 'There is a small primary school in the village run by the church. We have to send our children to Fulartol for higher classes, as that is the nearest where schools are located. Most of the private schools charge a lot of fees, and then one has to pay for boarding and lodging also.

A member of HYS, Omega of Tulien village, narrated how his infant son fell ill needing urgent medical assistance. He had to carry the child to the doctor by boat down the river to the another village which is accessible only by boat.. By the time he reached the doctor's clinic, his baby was no more. He said, 'If we had a dispensary here, or even a doctor in our village, my son would be alive.' But he also said that he loves his village and, therefore, will not leave his village at any cost or compensation.

But in Tipaimukh a few Village Authority (VA) members maintained that if the project takes shape, they may get a much needed road. There a road connecting Tipaimukh with Parboung but it is not motorable and there is no regular public transport service. They also imagined that once the project takes off they will have access to a school, a hospital and electricity. There are only a few electric lamps in the village run on solar cells. For instance there are such lamps in a few houses, shops in the village and in one of the three churches. There are about 55 households in the village. It is an irony that the villagers feel that their requirements of electricity, school, road, and electricity will be met only if the dam is built. On being asked whether it is not the task of an elected government to provide these even otherwise, they said, 'It has not so far. Will it ever?'

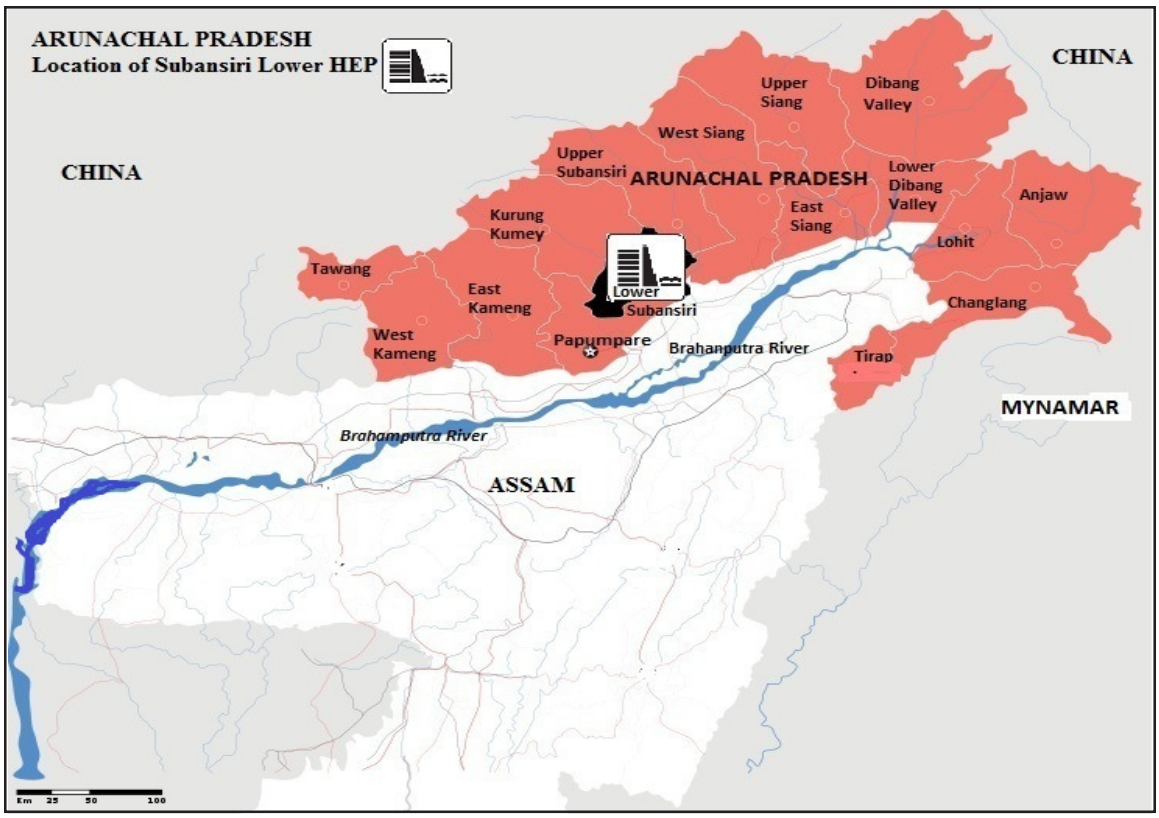
Once the appellation of 'largest democracy' was brought into the discussion, the VA members rather spontaneously started talking of the farcical nature of the 'public hearings' for the project, with

some passion and resentment. One of the villagers said, 'They did not properly announce the meeting, nor was it made in time. Because of this whosoever could come for the assembly reached there. But they were not ready to listen to us. They did not even explain as to what they intend to do. They made some announcement over the mega-phone, which was not clear to us. They had come prepared with a decision and discussed amongst themselves in front of us. Then they walked away.' Another person added, 'They came and went as if we were not worth talking to.' The villagers were actually referring to the commissioner and his officials, who came in a helicopter to the village for the meeting. The Environment Impact Assessment (EIA) report was neither translated into local languages nor circulated fifteen days prior to the public hearing as is required under the rules . From all this the 'public' hearing appears to be a farce.

Chapter III - Subansiri Lower Hydroelectric Project

The Project

The 2000 MW Subansiri Lower Hydroelectric Project (SLHEP), being built on the Assam–Arunachal Pradesh border, has become the major trigger of political debate on the downstream impact of dams in the entire North-East region. The river Subansiri on which the dam is being built is one of the major tributaries of the Brahmaputra river contributing about 10% of its total discharge. Subansiri has its origins in the Central Himalayas, south of Po Ram Peak in Tibet at an approximate altitude of 5340 m. It is also called Lokong Chu at its source. Traversing through the snow clad mountains of Great Himalayas, it enters India through Arunachal Pradesh. The river bed level drops from more than 4000 m height in the mountainous region to less than 100 m in the foothills before it enters the plains of Assam.



The SLHEP project was first envisaged by the Brahamputra Flood Control Commission (BFCC) way back in 1955. The proposed dam was a multipurpose project primarily for flood control and irrigation at the Assam and Arunachal border. Before finalising the dam at its present site, BFCC also investigated three other alternative sites, in the upstream area of Arunachal Pradesh. Originally,

Total population and percentage of rural & tribal population in Assam and affected districts

	Total Population	% rural population	% of STs to total population of the state/ district	% ST population in the rural area
Assam	***2,66,55,528***	***13.6%***	***12.4%***	***95.3%***
Dhemaji	5,71,944	93.2%	47.3%	97.6%
Lakhimpur	8,89,010	92.7%	23.5%	98.4%
Tinsukia	11,50,062	80.5%	5.8%	96.0%
Dibrugarh	11,85,072	80.7%	7.5%	89.2%
Jorhat	9,99,221	82.9%	12.3%	98.1%
Sibasagar	10,51,736	90.8%	3.9%	96.7%
Total of 6 dist	**58,47,045**	**85.9%**	**16.7%**	**96.80%**

Primary Census Abstract; Census of India 2001

the Board had proposed a 257 metre high rock fill dam which was later reduced to 122 metres. However, the height was further reduced to 116 metre as such height would cause a flood situation in some towns of upstream areas of Arunachal Pradesh. In May 2000, the Board handed over the project to the National Hydro Power Corporation which after further investigation decided on the current site located near North Lakhimpur (Dhemaji district) on the border of Assam and Arunachal Pradesh. The nearest railhead is Nagaon and the nearest airport is Lilabari.

As per the NHPC, the MoEF has already given the clearance for diverting altogether 4030.56 ha of forest land for this project. Out of this 79% fell in Arunachal Pradesh, while the rest 21% in Assam. There is no mention of diverting agricultural and private land for this project. The entire downstream area to be affected by this dam falls in Assam. The six districts going to be worst affected by SLHEP are Dhemaji, Lakhimpur, Tinsukia, Dibrugarh, Jorhat and Sibsagar and these are mostly inhabited by tribal population. The population of these six districts constitute more than one-fifth of the total population of Assam. 86% of these people stay in the rural area whose main occupation is agriculture or related activities. Therefore nearly all the tribal population staying in the rural areas of these six districts are going to be affected by the SLHEP. Among the most affected of all tribes is the Mising community that is largely dependent on fishing and farming in the upper reaches of Subansiri.

Communities living in the downstream area are culturally and materially associated with the river. Their lives are woven around the river and they procure various livelihood resources from it such as water, fish, wood, sand and pebbles fulfilling their basic needs for survival. Their fears regarding dams were built on the recollections of their past experiences of devastating floods caused during the Great Assam Earthquake of 1950. Being located in a geologically and seismoligically sensi-

tive area, their fears of dam waters breaking loose were real. These fears resulted in protests by local organisations such as Takam Mising Porin Kebang (TMPK) and the All Assam Student Union (AASU) who demanded a comprehensive study of the downstream impact of the project. This eventually led to the constitution of an expert group comprising of officials of the Ministry of Power, Government of Assam and representatives of AASU.

The expert group in its interim and final report, submitted in June 2010, highlighted various issues and problems associated with the project. It studied the likely impact of the project on the people living in the downstream areas and involved in traditional agriculture, fishery and allied activities. It also studied the environmental impact of project on Assam in general, particularly in the districts of Dhemaji, Lakhimpur and Jorhat. The major findings and recommendations of the Expert group were as follows:

1. The selected site was considered to be inappropriate as the location was considered to be geologically and seismically sensitive. Therefore the group recommended against constructing the mega dam at the present site.
2. The study also pointed out that the River Subansiri carries a huge amount of sediments which could be trapped in the reservoir. This would require frequent flushing of sediment at regular intervals resulting in heavy siltation in the downstream area. This could be avoided only through proper management and treatment of slopes and plantation in the erosion prone upstream areas of the river.
3. The expert group noted that the project might create the problem of erosion and have major impact on the vegetation in downstream area and create a drought-like situation in the downstream area. This could potentially cause the conversion of agricultural land into sand/silt infested wasteland along the river Subansiri.
4. The expert group study also pointed out the impact of abrupt diurnal fluctuation of flow discharge of water once it started its operation. The minimum discharge during winter season, 6 cumec for 18 hours during the winter season, could have an adverse impact on the river ecosystem and the ecology of the connecting wetlands. On the other hand the maximum discharge of 2560 cumec of water from the dam during summer could cause a flood-like situation in the river. Since most of the river embankments in the area are built using sand and soil devoid of proper plantation, floods could cause high erosion.
5. The other significant finding of the expert group was that this dam could cause major upheaval impact on the socio-economic life of the people in the rural areas who are entirely dependent on agriculture. There is fear that the dam could cause misery among the fish catchers and loss of agriculture due to seasonal and diurnal variation in the flow of water. Secondly the river Subansiri is also used by the people of this area for transportation and communication route as roads in these areas are in dilapidated condition. With the construction of the dam, the river will have low flow during the dry season, thus restricting the movements of boats used for the transport purposes. In summer, the sudden release of water could cause a flood-like situation affecting the transportation network. The river is not only used for transporting people but also for domesticated animals, crops, thatches, pottery articles and forest products. The damming of the river could stop a cheap means of transport thereby depriving people of their regular income through using water transport related activities.
6. The study also pointed out that this dam will could have an adverse impact on the ecology of the downstream area. River Subansiri harbours more than 130 varieties of fish spe-

cies and other aquatic animals, 230 species of plants, 308 birds 19 mammals and other types of animals. Subansiri is also known for endangered freshwater dolphin, whose survival is largely dependent on this river as it provides the suitable condition for their maintenance and breeding. Any change in the artificial regulation in the flow of water might not be conducive for the survival of these species.

