SUSTAINABLE DEVELOPMENT FOR ARUNACHAL DAMS

1. The crux of the problem : 4 hr generation Dams

(i) Over 150 hydro projects are planned for 4 valley of Arunachal – Lohit, Dibang, Siang, Subansiri. These hydro projects are termed as Run of the River(RoR) schemes giving an impression that whatever is flowing in the river is flowing through turbines and / or over the dam without disturbing the natural flow of the river. **Nothing is further from the truth. The flow of the river is held up for 20 hours or so in the dam when the project is "offgrid", and is released in 4 hours or so through all the turbines at night.**

When water is held up completely or to a trickle for 20 hours or so in winter, the river downstream of the dam will dry up for 20 hours and a flood will then descend for 4 hours, and when this unnatural sequence continues day after day in winter months, the ecology of the river will be devastated alongwith the lifestyle and livelihood of the riparian people. It will also result in a high dam as a big reservoir is needed to hold the water for 20 hours, creating environmental issues, upstream of the dam and many 'risk factors' in the fragile sub Himalayan areas in zone V of the seismic scale.

We may term these dams as 4 hr generation Dams for maximum generation of power for maximization of profit by the Developer. It has no place for environment, ecology and the riparian people. It snatches away from people what they have – a flowing river in winter that gives them livelihood and a lifestyle.

(ii) **As per this present scheme of things there will be grave consequences**

a) in Arunachal :

In the **Siang Valley** of Arunachal, 44 hydro power projects are planned and cumulatively these projects will impact more than 500 km of river stretch of which 353 km will be converted to reservoirs in winter. For the main river Sinang, 208 km length of river Siang, out of 298 km, will be converted into 'reservoir' based on information as available in the Public Domain**. Arunachalis of the Siang Valley** will hold huge reservoirs of Siang Upper Stage II (3750MW), Siang Upper I (6000MW), literally **on their 'heads' in a highly fragile and seismic region**.

In **Dibang Valley**, 17 dam projects are planned. The Dibang Multipurpose Dam (DMD) is planned as the tallest gravity dam in a highly seismic zone (Zone V) and 4578 HA of forest land will be lost which includes about **3.5 lakh of trees**. **As no cumulative impact assessment of 17 Hydro Projects has been undertaken, it is not known, – what will be the total forest cover that will be destroyed and, what mindboggling numbers of trees that will be cut in the valley(3.5 lakh trees for one project only!). Effect of climate change for this scale of destruction of forest for 17 hydro projects of the Dibang valley alone taken cumulatively, is not studied. Nor is the impact on the Dihing-Dibang Biosphere Reserve.**

In the **Lohit Valley,** the Lohit Lower Dam (officially termed as Dimwe Lower to confuse people, as the dam is just over the Hindu pilgrimage site of Parashuram Kunda in river Lohit) **will destroy the Parashurma Kunda**, the Hindu Pilgrimage site, where thousands of devotees bathe, specially on the Makar Sankranti day of the year, as water in the dam just upstream of the Kund, will be held up for 20 hours to a trickle. Parashuram Kunda finds its place Centre's plan to link the Hindu Pilgrimage sites of the North East India as a pilgrimage / tourist circuit, but unless the format of the Lohit Lower / Dimwe Lower dam is

not changed, **the Kund will be dry for the pilgrims to bathe**. The same in the storey for the Subansiri valley.

In the **Subansiri Valley**, same is the storey, 20 hours of hold up of water in dams, big reservoirs etc.

b) in Assam :

Lohit, Dibang and Siang,– the constituent rivers of Brahmaputra, **meet within 25 – 30 km** in the rim of the Dibru Saikhowa National Park. When water of the Lohit, Dibang and Siang is held up in the lower dams for 20 hours or so and all the water is then released in 4 hours by running all the turbines, **Brahmaputra will dry up during the winter months for 20 hours or so near Dibru Saikhowa National Park and in the evening a Tsunami will descend when all the turbines will be switched on, sweeping away everything in its path. These 4 Hour model dams will destroy Brahmaputra and Assam valley environmentally, ecologically, socially and culturally. Dibru Saikhowa Biosphere Reserve, Majuli, Kaziranga will be devastated**. If the Hydro projects of Arunachal is completed in the **next decades** in the present format, **the above scenario will manifest by itself**, in two or three steps or suddenly, one day, **with irreversible consequences**. Also, impact of disasters in Arunachal valleys will be **cumulative for Assam**. A TRUELY FRIGHTENING ENVIRONMENTAL SCENARIO.