Based on the results of the study, the expert committee therefore ruled against the construction of the mega dam of the present dimension at the selected site. The study went further and suggested not considering the Himalayan foothills for any mega hydro power project. The study was of the view that even if the project is redesigned by sufficiently reducing its height and power generating capacity, it will have many environmental and socio economic problems. Therefore the study recommended many measures for various authorities in order to minimise the downstream impact. Some of the measures related to the management of siltation, adoption of adequate flood cushioning measures, construction and maintenance of embankments including thick vegetation cover all along the river banks, proper monitoring of water level at upstream reservoir and installation of warning system in case of an emergency situation in the downstream area.

Apart from these recommendations the study highlighted the need for creating awareness amongst the people, who consider rivers in the valley as their lifeline. This could only be done if they are convinced of the alternative measures adopted for the provision of resources which would help in supporting their life and livelihood. Therefore better irrigation facilities should be created through the construction of canals to increase the crop output in the area. This would also restore and increase the groundwater condition and surface water availability in the wetland of the downstream catchment of the Subansiri. The study further emphasised improving the road network in the area so that people could market their local products. In order to maintain the ecology of the area the study suggested long term conservation strategies such as establishment of dolphin parks, operational rules for maintenance of river discharge for protecting different species of fishes, provision of eco-fishery and establishment of live fish gene banks.

After the submission of this study the NHPC presented counterpoints in order to justify the projects. Most of their justification related to the precautionary steps to be taken on major points raised by the study. In its argument the NHPC cited various government and government appointed studies justifying the dam site and its structure. The major NHPC counterpoint was the comparison of SLHEP with Bhakhra dam located in the western Himalayas. The expert group had clearly pointed out in its argument against the SLHEP at its present site since both these dams are incomparable being different types of dams. Bhakhra is a storage dam built to hold silt for 140 years with the foundation of 58 m and a height of 225 m. But SLHEP is a run-of-the-river pondage dam with a foundation of 9 m and height of 125 m and the reservoir will be filled with silt within a couple of years. Secondly Bhakhra is a multipurpose dam catering to irrigation needs of the area, flood control, fisheries and power generation. SLHEP, conversely, is being built for only power generation and it is never meant to be used for irrigation and flood control measure.

The major lacuna in the NHPC counterpoint was the selection of the site. Before selecting the site, the NHPC never conducted the proper seismological study on the safety of the dam and people living in the area. The question is: how can the NHPC start the construction before the completion of such a study? People opposing dams have

fear in their minds about the safety of such mega dams. How can a study for addressing the safety concerns of a dam and its construction go hand in hand? In the case of the Bhakra dam, which is not falling in such a sensitive seismic zone, the ratio of foundation depth to total height is 1:3.88, whereas in the case of SLHEP it is 1:13.89, pointing out the gross inadequacy of a dam being constructed in a highly seismic zone. Even the ratio of SLHEP is not used in dams located in safer zones.

The major concern related to this dam is the choice of location which is considered improper as it falls in the worst seismic zone with a seismicity of 8.5 magnitude on the Richer scale. Secondly, the 115 m high concrete dam has an improper design as the spillway is designed for a peak flood of 12,000 cumecs which is highly underestimated as the historical maximum flood of 21,200 cumecs occurred in July 1971. As per the International Standards the Spillway Design Flood must be at least 2 to 3 times of this historical flood, amounting to at least 50,000 cumecs.

In spite of these observations by the expert group and recommendation to reconsider the decision regarding location, height, structure and purpose of the dam, the NHPC, governments of Arunachal Pradesh and Assam and the Central government not only chose to ignore these concerns but also decided to continue with the construction work. As per the latest statement of anti-dam activist, Akhi Gogoi , of Krishak Mukti Sangram Samiti (KMSS), roughly 40% of dam work has been completed and Rs 5200 crore has already been spent on the construction.

The issue was also raised in the Assam Legislative Assembly in July 2009. After the debate the Assembly had set up a house committee to look at the impact in the downstream area of Assam. In its July 2010 report, the house committee categorically endorsed the observations and recommendations of the expert committee.

Further the issue was also raised in the Rajya Sabha, by Birender Prasad Baishya, a Member of Parliament, in August 2010. In the same monthKMSS- led a delegation to Union Environment Minister Jairam Ramesh and apprised him of the situation and the concerns of the people of Assam who will not only loose their livelihood but also fear for their safety with regard to the dam being constructed at lower Subansiri. Following this Jairam Ramesh held a public consultation in Guwahati in September 2010. After listening to the concerns of the people, he promised to communicate all these to the prime minister. However, the Central government chose to ignore all these and relied on the Environmental Impact Study carried out by MoEF for at least 50 large hydro electric projects in Arunachal Pradesh from September 2006 to August 2010 where the baseline data in most of the cases is restricted to only 10 km downstream of the project and the actual 'impact prediction' has been asked to be restricted to an even shorter distance downstream—only between the dam and powerhouse.

The perfunctory and inaccurate nature of impact assessment studies as far as wildlife is concerned has been exposed by ecologists. For example, the EIA for the Lower Subansiri lists 55 species of fish in a river which has at least 156. When an additional EIA was asked for in this case the Zoological Survey of India (ZSI) reported after an additional study of 6 days that in the Lower Subansiri project 'The long and vast water body thus created by the reservoir will be happy haunt for aquatic creatures.' The fact that the still waters of the reservoir would not be an appropriate environment for local aquatic species, while it may benefit exotic species introduced for fisheries seemed to have eluded the writers of the ZSI report. Yet such inadequate reports on the ecological impact of these projects become the basis on which MoEF clearances are secured, making the EIA process appear to be a farce—one which will unfortunately lead to real and tragic consequences *for*

the biodiversity and environment in large parts of the north eastern region.

Resistance and Repression

The opposition to the SLHEP project started in the early years of 2000. Although AASU was earlier in favour of the dam as they believed that dams signified development, it was only post-2006 that they started opposing big dams, meant for only power generation and not for multipurpose usage such as flood control and irrigation in the downstream area. In 2003, TMPK, a student body of the Mising community in upper Assam raised their concerns about SLHEP. There were some on and off protests, which picked up after the flood situation created by the Ranganadi project in 2008 (*See box* Ranganadi Hydro Electric Project (RHEP). In August 2011, AASU refuted the claims of the NHPC that the Lower Subansiri hydro-electric dam has been designed in a way so that it can withstand any high seismic activity and urged the NHPC officials to have interaction with the experts of Gauhati University and IIT Guwahati and then come out with the truth. It also demanded a study on the cumulative downstream impact on the people on account of SLHEP and other upcoming hydroelectric dams in Arunachal Pradesh. All these demands were turned down and even the Government of Assam extended full support in facilitating the ongoing construction work of SLHEP.

Ranganadi Hydro Electric Project (RHEP)

Ranganadi Hydro Electric Project (RHEP) is a 405 MW Stage I project in Lower Subanbsiri, Arunachal Pradesh, commissioned in 2002. The project is a glaring example of poor environmental and social impact assessment. After the construction of the dam the free flowing river has been reduced to a trickle in the downstream area. It has also snatched away means of livelihood for the people of downstream area such as pisciculture and horticulture. In 2006 there were flash floods caused by the release of large quantities of water by the North Eastern Electric Power Corporation (NEEPCO) (public sector power developer) without warning to the people living in the downstream areas. When the people complained to NEEPCO, its response was the issuing of a circular on 2 June 2006 that warned:

> *The gates of Ranganadi diversion dam may require opening from time to time . . . all villages, individuals, temporary settlers etc. residing on the banks of river and other nearby areas . . . on the downstream of the dam to refrain from going to the river and also to restrict their pet animals too from moving around the river . . . the corporation will not take any responsibility for any loss of life of human, pet animals etc. and damage of property and others.*

Again in June 2008, continuous rain in the area led to breach in bunds of RHEP which caused flash floods in Lakhimpur district. Assam was on Red Alert. The UNDP Situation Report of Flood (Sitrep) lists the following damage:

Affected districts: 3 (Lakhimpur, Sonitpur and Dhemaji)

Population affected: 3,11,420

Human deaths: 7 (till 17.06.08)

Damage details in Lakhimpur district:

Villages affected: 347

Area affected: 75,195.65 hectares

Population affected: 3,01,325

Houses damaged: 50,220 (preliminary assessment)

Human deaths: 4 (till 17.06.08)

Cattle loss: 7,525

Public utilities damaged: 15 (including buildings and roads)

Power supply and telecommunications disrupted partially

Railway tracks at several places and National Highway 52 submerged under water resulting in disruption of train/ traffic movements

The end of 2011 saw new dimensions in the protest movement. It was no longer limited to *dharnas* and petitions by individual oganisations, scattered at different places. These forms of protest were hardly taken notice of by the government or police officials. In order to create a forceful protest movement and sustain it, more than two dozen organisation including Krishak Mukti Sangram Samiti (KMSS), the Asom Jatiyatabadi Yuva Chattra Parishad (AJYCP), the Takam Mising Porin Kebang (TMPK) and Mising Mimag Kebang (MMK) came together and started their joint protest against the SLHEP. The protest movement picked up steam in November 2011 when protestors were attacked by police at several places such as Chetia, Vishwanathchari and Dholpur. From November 2011, these organisations started a blockade against the transporting of construction materials and machineries to the dam site.

The CDRO team which toured various place of Assam was told that the protest against movement of power equipment for construction of the dam started well in late 2010 when people opposed the movement of turbines at Tejpur, the district headquarter of Sonitpur. People not only tried to block its movement but also lodged their opposition against all the mega dams being planned in the North-East. Before that people had also protested when this turbine was being unloaded at Vishwanath Ghat in Tejpur district. People had come to know about this and located the actual site where it was being unloaded and staged a demonstration against its movement to the dam site. Later the Sonitpur district administration sent back these turbines to Pandu Ghat in Guwahati. Here again 300 activists of KMSS and many students from Guwahati University, Cotton College and the Handique Girl's College launched an indefinite dharna on 5 May 2011 demanding that the vessels carrying material of construction of dams be sent back immediately. KMSS General Secretary Akhil Gogoi gave a call to the people of Assam to oppose the big dams and also to continue the agitation till the vessels carrying the turbines and other materials are not taken back from the state.

The protests against the movement of turbines and other construction machineries were also staged at other places such as Jogighupa, a large industrial city on the bank of Brahmaputra River in the district Bongaigaon where KMSS activists noted these movements under the BSF custody and also at Barganga and Deka village in district Sonitpur. On 23 November 2011, when the district administration tried to move these turbines and other machineries, KMSS activists not only blocked their movement but also kept a vigil of their movements for 8-9 days. They started guarding their movement on a regular basis. Another attempt was made to move these machineries late at night on 29 November. The KMSS activists who were around came to know of this at 1.30 in the night and reached Baliapad in Sonitpur district. The turbines and machineries kept on moving and KMSS activists along with the local people tried to block their movement at different places such as Beddit, Gopur and Sotia. This resulted in lathi charge by the police and mass arrest of the people and KMSS activists. Then these turbines and machinery reached at Dholpur in Lakhmipur district. Thousands of people gathered here in order to oppose the movement of these materials. The protest continued for over 5 hours of pitched battle with the administration in which people pelted stone on the police per-

sonnel and other officials who were assisting in the movement of turbine to the dam site. Meanwhile people in the Lakhimpur town also started getting mobilised at 2.30 in the night even before the turbine had reached there. When the turbine reached at Lakhimpur, local people were already on the road and prepared to stop the movement of turbine at any cost. Assessing the unfolding of a volatile situation, the district administration had a meeting with the leaders and people and then advised the NHPC officials to park the vehicle carrying turbine in the district administrative office for its safety. KMSS activists and the locals decided to keep a watch on its movement.

Meanwhile the protest continued near Ranganadi where KMSS and activists of other organisations had set up camp in order to enforce the blockade. This went on for 15 days when on the night of 16 December 2011 police started *lathi* charge on the people who were present there—brutally beating them. The police dismantled the camp and was successful in breaking the blockade. Following the police repression on the people sitting at the camp, KMSS, AJYPC called for a complete bandh of Lakhimpur district. All the roads leading to the town and further to the dam sites were blocked using trees and stones. Finally KMSS, along with other organisations such as MMK, All Assam Tai Ahom Students' Union (AATASU), All Deuri Students' Union (ADSU), All Assam Minority Students' Union (AAMSU), Asom Jatiyatabadi Yuva Chatra Parishad (AJYCP), Sonowal Kachari Jatiya Parishad (SKJP), People's Movement for Subansiri and Brahmaputra Valleys (PMSBV) etc. decided on indefinite blockade of the movement of construction material meant for the NHPC's dam site at Gerukamukh by setting up a camp on NH-52 at Ghagar Nagar in North Lakhimpur. In the meanwhile AASU, TMPK along with 13 other organisations also put a camp obstructing the movement of construction material. They set up their camp on NH-52 at Kakoi Chariali in North Lakhimpur. Both these blockades led by KMSS and AASU stalled complete movements of vehicles carrying materials and construction goods of the NHPC in North Lakhimpur. KMSS and AASU along with other ethnic organisations of Assam created observation centres in the entire state to keep a watch on the movement of the materials for the Subansiri dam project.

This led to a complete halt of the work going on at SLHEP. Therefore since December 2011, when the activists of various organisations in the area started their protest through setting up their camp at the very strategic points of access to the dam site, there has been no progress in the work, as the movement of construction materials to the project site at Gerukamukh has been stopped. The blockade was lifted for only 2 days on 30 December 2011 in response to the state government's call for creating a conducive atmosphere for discussion. However, nothing happened and the blockade resumed after 2 days. Various other organisations also gave their support to the ongoing agitation against SLHEP. According to one estimate nearly 57 organisations joined the agitation after the resumption of blockade on December 30.

Response of the NHPC and State Government to the Blockade

The Assam government appointed a group of ministers to talk to the agitators and a joint meeting of a group of ministers (GoM), civil society members and experts was held along with the NHPC officials on 5 January 2012. In this meeting KMSS and AASU representatives categorically said no construction material would be allowed to reach the Lower Subansiri project site till the technical expert committee's downstream impact studies were over. The group which represented the agitators placed its demands before the GoM, which included the holding of a tripartite discussion involving the Central government, Assam government and anti-dam groups to find an amicable so-

lution to the issue and a downstream impact study as well as cumulative impact assessment before construction of any big dam in Arunachal Pradesh. The delegation also demanded that the Assam government should take up these issues with both the Central and Arunachal governments to take effective steps to keep all the construction works of the Lower Subansiri and other such projects in Arunachal on hold till a solution is arrived through the tripartite discussion.

Reacting on the outcome of the meeting, the NHPC officials clarified that the NHPC had gone ahead with the construction of the project with due approval from various statutory agencies including the Central Water Commission and also reviewing the report submitted by experts from IIT Guwahati, Gauhati University and Dibrugarh University. They were unhappy on the decision taken by the organisations protesting the dam. The NHPC were of the view that if at all further modifications are required, it can be done even during the course of construction. It considered the stopping of the construction of the dam to be untenable. After the collapse of the talk, the organisations decided to continue their blockade. However, they allowed the transportation of essential commodities meant for the consumption of workers at the dam site.

Assam government on the other hand considered the meeting held with the agitators as constructive. The chairman of the GoM, Mr Pradyut Bordoloi, who is also the power minister of the state, accepted that although there was no concrete outcome of the meeting the government will take the final decision on the fate of the ongoing big dam projects after getting reports from the CD Thatte Committee constituted by the Central government and another expert committee proposed by the State government. However, the minister was very categorical on the issue of ongoing construction work at the LSHEP saying the construction of lower Subansiri could not be stopped as 40% of the work was already complete but efforts would be made to clear the doubts in the minds of the people and the agitators relating to the dam.

Later on 13 January, the police forcefully arrested more than 100 supporters of the KMSS from the Ghaghor Chariali area near National Highway No. 52 in Lakhimpur district and allowed the NHPC trucks carrying the construction materials to move towards the Lower Subansiri Project site. The police also fired in the air to disperse the protesters. The police also took the agitators to the Bhoganadi Thana. However, hundreds of the local people came out on the streets to stop the NHPC vehicles from moving. Later the blockade continued at the same site.

The agitation got fresh impetus when in a rally on 23 February at Choldhua, Thekragudi, Arunachal Pradesh based organisations such as Adi Students Union, Siang People Forum etc. participated and not only gave their support to the protest movement against SLHEP but also came out against big dams in their home state. Nearly 50,000 people attended this rally. In this rally KMSS General Secretary Akhil Gogoi gave a call to the people to participate in an anti-dam rally at Delhi, scheduled to be organized during the forthcoming budget session of the Parliament.

Views against the dam were also expressed during a two-day convention of the Brihattar Nadi Bandh Birodhi Nagarik Samiti held on 26–27 February at Guwahati, which was also attended by the representatives of political parties, academicians and activists. The draft resolution adopted at the convention called for a halt on the construction work of the project and moratorium on new projects until a comprehensive assessment was carried out.

The CDRO team reached the blockade site on 19 April and interacted with members of different organisations sitting at the camp. It was a makeshift camp at the road bifurcating NH-52 leading

to the project site which is also the headquarter of the 2,000 MW Lower Subansiri hydro electric project on the Assam–Arunachal Pradesh border. The team also interacted with members of Nari Mukti Sangram Parishad, which had come to support the ongoing agitation. Most people sitting at the camp site were from nearby villages. A photograph of the Raganadi dam was hung on the fluttering cloth of the makeshift camp. One side of the dam was full of water while the other side was a dry river full of pebbles and sand. Pointing to this photograph, in a very plain and simple way, people communicated to us their fear—about what happens to a river when a dam is constructed. The dry land on the other side of the dam showed them the future of their land, once SLHEP is completed. The team was also shown a nearby field to show the impact on their field even during the construction phase of the SLHEP. We could clearly see the fields covered with the sand deposits adversely impacting the rice cultivation. This is on account of the collection of stones from the river bed in the upper region to be used for dam construction. Later the team also visited the Lower Subansiri dam site. Due to the blockade of the construction material in the entire area, there was no construction work noticed.

Just after the week of our visit, on the evening of 11 May 2012, the police clamped down on the people sitting at the blockade camp at Gagor on NH-52 and demolished it. On the same day an NHPC tanker containing 11,000 litres of diesel was found half burnt at Thekeraguri village adjacent to NH-52, just past the Subansiri river bridge. This incidence became an instant excuse for the police to demolish the blockade camp. The same night and the day following police let loose a reign of terror in surrounding villages. Around 14 men and women were mercilessly beaten. People were dragged out of their houses and arrested on charges of burning the tanker. All these were booked under IPC 120 B (criminal conspiracy), 149 (unlawful assembly), 384 (extortion), 427 (mischief with damage to property) and 435 (mischief with fire). It should be noted here 120 B is a stringent and a non-bailable section. The people arrested are either farmers, students or small-time businessmen, running shops or *dhabas*. The police also arrested four activists of KMSS from Lakhimpur town on charges of burning an NHPC diesel tanker in the district when they tried to launch an indefinite hunger strike in protest against the harassment of anti-dam activists by the government. According to the SP of Lakhimpur these four activists were wanted for their involvement in the diesel tanker burning case.

Meanwhile KMSS General Secretary Akhil Gogoi launched an indefinite hunger strike in Guwahati on 20 May protesting government harassment on anti-dam activists. He denied the involvement of anti-dam protestors in the burning of the tanker. He alleged that police was purposefully failing to identify the real culprit and using this incidence to arrest KMSS members and the camp in Lakhimpur was damaged without any provocation. Meanwhile, hunger strikes by other activists of KMSS were also reported from other areas such as Jorhat and Golaghat to put pressure on the government. Prime Minister Manmohan Singh on a visit to Guwahati made a statement that the concerns of the people would be taken into account through a cumulative impact study of the areas likely to be affected by all the upcoming dams. However, there was no commitment made on stopping of the ongoing construction at the SLHEP.

On 24 May, Akhil Gogoi, along with another activist, 65-year-old Hasi Ram Deka, was forcibly picked up by the police from the Lakhidhar Bora Kshetra premises in Guwahati where he was staging an indefinite fast and admitted to Guwahati Medical College Hospital (GMCH) despite resistance from his supporters. However, this action of the police's did not deter other KMSS supporters and civil society members and they continued

Tarun Gogoi's Statement

Guwahati, July 24: The Assam Government today said a big 'no' to the proposed construction of mega dams on the Siang and several other rivers in Arunachal Pradesh, and Chief Minister Tarun Gogoi said he would take up the matter with the Prime Minister.

'The Prime Minister, too, is not in favour of big dams. I am trying to convince my Arunachal Pradesh counterpart of the hazards caused by big dams,' Gogoi said here on Thursday.