There is no political boundary that binds nature and to manmade natural consequences.

2. Grave risk to Arunachal valleys & cumulative risk impact in Assam :

In the report of Technical Expert Committee (TEC) of Thatte & Reddy to study the various aspects of Subansiri Lower Hydro Electric Project, the TEC opined that there is **'risk'** of **"panic release"** of the reservoir by the '**operator**' in monsoon, apprehending a probable maximum flood, **thereby, creating catastrophic consequences**. **TEC** also commented that, 'seismic science' based on which safety of the dam is established, **is not an exact science yet**. **These are ominous warnings by the apex Technical Expert Committee (TEC) as appointed by the Planning Commission for Subansiri Lower Hydro Electric Project. BUT THESE WARNINGS ARE TRUE FOR ALL THE DAMS AS PROPOSED IN ARUNACHAL**.

The proposed dams of Arunachal in the **present format** will destroy the Environment and Ecology of the **pristine Arunachal** and based on TEC's report on Subansiri, will **also pose as major safety hazards to the people of the valleys**. After what has happened in Uttarakhand where over 10,000 people lost their lives, in which, **HEPs had a "significant impact", the warning of the TEC can be brushed aside only at our own peril which will impact safety and security of the people in Arunachal and in the Brahmaputra valley of Assam.**

3. The Uttarakhand catastrophe of June 2013 : MoEF Affidavit

The 4 hours dams had a great devastating impact on the catastrophe of June 2013 of Uttarakhand and this has been admitted **now** by none other than the Ministry of Environment& Forest **(MoEF)** in an Affidavit in The Supreme Court in December 2014 (as a Respondent to IA No.6 of 2013, Civil Appeal No-6736 of 2013). **The vital aspects of cumulative impact study of a river basin, longitudinal connectivity and aviral dhara (continuous flow) have been articulated by MoEF now in its Affidavit to the Supreme Court** and **new norms for Environmental Clearances (EC) for Uttarakhand HEPs is in the pipeline** in fast track based on these vital aspects of environment and ecology**.**

This volte face by MoEF is forced on them because of the Hon'ble Prime Minister's laudable Ganga Rejuvenation Project and also because the fact that Hon'ble Supreme Court has scrapped 24 of the 39 HEPs of Uttarakhand.

For, MoEF to realize and admit their mistakes through the four hour generation dams of Uttarakhand, it took the lives of over 10,000 people and what they are advocating for Uttarakhand now – cumulative impact assessment, longitudinal connectivity, aviral dhara(continuous flow),must be true of all Northeast dams as well. The affidavit by MoEF is a 'Dossier' of what went wrong in Uttarakhand because of the 4 hours generation model Hydro Power Dams and we need to implement our conclusions now and not after thousands perish.

4. A SOLUTION – SUSTAINABLE DEVELOPMENT

- **Scrap the present proposed dams of Arunachal**
- **Undertake basin wise survey of Lohit, Dibang, Siang, Subansiri to construct sustainable dams.**
- **Plan and construct 24x7 true RoR dams generating power in a sustainable way.**

Our development model must be sustainable **as per Hon'ble Prime Minister's vision and a DEVELOPED INDIA needs power 24x7 not just for 4 hour. By converting the 4 hour generation DAMS TO TRUE Run of the River Dams where water flows naturally from the dam, generating sustainable power 24x7**, the ecology of the rivers and livelihood of the riparian people will not be destroyed. The height of the dams will be reduced greatly. Reservoir will become smaller into pondages. Cost of the projects will come down drastically. There will be no scope of panic release of the reservoir in monsoon, as there will be no sluice gates as the river will flows naturally downstream. The cost and gestation period of the projects will be reduced. Instead of one, say, 3000 MW dam, the

same power can be generated by 3 sustainable dams close to each other. **People will welcome such dams**.