Gogoi's statement comes in the wake of an allegation made by leaders in Arunachal Pradesh that the Assam government did not properly brief new Assam Governor Shiv Charan Mathur about the need for having big dams in the region. Within hours of taking charge earlier this month, Mathur voiced his vehement opposition to the construction of mega dams in the Northeast.

'I am totally with the Governor on this issue. The Governor is absolutely right in opposing big dams. Big dams in Arunachal Pradesh will not solve our flood problems. In fact, they will do more harm than good. We will have to convince Arunachal Pradesh of this,' Gogoi said.

The Assam Chief Minister said Arunachal Pradesh must understand that the hill state would not only see the displacement of communities but also the destruction of forests and the environment due to the construction of big dams. 'I have already set up a high-powered expert committee to look into what damage the dams already constructed in Arunachal Pradesh have caused to Assam,' Gogoi said.

'I am for small dams that do not have any risk given the high seismicity of the Northeastern region,' Chief Minister Gogoi said. NGOs and environmental groups in Assam and other Northeastern states have been campaigning against big dams pointing to their adverse impact on the region's biodiversity.

The Assam Government, last week, asked Centre to study the cumulative damage that the state was likely to suffer if big dams were erected in the neighbouring state.

Source: The Indian Express, 25 July 2008

their protest in Guwahati as well as other parts of the state.

On 9th June 2012 Chief minister Tarun Gogoi, offered security cover to NHPC if it wanted to resume construction work of the 2000-MW Subansiri Lower hydel project in neighbouring Arunachal Pradesh, which has been in limbo since December 2011. Gogoi's assurance to the NHPC came a day after the company's Subansiri basin project Executive Director expressed concern over the project's fate because of the opposition by some groups. It should be recalled that the same Tarun Gogoi had strongly opposed the construction of Mega dams in 2008 **(See box).**

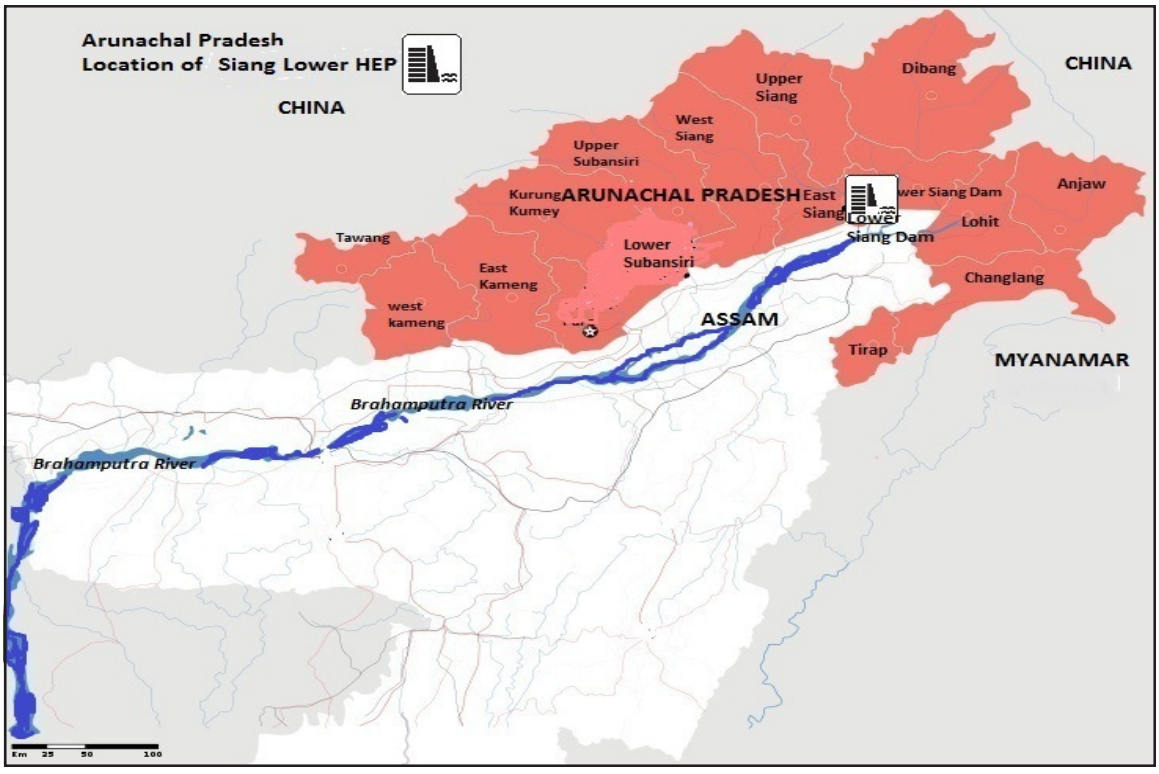
Chapter IV : Lower Siang Hydroelectric Project

The 2,700 MW Lower Siang Hydroelectric Project (LSHEP) is on Siang River, which originates from Chema Yungdung glacier near Kubi at 5150 m in Tibet. It is popularly known in Tibet as Tsangpo and flows from west to east and then changes its course, and takes a turn in the south-westerly direction when it enters India near Namcha Barwa hill range in Upper Siang district of Arunachal Pradesh. Siang River traverses a distance of 1625 km in Tibet. Here it is known as Siang River passing through districts of Upper Siang and East Siang of Arunachal Pradesh. When it enters the district of Pasighat in Arunachal Pradesh it is also called Dihang where it splits into three channels. At Kobo, west of Sadiya and 52 km south of Passighat two other rivers, Dibang and Lohit join it and from here on acquires the name Brahmaputra.

The Project

The Lower Siang Dam is situated about 1.5 km downstream of the Yamney river with Siang on its left bank and about 4 km upstream towards north from Bodak village, which is 22 km upstream from the Pasighat town where the river Siang emerges in the plains. The proposed project involves a 111 m high (above deepest foundation level) concrete dam with 9 units (300 MW each) surface power house located at the foot of the dam having a total installed capacity of 2,700 MW.

As per the EIA report, the project was



conceptualised to curb the flood problem in the region caused by major rivers such as Siang, Lohit, Subansiri and Kameng, which severely affected life and property of the surrounding areas. In view of this a high level committee, Rashtriya Barh Ayog and Regional Task Force for Flood Management recommended the construction of dams in the upper reaches of Arunachal Pradesh. In 1981, the Brahmaputra Board was entrusted with the task of carrying out a survey and investigating the feasibility of flood control along with harnessing other benefits such as irrigation, hydro power etc. by utilising the water resources of the Brahmaputra valley. The board recommended two large projects, one in the Subansiri river basin and the second in the Siang river basin. For Siang River, the Brahmaputra Board had initially prepared the Detail Project Report (DPR) for a dam of 20,000 MW near Rottung village, about 54 km upstream of Pasighat. This was not accepted by the Arunachal Pradesh government on account of large submergence of its land and consequent displacement of its inhabitants. In 1998, a joint field visit was carried out by Central Water Commission (CWC), Geological Survey of India (GSI) and the Brahmaputra Board. Consequently, three schemes were proposed for the Siang river basin. They were:

1. 11000 MW Siang Upper project, located at Pugging, with a height of 257m
2. 700 MW Siang Middle project, located at Mega, with a height of 154m
3. 1700 MW Siang Lower Project, located at Rottung with a height of 65m

Initially all these projects were taken over by the NHPC which carried out another survey and investigation for a number of projects in the Siang basin such as Upper Siang HE project, Lower Siang HE project, Siyom HE project, Naying HE project, Tato-II and Hirong HE Project. The NHPC also conducted studies for the selection of more suitable sites which would give higher installed capacity with the same height as proposed in earlier studies. Accordingly for the 1700 MW Siang Lower Project, the present site, located 16 km downstream of the Rottung village was found more suitable. The NHPC also proposed to increase the installed capacity of this project further to 2,700 MW hydro power project. Later the Arunachal government transferred this construction contract to the private developer M/s Jaiprakash Associates Ltd. vide Memorandum of Agreement dated 22.02.2006 on BOOT basis ('Build, Own, Operate and Transfer' basis) for forty years after its commissioning. Later Jaiprakash Associated created a subsidiary company—Jaypee Arunachal Power Ltd. (JAPL), for the execution of this project and prepared the final DPR.

The Environmental Impact Assessment of this project was prepared and presented by the Centre for Inter-Disciplinary Studies of Mountain & Hill Environment (CISHME) located at the University of Delhi, as per the Terms of Reference of the MoEF. CISHME identified the likely impact and formulated the Environmental Management Plan to avoid or minimize and mitigate the negative impact.

Protest against Lower Siang Dam

The CDRO team came to know about the violent protest against the public hearing on Lower Siang Dam on 17 April 2012 at Jeying in the Upper Siang district of Arunachal Pradesh. In order to assess the situation in Arunachal Pradesh, the team visited Pasighat and interacted with civil society members who were at the forefront of this movement. Several Arunachal Pradesh based civil society groups such as Forum for Sian Dialogue (FSD), Siang People's Forum, Adi Students Union (AdiSU) etc. were against any dam on the Siang River which is considered sacred by the Adi and Galo communities who form a majority in the districts of East Siang, West Siang and Lower Siang.

The opposition to damming the mighty Siang

River by the Adi and Galo community has a long history—since the beginning of the proposal way back in 1976. For the Adi and Galo community, the submergence of homestead and agriculture land, abundant forest product and resources, rich flora and fauna and also extinction of social culture are major concerns which even the EIA prepared for this dam speaks of. For the Adi and Galo community the river has a deep rooted social and cultural sentiment ingrained in their blood. 'Siang is the soul of our cultural heritage' was the popular sentiment repeated by the members of the Adi community during our interaction with them. Secondly, most of the members of the Adi community the team had interacted with considered the projects to be unsustainable and environmentally un-friendly.

Apart from their sentiment associated with the Siang river the team was also told about their opposition to the Lower Siang Dam based on their apprehensions which have also been listed in the EIA prepared by International Consultants in Water Resources, Power and Infrastructure Development (WAPCOS) (See box).

International Consultants in Water Resources, Power And Infrastructure Development report

1. High Sedimentation: The river Siang carries high sediment loads with a highly probable maximum flood (PMF) value at the dam site. This would lead to the accumulation of sediments at the reservoir.

2. Soil at the dam, power house and dumping site is prone to moderate and sever erosion hazard.

3. Active Seismic Zone: The Himalayan range in Arunachal Pradesh is much different and unique than the other parts of Himalayas. Situated at the junction of three plates, viz, Indian, Indo-Burmese and Eurasian, the region of Arunachal Pradesh is continuously under stress and undergoing crustal adjustments. Since the tectonic association in this region is one of the most active seismic zones of the world, it is prone to experience numerous earthquakes since time immemorial. In the past it has also experienced an earthquake having a magnitude as large as 7 on Richter scale as per published reports. The epicentre of these earthquakes is located in and around the project site.

4. Inadequate data: The EIA has been prepared ignoring the latest data and grossly underplaying the project affected area. The total area of submergence is 77.5 km along the river Siang and 28.5 km along river Siyom. However, EIA has taken the assessment of the villages located only in the influence area falling in the radius of mere 10 km.

5. Aquatic and people's life: The project will cause adverse impact on aquatic life. River Siang is rich in diverse fish and fauna. At the dam site EIA found 21 species of fish. Most of the tribal people's economy, on either side of the river Siang, depends on organised fishing. The tribal people have formed their own fishermen societies, locally called 'Ayung'. The contribution of the fishing contractors selected by these Ayungs is used for the developmental work of the region. All these will be suspended and once the river is dammed.

6. Life and Livelihood: Most significant is the social, economic and cultural impact which the dam is going to cause on the life and livelihood of the tribal communities. Even the land is owned by a community and not the individual. There is a full possibility that the community land would be acquired by the project authorities. EIA itself points out that the livelihood of these tribal people totally depends on the forest, river and land. The EIA talks about the dam as a project which will bring development in the form of communication, transport,

education, health facilities etc. Of course the moot point is whether education, health and other facilities in the tribal areas can only be made available when a public or a private corporate body, working for profit, constructs a mega project? In other words are we to believe that without mega projects none of these fundamental needs of people can be met?

7. Social tension: The project is likely to cause a major shift in the anthropology of the region as a result of the deleterious impact of the project on the environment on which the people depend for their very livelihood. The loss of forest, river and cultivable land would undermine tribal communities and their assemblies, locally known as Kebang. These are run on certain principles and are responsible for maintaining the socio-economic and cultural norms of their society. There is a fear that these projects which require skilled labourers, not locally available, will impact the demographic character of their area. The presence of people from outside Arunachal is seen as eroding the prevalent community system. Secondly, there will also be an impact on the wildlife due to construction activities like drilling, blasting and movement of vehicles and humans in the area.

The history of protest against damming the Siang River goes back to 1980–81 as soon as a big dam was proposed on the river. It began as a campaign to educate people about the ill-effects of the dam on people, their lives and livelihood, culture and above all on River Siang and its ecosystem. The team was told that the government-initiated process was not shared or discussed with the local population who were going to be affected by this project. Later when the MoA with JAPL was signed for Lower Siang Dam in February 2006, the movement against the dam picked up steam. This went on till 2011 and various organisations such as Forum for Siang Dialogue (FSD), Siang People Forum etc. were formed for spreading awareness among the community members. Later the student body of the Adi Community AdiSU also got involved in the anti-dam movement. The turning point came when the traditional assemblies of the Adi tribe, Bogum Bokang Kebang (BBK) and Adi Bane Kebang (ABK), also got involved and the issue of the dam and its disadvantages was discussed among its members.

These assemblies or societies have a strong tradition of self-governing institutions. After 1978, when the electoral system was first introduced in the state, these assemblies began evolving into a new system. However, they still have considerable hold on social order and preserving their religious traditions in order to ensure collective economic and social activities and also delivering justice at the community level. In many instances these assemblies also select the candidates to be sent to legislative assemblies and Indian Parliament. BBK in its resolution adopted in the assembly, held on 26–28 Sep 2011, decided to oppose any interference with the natural flow of Siang river. The assembly also decided that no meeting demanding compensation for land on both banks of Siang river shall ever be convened or entertained in any of the affected villages of the Adi belt.

In 2010, Siang People Forum (SPF) and Forum for Siang Dialogue (FSD), on behalf of BBK, organised a survey in the villages of seven subdistricts of East, West and Upper Siang. Altogether 40 villages were covered under the survey where opinion was sought from each of the household. Most of the household had put their signature opposing damming the River Siang. For example in Pangin Circle, out of 337 households covered in six villages, 249 (74%) households had given their signature opposing dams on Siang River. A senior representative of the Siang People Forum, an 80 year old man fighting to save Siang River for the last three decades, had specially come to meet the CDRO team members to Pasighat. His only con-

cern was that his voice should reach other parts of India. He wanted to let us know they had been opposing the dam in order to save their sacred river to which they are connected emotionally. He showed us the copy of the memorandum which bore the signature of tribal people opposing dam. And it is not only one dam but the multiple dams which have been planned on River Siang.

Arunachal Pradesh State Pollution Control Board (APSCB) decided to hold a Public Hearing on 18, 19 and 20 October 2011, a mandatory requirement where EIA is presented by the company. BBK issued an appeal to the Governor for not constructing any dam on Siang River and therefore demanded cancellation of the proposed public hearing.

BBK memorandum

1. People of the region lack awareness on the nature of the proposed dam. No measures were taken to create such awareness in the villages likely to be affected by the dam.
2. The Prior Informed Consent (PIC), a mandatory requirement, was either not taken from the majority of people or stage managed to solicit the consent of the project affected people.
3. The EIA was based on wrong information and lacked comprehensive data. This was pointed out even by then Minister of Environment and Forest Jairam Ramesh, in September 2010. The revised EIA also lacked information on many of the parameters suggested earlier such as their reference to 'Three Monsoon Season', in the EIA report. The three is erroneous because there are but two monsoon seasons.
4. There is also lack of transparency in sharing the information with the public and authority. Even the EIA report was not shared with deputy commissioner of West Siang even after the declaration of public hearing.
5. EIA, including the revised one, carries incorrect information and derogatory remarks on the various social and religious customs practiced by the Adi community. For instance the EIA accuses the Adi community of practising polyandry. This shows that a very patchy work has been conducted for preparing the EIA. A case against the Jaypee Company and its consultant WAPCOS Limited is still pending in this regard.
6. Use of unscrupulous technique, such as fear psychosis, bribery and treachery, by the Jaypee Group in order to garner support for the project.

The continuous efforts of the civil society organisations led to the protest spread to the entire Siang Valley. Most of these organisations were of the firm opinion to boycott the farcical public hearing. During our interactions with the members of civil society organisations and student bodies, the majority were of the opinion that it is not the content or outcome of the public hearing which mattered most but the conduct of public hearing itself which was objectionable since in most cases the opinions and concerns of the affected people were either ignored or manipulated by the authorities.

The scheduled public hearing could not be conducted due to stiff resistance of the local people under the banner of the various organisations. In fact, it was repeatedly cancelled many times. On one occasion when APCB fixed the public hearing on 17, 18 and 20 April 2012, at Upper Siang, East Siang and West Siang respectively, many organisations such as Siang Peoples' Forum (SPF), Adi Students' Union (AdiSU), Lower Siang Dam Affected Land Owners' Union (LSD ALOU), East

Siang District Students' Union, Mebo Area Bachao Committee (MABC) and Mebo Area Downstream Village Welfare Association came together and held a joint meeting at Pasighat where they questioned the legitimacy of such hearings. People who attended the meeting also showed their anguish on the government's move to deploy additional forces in the state to safeguard the interests of the power project developers in the state. The 'public hearing' was termed by Forum for Siang Dialogue (FSD) as 'police parading' whose main purpose is to create fear psychosis in the minds of the poor villagers. The move of the government to provide security and safety to power developers at a cost against the interest of the people of Arunachal Pradesh did not go well will these organisations and they gave a call to boycott all such public hearings.

On the morning of 17 April 2012 at 9.30 am, around 300 activists of various organisations started their protest against the public hearing at Jeying in Upper Siang district. The protest turned violent when the police personnel present at the site manhandled the protestors. The CDRO team was told that police beat up 2–3 students protesting the public hearing. The CDRO team also met the member of the All Yamne Doyen Student Union (AUSSU) who was allegedly put by the police in a van which further infuriated the protestors who set on fire a guest-house and vehicles belonging to the Jaypee Group, developers of the project. After this protest, all the three scheduled hearing were postponed by the local authorities in order to avoid the violent protests and damage to public properties by anti-dam activists. Meanwhile, the protest against such public hearings were intensified when hundreds of anti-dam activists from the Adi-Galo community took their traditional oath to protect their rights over Siang River and forests on its bank. They promised to make their protest more vigorous in coming days and threatened of a 'jail bharo' in the event of arrests.

Chapter 5: Debang and Demwe Lower Hydroelectric Project

Debang Multipurpose Project

The river Debang originates from the Tibet border at an altitude of more than 5000 m. The river emerges from the hills and enters a sloping plain area near Nizamghat in Arunachal Pradesh, from where the river flows for a distance of 50 km to meet the river Lohit. The 3,000 MW project to be built by NHPC on river Debang will have a height of around 288 m. The foundation of Debang Multipurpose Project was laid by Prime Minister Manmohan Singh in 2008, even before the EIA was presented to the authorities and the people of the area, therefore, bypassing all the norms. Even the public hearing, a mandatory provision for a dam, has been postponed at least 11 times under the pressure of people opposing the dam.

There are 16 other hydroelectric projects in Debang valley in the pipeline, that threaten the lives and livelihood of the people of the Idu Mishimi community residing in the area. The Idu Mishmi is a very small community with a population of only 13,000 as per the 2011 census. They fear that construction of these dams will lead to the influx of outsiders, which would change the demography and socio-economic profile of Debang valley endangering the rights of Idu Mishmi Community. This will also violate Article 27 of the UN Convention on Rights of Indigenous People, which India has ratified in 2007. [**Article 27 reads thus:** 'States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process.']

Demwe Lower Hydro-electric Project

This is another dam which falls in the foothills of Lohit basin and is proposed on the river Lohit, a tributary of mighty Brahmaputra in Lohit District of Arunachal Pradesh. The 1,750 MW project is being executed jointly by Athena Demwe Power Ltd, promoted by the India-based Athena Energy Ventures Pvt Ltd, and the Government of Arunachal Pradesh in Lohit district. It is to be built in an area of 1,590 hectares and involves felling of around 43,000 trees.This dam on river Lohit is expected to submerge at least 120 villages and create flood like situation in many of the downstream villages.

All Idu Mishmi Cultural and Literary Society and All Idu Mishmi Students' Union are spearheading a protest against 3000 MW Debang Multipurpose project for the last four years. In order to substantiate their claim they held numerous meetings and press conferences outlining the importance of Debang Valley which has the highest forest cover in Arunachal Pradesh besides two wildlife sanctuaries and is part of the Dihang-Debang Biosphere Reserve. Besides, Debang Valley is also considered a part of one of 25 biodiversity hotspots of the world nurturing rare and endangered flora and fauna. Even the expert members of National Board of Wildlife (NBWL) that assessed the impact of development projects on wildlife had raised concerns and recommended against the construction of Demwe Lower Hydro Electric Project.

Studies conducted by MoEF have revealed that

flow-fluctuations in rivers such as Lohit, Dibang, Siang and Subansiri will endanger and destroy the breeding grounds and habitats of critically endangered birds such as the Bengal Florican and the white-winged duck, as also other birds like the white-backed and red-headed vultures. They will also severely affect the foraging area of animals like of the Asian water-buffalo, the sloth bear, the slow loris etc., and particularly threaten the habitat of aquatic animals like the endangered Ganges river dolphin that live in these waters.