The Chinese Dams

The Chinese are planning to generate 2030 MW **through 4 dams in Yarlung Tsangpo(Brahmaputra) in Tibet**, - Zangmu 510 MW, Dagu 640 MW, Jiexu 560 MW, Jiacha 320 MW. These are true 24x7 RoR hydro projects. The 510 MW Zangmu is commissioned recently. Dagu and Jiexu are planned to be constructed within 18 km upstream of the Zangmu Dam. It is possible place three hydro projects in such a short distance only because these are true RoR projects with small pondages. In comparison, the 2000 MW Subansiri Hydro Project the reservoir is over 40 km long.

The Kashmir Dams

Because of Indus Water Treaty of 1960 India can only generate power **without interfering with the flow** from the rivers in western Kashmir near Pakistan. The following are some true RoR hydro projects in Western Kashmir.

(i) Baglihar Dam in Southern Doda Dist over river **Chenab** with an installed capacity **of 900 MW**.

(ii) Dul Hasti Hydro Electric Project over **Chenab**, in Kistwar District for **390 MW**

(iii) URI Hydro Electric Project on **Jhelum** in Baramula District for 480 MW

Hon'ble Prime Minister inaugurated the 2nd phase for 240 MW phase II of the project in July, 2014.

(iv) Salal Hydro Electric Power Station over **Chenab** in J.K. for **690 MW**

Subansiri Lower Hydro Electric Project:

Subansiri Lower Hydro Electric Project (SLHEP) must be converted into a 24x7 true RoR project, by utilizing the Power House and the Intake to Power House **which are already constructed**. This is eminently feasible because the level of construction of the dam is still at a low level – 70 m of the dam is yet to be constructed. A

suggested alternative is enclosed. This will resolve the present impasse our construction of the dam.

5. PEOPLE'S PROTEST – Inevitable if proposed dams of Arunachal are not scrapped to be replaced by sustainable smaller dams.

When the 408 MW Ranganadi Hydro Electric Project of NEEPCO in a sub basin of Subansiri itself was under construction there was no public protest for construction of the dam. People welcomed the project. Only after commissioning of the project in 2002, when people witnessed the consequences of the project, – the river turned into a sandy desert in the winter, and devastating floods swept the area in monsoon due to sudden release of the sluice gates, did the people realize how these dams affected the riparian people.

Opposition to Subansiri Dam was triggered by the realty check of Ranganadi Hydro Electric Project when people witnessed firsthand what happens to them from these hydro power dams. (In Ranganadi the tailrace water was even diverted to a separate basin)!

People's protest over the dams of Arunachal in the present format is inevitable. Subansiri issue is a major environmental issue but its **effect is confined to only 120 Km of the basin**. **The environmental issue of Brahmaputra due to the dams in Arunachal as per the 4 hr generation format, will affect the whole Brahmaputra river,** - from the confluence of **constituent rivers**, Lohit, Dibang, Siang in Dibru Saikhowa National Park in Upper Assam upto the Bangladesh and beyond.

People of Arunachal and Assam are gradually learning about the consequences of the 4 hr dams of Arunachal as proposed now. Major protests are inevitable unless these proposed dams of Arunachal are not scrapped, to be replaced by 24x7 sustainable dams. **It also will be a travesty of justice if the norms for**

Uttarakhand dams of Aviral Dhara, longitudinal connectivity etc. as being envisaged now, are not incorporated for Arunachal Dams of the North East.