The primary way in which avifauna would be affected would be by the loss of their traditional habitat precipitated by the dam. The example of the impact of this loss on a critically endangered bird like the Bengal Florican, only 300 of which are left in India, will illustrate this. This bird requires a mosaic of grasslands, with short and long grasses. Grazing by wild ungulates and natural or controlled fire by the forest department are some of the ways by which this habitat is produced. The forest department sets fire to the grass in January–February to allow new grass, needed for the wild ungulates, to grow. Once the dam is made, the daily fluctuation of the water level in the Lohit river due to the Lower Demwe Dam will mean that the grass will never dry sufficiently, even through controlled fire, resulting in 'total habitat modification.'

Similarly, the studies on the fate of the Gangetic river dolphin were done most unscientific way while giving clearances for the project. In 2011, Arunachal Pradesh government conducted a study that concluded there were no river dolphins in the stretch of the Lohit river flowing through Arunachal Pradesh. Significantly the study was done for a brief period in the winter season (February) while the dolphins normally move through most of the tributaries of the Brahmaputra during the pre-monsoon, monsoon and post-monsoon seasons. The study, in order to be accurate, needed to have examined the river in different seasons before reaching a conclusion. Unfortunately such studies backed by the government become the authoritative arbiters in issuing environmental clearances from bodies like the National Board for Wildlife.

There are apprehensions that the project will have a drastic impact on certain geological zones where distinct eco-systems have evolved, such as the chapories (riverine islands) located downstream of the dams on the Lohit River. These occur in both Assam and Arunachal Pradesh. More than 140 species of birds have been listed in the book '**Important Bird Areas in India**', published in 2004 , which are going to be severely affected by the destruction of this eco system after the dams are built. The effect will be more in winters as the people's use of riverine tracts is adapted to the 'lean' but uniform flow of water in winter on any given day. The Subansiri river for instance has a winter flow of about 400 sq. metres per second (cumecs). After the 2000 MW Lower Subansiri project is commissioned, it will fluctuate daily from 6 cumecs for 20 hours or so (while water is stored behind the dam) and 2560 cumecs for around 4 hours when water is released for power generation during peak demand in evening. The Environmental Impact Assessment studies of the Demwe Lower HE Projects and the Subansiri Lower HE Project themselves show that these peak load releases amount to a 'winter flood' and crucially affect wildlife and people by producing harsh, very rapid and drastic environmental changes.

However, the Union Ministry of Environment went by the claims of the state government and refuted findings of the expert committee. Justifying the decision to overrule the recommendations, the ministry said, 'The spirit of the clearance system basically demands evaluation of trade-offs for balancing the developmental needs with environmental sustainability, examination of scope of mitigation and capacity of the ecosystems to withstand the impact.'

Chapter V : Conclusion

Based on the CDRO's investigations into the situation arising out of the unprecedented construction of a large number of Mega Dams in the NE, the report would in its conclusion like to draw upon certain important aspects.

The subject of dams is projected as a technical one and it is often argued that the concerns expressed by people are based on lack of understanding. However, the people residing in such areas for centuries and their knowledge of the surroundings cannot be undermined and no big project that is likely to affect them can be taken up without engaging the local communities in the planning and execution of such projects. CDRO found that exactly the opposite has happened and the local people resent the fact that the project related information was not shared with them and the projects were imposed on them without even listening to them. CDRO found that even when public hearings were organised, those were a mere formality. For example, in Lower Subansiri Project the proceedings of the public hearing organised by the Assam Pollution Control Board on September 4, 2001 at Gerukamukh, were conducted in English and Hindi and no local language was used. Questions made by one of the local people present there, about seismicity and biodiversity studies were ignored. So were the observations about the manner in which the hearing was conducted. Signatures of attendance, were later projected as acceptance of the project. Public hearings were meant to provide a forum for people to vent their opinion, concerns and misgivings. What we see happening today is that these have become a mere formality to manufacture public consent. As a result in Lower Siang as well as in Demwe people resolutely boycotted such 'public' hearings because it was perceived as being means through which artificial consent for the project gets manufactured.

In all the three projects the EIAs suffer from inadequate and wrong data/information. Indeed the credibility of EIA has been marred by the fact that they have grossly underestimated the area which will be affected by the project. For instance in Lower Siang they claim that project will affect villages located within a radius of 10 kms, whereas it actually will affect villages within a radius of 78 kms. EIA has also been faulted for misrepresenting social and cultural practises of the indigenous communities both in upstream as well as downstream regions.

In the rare instance where due to popular pressure, an expert group was set up by the state government in Lower Subansiri Project in Assam the recommendations were rejected. The group had described the project to be 'unfeasible'. But, the NHPC rebutted its recommendations and made a laughable argument that Bhakhra Nangal Dam was also built in a seismic zone, so even the Lower Subansiri Project could be built. A factor as serious as seismicity was totally ignored, leading to Mega Dams coming up in high risk zones of NE. Fears are voiced by people who feel that if all the 186 dams over Brahmaputra and its tributaries are constructed, for which the MoUs and MoAs have already been signed, the entire Brahmaputra Valley, along with Barak, is threatened with destruction. The inevitability of sediments getting trapped in the reservoir; the requirement of de-silting of reservoir to avoid raising the river bed; sand being carried by water from reservoir causing flood, as against sediments carried by natural floods which

enrich the soil . . . are not figments of people's imagination. These fears need to be assuaged and not dismissed because mega dams not only carry the threat of robbing the soil of nutrients but fear of manmade dammed waters overflowing and flooding land downstream causing immense destruction, without even the benefit which natural floods carry, increases many fold. This is precisely what happened when a man-made flood occurred in Ranganadi.

Here we want to point out that even the CAG has drawn attention to serious procedural lapses by the NHPC. The CAG report [Capacity Expansion in Hydro Power Sector by CPSEs for the year ended March 2012; Report No 10 of 2012-13 (Performance Audit)] says, no special purpose vehicles were provided, by Ministry of Power, for survey, investigation and implementation of the Siang and Subansiri multipurpose projects in the Brahmaputra Basin in Arunchal Pradesh, despite specific directions from the Prime Minister's Office (PMO) in August 1999. Secondly, the NHPC as late as 2006, had not finalised norms and guidelines for survey and investigation. For instance, it did not even have norms laid down for the number of holes required to be drilled. This was the situation despite the policy on Hydro Power Development of GOI (1998) emphasising thorough survey and investigation of potential hydro sites on a scientific basis before preparations of DPRs. The NHPC and SJVNL encountered several 'geological surprises' (like variations in the rock classes during excavation) in the execution of projects causing an adverse cascading impact on the time and cost of these projects. Even after devising norms in January 2007, the NHPC expressed difficulty in following these norms on different grounds' (Para 4.1.1 and 4.1.2).

One of the issues not been adequately understood is the impact of such projects on bio-diversity. For instance Dibang Valley is one of 25 biodiversity hotspots of the world nurturing rare and endangered flora and fauna. Its harmful impact would have been felt in the grasslands of Dibru Saikhowa National Park and the *chapories* (riverine islands) of Lohit River. These also happen to be Important Bird Area (IBA) as per Birdlife International and are the remaining habitats of the critically endangered Bengal Florican. The project will also affect the Gangetic River Dolphin, Asiatic wild buffalo and hog deer present in Dibru-Saikhowa National Park. However, the Union Ministry of Environment went by the claims of the state government and refuted findings of the expert committee and issued clearance in February 2012.

There is no concrete cumulative impact study on the lives and livelihood of the people. As a result such is the demand across the entire NE for Cumulative Impact Assessment Study that during his visit to Assam, in April 2012, Prime Minister Manmohan Singh promised the people of NE that the concerns of the people will be taken in to account through a cumulative impact study of the dam projects and its impact. Nothing has been done so far on this matter and it appears as nothing more than a propaganda gimmick.

Let us also note that even the authorities and politicians also have raised questions about these projects. In 2005, for example the power secretary of Arunachal Pradesh Government in two letters dated 30 January and 16 March, pointed to 'serious procedural lapses', warned that dam construction 'may aggravate the prevailing boundary dispute between the people of Arunachal Pradesh and Assam . . .' He also drew attention to the fact that these dams were located in a 'very high damage risk zone' having suffered 87 major or minor quakes in 67 years 1929–93. Even the current Chief Minister of Assam, Tarun Gogoi, in 2008 had expressed strong opposition to the proposal of mega dams in Arunachal Pradesh. 'Big dams in Arunachal Pradesh will not solve our flood problems. In fact, they will do more harm than good. We will have to convince Arunachal Pradesh of this,' (*The Indian*

Express, 25 July 2008)

One would expect that, given that even officials shared some concerns over the dam construction, the state governments would heed the voices and address concerns raised by the anti-dam movement. Instead the state government, Assam in particular, has used repressive measures against the anti-dam movement, using the cover of banned Maoists/ULFA/HuJI to label protestors as 'terrorists', 'terrorist sympathisers' or working 'hand-in-glove' with these banned outfits and propagating that those protesting are anti-development and therefore anti-national. The arrest of human rights defender and mass leader Pallab Borbora on 2 June 2012 from Golaghat district on charges of being a link between Maoists and the anti-dam movement as well as others, is evidence of this paranoiac official mindset. Declaration of the area as 'disturbed' and existence of draconian laws like AFSPA, enables the authorities to outlaw all legitimate protests, making matters worse for people. The point to note is that when policy is formulated over the heads of the people and then pushed through with the aid and assistance of armed forces of the union, in the name of 'development', and also 'national security' and opponents demonised as being covertly working for banned outfits, shows that in 'disturbed' areas it is rather easy to damn an anti-dam movement.

As stated earlier the emphasis of these projects is power generation. In other words it is not as though these dams are meant for the people of NE. Power is a commodity to be sold to rest of India by private and public corporations which work for profit for themselves, exploiting resources of people in the NE and leaving them to deal with environmental and livelihood concerns of people affected by these projects. While India has an installed capacity of 1.74 lakh MW, there is a 30% loss and/or low capacity utilisation, which is about 52,000 MW. This is 10,000 MW short of the 63,000 MW amount sought to be generated through construction of new dams in NE. Point being that the panic being generated over power shortage does not necessarily explain how much of the shortfall can be made up through higher utilisation of capacity or lowering of losses say due to transmission etc. It also does not explain whether in urban metropolises upper and middle classes consume disproportionately more power than urban poor just as rural rich corner power vis-à-vis the rural poor? In other words a more equitable distribution of electricity and curtailment of excessive power by the rich and powerful might go some way in correcting the skewed consumption of electricity.

Hydropower generation cannot be separated from as an exercise in water privatisation, as a sort of enclosure of water commons. Water, a public resource, is being used to generate electricity. In case of a PSU undertaking the power project, the electricity is generated for selling power and augmenting state revenues. Hydropower is thus a source of 'economic prosperity' of the state, similar to the case of minerals in Orissa, Chhattisgarh and Jharkhand. If it is a private player operating the project, it is a case of public resources being used for private profits. Both cases are representative of what some scholars describe as 'accumulation by dispossession'.

Whether it is a private player or a PSU, electricity generation in the North-East is considered imperative for maintaining high GDP growth rates in our economy. It is this energy-intensive economic growth that is ultimately responsible for 'fuelling' the energy industry, whether it is thermal power plants, biofuels or hydroelectric projects. The Planning Commission's estimates for additional power requirements are mind-boggling (1,00,000 MW of additional power capacity required in just five years of the Twelfth Five Year Plan compared to the existing 1.73 lakh MW capacity in fifty years from all sources!). Until the time that high growth rates are considered desirable and sacrosanct, the drive for power generation will never end, from

whatever sources possible. This is driving the hydropower industry in North East too (and the individual states' competitive desire to generate revenues from natural resources in the post-reforms period). The violation of state's own laws and state repression of opposition are inevitable in such a scenario.

In Arunachal Pradesh particular local communities also fear that construction of dam will pose another threat; of demographic transformation of their region with influx of people from outside Arunachal Pradesh coming in as skilled workforce along with their families. The combined weight of large scale deployment of armed forces of the union and influx of people fills them with fear of becoming nobodies in their own land and forest.

CDRO is aware that EIA arouses mixed feeling among people concerned because the predictive nature of such an exercise raises issues of accuracy and completeness of information available. For instance devaluing the seismic nature of the area where dams are coming up is one area of concern. The other is estimating social impact of the project as happened with Lower Siang project which limited the area of impact to a radius of barely 10 sq km. One of the reasons for this is that EIA is funded by the project developer, thus technical agencies which carry out EIA have a propensity to underestimate adverse environmental impact and tend to 'highlight' environmental viability of projects. The experience of the National Environmental Engineering Institute (NEERI) and the Centre for Interdisciplinary Studies of Mountain and Hill Environments of Delhi University tend to strengthen this fact. In other words CDRO believes there is a need for an independent agency that evaluates EIA and Cumulative Impact Assessment (CIA). While this may be opposed on ground of delaying projects and contributing to cost overruns of the project, it is better to be safe rather than sorry considering the uncertainty of knowing sufficiently the exact impact of projects on the ecosystems. In other words the application of precautionary principle is necessary.

In other words, CDRO is convinced that the demand to suspend all construction activities linked to dams in Arunachal Pradesh, Assam and Manipur is justified. And until a CIA study of all work connected with dams is undertaken, it has been publicly debated and discussed, and concerns and apprehensions of people have been satisfied, all construction work should remain suspended.

Annex 1: Basin-wise list of major HEP projects for which MoU/MoA have been signed						
	HEP	Developer	Capacity (MW)	Basin	River	District
1	Dibang Multipurpose	M/S THE NHPC Ltd.	3000.00	Debang	Debang	Debang Valley
2	Sissiri	M/S Soma EnterprisesLtd.	222.00	Dibang	Sissir	Dibang Valley
3	Emra -I	M/s Athena Energy Venture Pvt. Ltd.	275.00	Dibang	Emra	Dibang Valley
4	Emra - II	M/s Athena Energy Venture Pvt. Ltd.	390.00	Dibang	Emra	Dibang Valley
5	Ithun - I	M/S maytus - LVK Consortium Hyderabad	25.00	Dibang	Ithun	Lower Dibang Valley
6	Ithun - II	M/S maytus - LVK Consortium Hyderabad	20.00	Dibang	Ithun	Lower Dibang Valley
7	Ithipani	M/S maytus - LVK Consortium Hyderabad	20.00	Dibang	Ithun	Lower Dibang Valley
8	Attunli	M/S Jindal Power Ltd.	500.00	Dibang	Dibang	Dibang Valley
9	Etalin	Jindal Steel & Power Ltd. (JV with HPDCAPL)	4000.00	Dibang	Dibang/ Tangon	Dibang Valley
10	Mihumdon	M/S Reliance Power Ltd.	400.00	Dibang	Dri	Dibang Valley
11	Amulin	M/S Reliance Power Ltd.	420.00	Dibang	Mathun	Dibang Valley
12	Emini	M/S Reliance Power Ltd.	500.00	Dibang	Mathun	Dibang Valley
	TOTAL OF DIBANG BASIN		**9772.00**			
1	Turu	M/S ECI Engineering & Construction Company Ltd.	90.00	Dikrong	Pare	Papumpare
2	Dardu	M/s KVK Energy & Indfrastructure Pvt. Ltd	60.00	Dikrong	Pare	Papumpare
3	Pare	M/s KVK Energy & Indfrastructure Pvt. Ltd	65.00	Dikrong	Pare	Papumpare
4	Papumpam	M/S Meena Entrade and Engineering Pvt Ltd	25.00	Dikrong	Papumpare	Papumpare
5	Papum	M/S Patel Tours and Travels Pvt. Ltd.	15.00	Dikrong	Papum	Papumpare
6	Poma	M/S Patel Tours and Travels Pvt. Ltd.	12.00	Dikrong	Poma	Papumpare
7	Adum (Upper) Panyor	M/S BSS Arunachal Energy Development Pvt. Ltd.	25.00	Dikrong	Panyor	Lower Subansiri
8	Panyor Lepa Middle	M/S JMD Poer Solutions Pvt. Ltd.	21.00	Dikrong	Panyor	Papumpare
9	Senkhi	M/S T.K. Engineering Consortium Ovt Ltd.	2.00	Dikrong	Senkhi	Papumpare
	TOTAL OF DIBANG BASIN		**315.00**			
1	Kameng	M/S NEEPCO LTD.	600.00	Kameng	Kameng	West Kameng
2	Kameng I	M/S NEEPCO LTD.	1120.00	Kameng	Kameng	East Kameng
3	Kameng II	M/S Mountain Fall India Pvt. Ltd.	600.00	Kameng	Kameng	East Kameng
4	Talong	M/S GMR Energy Limited	225.00	Kameng	Kameng	East Kameng
5	Dibbin	M/s KSK Energy Ventures Ltd	120.00	Kameng	Kameng	West Kameng
6	Kameng Dam	M/s KSK Energy Ventures Ltd	600.00	Kameng	Kameng	West Kameng
7	Saskangrong	M/S Patel Engineering Ltd.	7.00	Kameng	Saskangrong	West Kameng
8	Gongri	M/S Patel Engineering Ltd.	90.00	Kameng	Gongri	West Kameng
9	Khuitam	M/S Adhishankar Power Pvt. Ltd	66.00	Kameng	Digen	West Kameng
10	Dinen	M/s KSK Energy Ventures Ltd	10.00	Kameng	Dinen Bru	West Kameng
11	Dikhri	M/s KSK Energy Ventures Ltd	15.00	Kameng	Dikhri Bru	West Kameng
12	Dimijin	M/s KSK Energy Ventures Ltd	20.00	Kameng	Bichom	West Kameng
13	Nazong	M/s KSK Energy Ventures Ltd	60.00	Kameng	Bichom	West Kameng
14	Dinchang	M/s KSK Energy Ventures Ltd	90.00	Kameng	Digen	West Kameng
15	Utung	M/s KSK Energy Ventures Ltd	100.00	Kameng	Bichom	West Kameng
16	Nafra	M/S Sew Energy Limited	96.00	Kameng	Bichom	West Kameng
17	Tenga	M/S ECI Engineering & Construction Company Ltd.	12.00	Kameng	Tenga	West Kameng
18	Tarang Warang	M/s India Bulls Real Estate Ltd	30.00	Kameng	Pacha	East Kameng
19	Pichang	M/s India Bulls Real Estate Ltd	31.00	Kameng	Kaya	East Kameng
20	Sepla	M/s India Bulls Real Estate Ltd	46.00	Kameng	Pacha	East Kameng
21	Phanchung	M/s India Bulls Real Estate Ltd	60.00	Kameng	pachi	East Kameng
22	Jameri	M/s KSK Energy Ventures Ltd	50.00	Kameng	Tenga	West Siang

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	HEP	Developer	Capacity (MW)	Basin	River	District
23	Pakke Bung - II	M/S Energy Development Co. Ltd.	15.00	Kameng	Pakke Bung	East Kameng
24	Pakke Bung - I	M/S Energy Development Co. Ltd.	40.00	Kameng	Pakke Bung	East Kameng
25	Mariginla	M/S Energy Development Co. Ltd.	60.00	Kameng	Kameng	East Kameng
26	Pachuk - II	M/S Energy Development Co. Ltd.	60.00	Kameng	Pachuk	East Kameng
27	Pachuk - I	M/S Energy Development Co. Ltd.	84.00	Kameng	Pachuk	East Kameng
28	Upper Ngorgum	M/S Satyam (North East) Hydro Power Ltd.	9.00	Kameng	Ngorgum	West Kameng
29	Dengzi	M/S Satyam (North East) Hydro Power Ltd.	18.00	Kameng	Ngorgum	West Kameng
30	Lower Ngorgun	M/S Satyam (North East) Hydro Power Ltd.	18.00	Kameng	Ngorgum	West Kameng
31	Rebby	M/S Coastal Projects Pvt Ltd.	31.00	Kameng	Para	East Kameng
32	Lachung	M/S Coastal Projects Pvt Ltd.	41.00	Kameng	Pachi	East Kameng
33	Para	M/S Coastal Projects Pvt Ltd.	55.00	Kameng	Para	East Kameng
34	Badao	M/S Coastal Projects Pvt Ltd.	70.00	Kameng	Kameng	East Kameng
35	Papu Valley	M/S Vensor Constuction Company Ltd.	35.00	Kameng	Papu	East Kameng
36	Papu	M/s India Bulls Real Estate Ltd	90.00	Kameng	Papu	East Kameng
37	Ankaling	M/s Devi Energies Pvt. Ltd.	8.50	Kameng	Nargum	West Kameng
38	Pacha	M/S SMJ Construction Pvt Ltd	10.00	Kameng	Pacha	East Kameng
39	Pakke Bung - III	M/S Boom Systems Pvt. Ltd.	24.00	Kameng	Pakke Bung	East Kameng
40	Pakke Bung - IV	M/S Boom Systems Pvt. Ltd.	15.00	Kameng	Pakke Bung	East Kameng
41	Phudung	M/S Patel Engineering Ltd.	13.00	Kameng	Kharclem	West Kameng
42	Pachuk - II Lower	M/S Energy Development Co. Ltd.	45.00	Kameng	Pachuk	East Kameng
43	Marjinla Lower	M/S Energy Development Co. Ltd.	48.00	Kameng	Kameng	East Kameng
44	Meyong	M/S Patel Engineering Ltd.	38.00	Kameng	Tim Kong	West Kameng
45	Digin	M/S Patel Engineering Ltd.	46.00	Kameng	Sangti	West Kameng
46	Dikshi	M/s Devi Energies Pvt. Ltd.	24.00	Kameng	Phudung	West kameng
	TOTAL OF KAMENG BASIN		**4945.00**			
1	Hutong	M/S Mountain Fall India Pvt. Ltd.	1250.00	Lohit	Lohit	Anjaw
2	Kalai I	M/S Mountain Fall India Pvt. Ltd.	1450.00	Lohit	Lohit	Anjaw
3	Demwe Lower	M/s Athena Energy Venture Pvt. Ltd.	1750.00	Lohit	Lohit	Lohit
4	Demwe Upper	M/s Athena Energy Venture Pvt. Ltd.	1250.00	Lohit	Lohit	Lohit
5	Kamlang	M/s Sai Krishnodya Industries (P) Ltd.	21.00	Lohit	Kamlang	Lohit
6	Raigam	M/s Sai Krishnodya Industries (P) Ltd.	96.00	Lohit	Dalai	Anjaw
7	Tidding - I	M/s Sai Krishnodya Industries (P) Ltd.	98.00	Lohit	Tidding	Anjaw
8	Gimliang	M/s Sai Krishnodya Industries (P) Ltd.	31.00	Lohit	Gimliang	Anjaw
9	Tidding - II	M/s Sai Krishnodya Industries (P) Ltd.	68.00	Lohit	Tidding	Anjaw
10	Kalai - II	M/S Reliance Power Ltd.	1200.00	Lohit	Lohit	Anjaw
	TOTAL OF LOHIT BASIN		**7214.00**			
1	Hirong	M/S Jayprakash Associate Ltd.	500.00	Siang	Siyom	West Siang
2	Tato II	M/S Reliance Power Ltd.	700.00	Siang	Siyom	West Siang
3	Naying	M/S D S Construction Power Ltd.	1000.00	Siang	Siyom	West Siang
4	Siyom	M/S Reliance Power Ltd.	1000.00	Siang	Siyom	West Siang
5	Siang Lower	M/S Jayprakash Associate Ltd.	2700.00	Siang	Siyom	East Siang
6	Hirit	M/S Velcan Energy Holding Ltd.	84.00	Siang	Hirik	West Siang
7	Pauk	M/S Velcan Energy Holding Ltd.	120.00	Siang	Siyom	West Siang
8	Tato - I	M/S Velcan Energy Holding Ltd.	170.00	Siang	Siyom	West Siang
9	Heo	M/S Velcan Energy Holding Ltd.	210.00	Siang	Siyom	West Siang
10	Kangtangshiri	M/s Rajratna Energy Holding Pvt Ltd	35.00	Siang	Yargyap chu	West Siang
11	Ropum	M/s Rajratna Energy Holding Pvt Ltd	40.00	Siang	Yargyap chu	West Siang
12	Barpur (Perna Shelpu)	M/s Rajratna Energy Holding Pvt Ltd	70.00	Siang	Yargyap chu	West Siang
13	Rego	M/s Tuff Energy Pvt Ltd.	70.00	Siang	Yargyap chu	West Siang

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	HEP	Developer	Capacity (MW)	Basin	River	District
14	Simang - II	M/S Adishankar Power Pvt. Ltd.	66.00	Siang	Simang	East Siang
15	Simang - I	M/S Adishankar Power Pvt. Ltd.	67.00	Siang	Simang	East Siang
16	Yamne Stage - I	M/S Abir Construction Pvt Ltd	60.00	Siang	Yamne	Upper Siang
17	Yamne Stage - II	M/S Abir Construction Pvt Ltd	60.00	Siang	Yamne	Upper Siang
18	Simen	M/S Satyam (North East) Hydro Power Ltd.	21.00	Siang	Simen	East Siang
19	Jarong	M/S CESC Ltd.	90.00	Siang	Siyom	West Siang
20	Lower Yamne Stage - I	M/s Yamne Power Pvt Ltd.	50.00	Siang	Yamne	Upper Siang
21	Lower Yamne Stage - II	M/s Yamne Power Pvt Ltd.	40.00	Siang	Yamne	Upper Siang
22	Tagurshit	M/S L & T Power Development Ltd.	60.00	Siang	Tagurshit	West Siang
23	Yemsing	M/s KVK Energy & Indfrastructure Pvt. Ltd	15.00	Siang	Yembung	East Siang
24	Sae Chu	M/S Chandalavada Construction (P) Ltd.	15.00	Siang	Sae Chu	West Siang
25	Sangoshi	M/S Chandalavada Construction (P) Ltd.	12.50	Siang	Sangoshi	West Siang
26	Tagurchit Stage II	M/S Chandalavada Construction (P) Ltd.	27.50	Siang	Tagurchit	West Siang
27	Pitgong	M/S Nano Excel Power Corporation.	14.00	Siang	Pitgong	West Siang
28	Sibu	Supereco India Pvt. Ltd	4.00	Siang	Sibu	West Siang
29	Kaying	M/S Sarda Eco Power Ltd.	14.00	Siang	Sibu	West Siang
30	Palsi	M/s Meenakshi Infrastructure Pvt. Ltd.	24.00	Siang	Palsi	Upper Siang
31	Pango	M/s Meenakshi Infrastructure Pvt. Ltd.	96.00	Siang	Sirapteng	Upper Siang
32	Sipit Upper	M/S Aswani Powe Projects	7.00	Siang	Sipit	Upper Iang
33	Nyiking	M/S Aswani Powe Projects	8.00	Siang	Nuyikgong	Upper Iang
34	Sittin Small	M/S Abhyudaya Power (P) Ltd.	24.00	Siang	Sittin	West Siang
35	Taiyong	M/S Abhyudaya Power (P) Ltd.	56.00	Siang	Siyom	West Siang
36	Hirit Krong	M/S Saisudhir Energy Ltd	30.00	Siang	Hirit Krong	West Siang
37	Siri Korong	M/S Saisudhir Energy Ltd	58.00	Siang	Siri Korong	West Siang
38	Soying Korong	M/S Saisudhir Energy Ltd	68.00	Siang	Soying Korong	West Siang
39	Jidu	M/s Meenakshi Infrastructure Pvt. Ltd.	92.00	Siang	Yangsang	Upper Siang
40	Sippi	M/s Meenakshi Infrastructure Pvt. Ltd.	96.00	siang	Ringong	Upper Siam
	TOTAL OF SIANG BASIN		**7874.00**			
1	Pare	M/S NEEPCO LTD.	110.00	Subansiri	Dikrong	Papumpare
2	Panyor	M/s Rajratna Energy Holding Pvt Ltd	80.00	Subansiri	Panyor	Lower Subansiri
3	Subansiri Upper	M/S KSK Energy Ventures Limited	2000.00	Subansiri	Subansiri	Upper Subansiri
4	Keyi	M/s DD Hydro Power Development Ovt. Ltd.	5.00	Subansiri	Polyo	Lower Subansiri
5	Palin	M/S T.T. Power & Project Developers Pvt. Ltd.	6.00	Subansiri	Pain	Kurung Kumey
6	Oju - I	M/S Navayuga Engineering Company Ltd.	700.00	Subansiri	Subansiri	Upper Subansiri
7	Naba	M/S Abir Infrastructure Pvt. Ltd.	1000.00	Subansiri	Subansiri	Upper Subansiri
8	Oju - II	M/S Navayuga Engineering Company Ltd.	1000.00	Subansiri	Subansiri	Upper Subansiri
9	Siken	M/S Gepong Enterprises	8.00	Subansiri	Siken	Upper Subansiri
10	Panyi	M/S Sowbhagya Energy Pvt. Ltd.	24.00	Subansiri	Panyi	Kurung Kumey
11	Nalo	M/S Coastal Infrastructure Pvt. Ltd.	360.00	Subansiri	Subansiri	Upper Subansiri
12	Pein	M/S Nedo Energy Ststem Pvt. Ltd.	10.00	Sunansiri	Pein	Lower Subansiri
13	Subansiri Middle	M/S Jindal Power Ltd.	1600.00	Sunansiri	Subansiri	Lower Subansiri
14	Subansiri Lower	M/S THE NHPC Ltd.	2000.00	Sunansiri	Subansiri	Lower Subansiri
	TOTAL OF SUBANSSIRI BASIN		**8903.00**			
1	Mago Chu	M/S Sew Energy Limited	96.00	Tawang	Mago Chu	Tawang
2	Nykcharongchu	M/S Sew Energy Limited	96.00	Tawang	Nykcharongchu	Tawang
3	Tsa Chu - I	M/S Energy Development Co. Ltd.	24.00	Tawang	Tsonachu	Tawang

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	HEP	Developer	Capacity (MW)	Basin	River	District
4	Tsa Chu - II	M/S Energy Development Co. Ltd.	90.00	Tawang	Tsonachu	Tawang
5	New Melling	M/S Sew Energy Limited	60.00	Tawang	Mago Chu	Tawang
6	Rho	M/S Sew Energy Limited	60.00	Tawang	Tawangchu	Tawang
7	Thingbu Chu	M/S Arunachal Pradesh Mega Power Pvt. Ltd.	60.00	Tawang	Thingbu Chu	Tawang
8	Paikangrong	M/S SMJ Construction Pvt Ltd	2.40	Tawang	Paikangrong	Tawang
9	Jaswantgarh Stage I	M/S SMJ Construction Pvt Ltd	4.50	Tawang	Nurang	Tawang
	TOTAL OF TAWANG BASIN		**492.90**			
1	Rima	M/s Patkai Energy Company Pvt. Ltd.	5.00	Tirap	Rima	Changlang
2	Tipang (Tirap)	M/S IL & FS Renewable Energy Ltd.	45.00	Tirap	Tirap	Changlang
2	Tirap Stage - II	M/S Tirap hydropower Company Pvt. Ltd.	10.00	TIrap	Tirap	Changlang
	TOTAL OF TIRAP BASIN		**60.00**			
1	Nyamjungchhu	M/S Bhilwara Energy Ltd.	780.00	Twang	Nyamjungchhu	Twang
2	Twang - I	M/S THE NHPC Ltd.	600.00	Twang	Tawangchu	Tawang
3	Twang - II	M/S THE NHPC Ltd.	800.00	Twang	Tawangchu	Tawang
4	Tsa Chu - I Lower	M/S Energy Development Co. Ltd.	50.00	Twang	Tsonachu	Tawang
	TOTAL OF TAWANG BASIN		**2230.00**			

Dams, Development and the North East:

A Report on the People's Resistance to Mega Dams in the Brahmaputra and Barak Valleys

Coordination of Democratic Rights Organisations (CDRO)

January 2013

'Though dams have made an important and significant contribution to human development, in too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms.'

World Commission on Dams, Dams and Development (2000)