6. MoEF need to shed past legacies :

MoEF need to come out of its destructive policies of the past, like environmental impact assessment for only 10 km downstream of a dam, non release of water for 20 hours from a dam, sanctioning Environmental Clearances (ECs) for projects that sends the river through pipes/ tunnels for kilometers, no cumulative impact assessment etc. for hydro projects which are legacies of the past Govts.

In Uttarakhand, the process of a new beginning is taking shape. The NDA Govt. needs to usher in a transparent environmental policy which balances environment, people and development in a sustainable way.

Our Hon'ble Prime Minister in an election meeting speech in Passighat, Arunachal Pradesh on 22nd Feb'14 advocated for smaller dams in Arunachal. The conversion of the proposed 4 hour generation dams of Arunachal to 24x7 true RoR dams, will make **the vision of our Prime Minister of sustainable development, a reality**.

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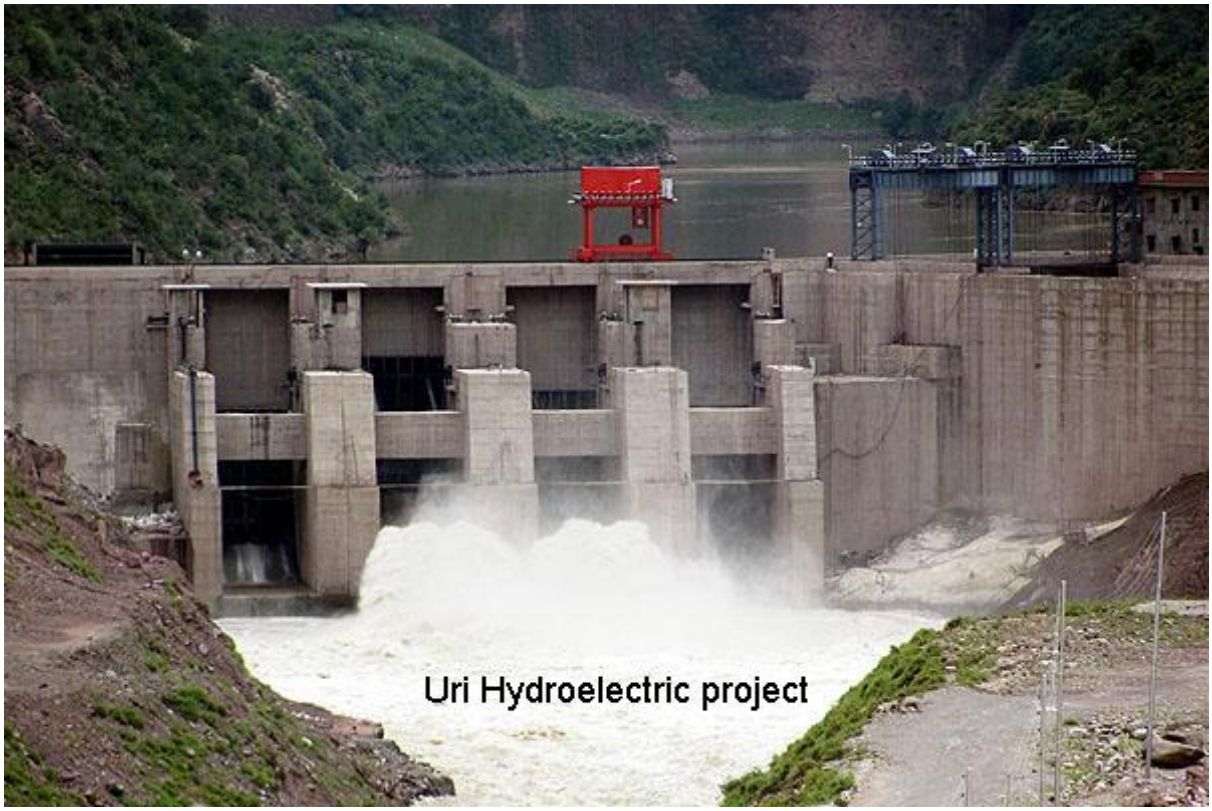
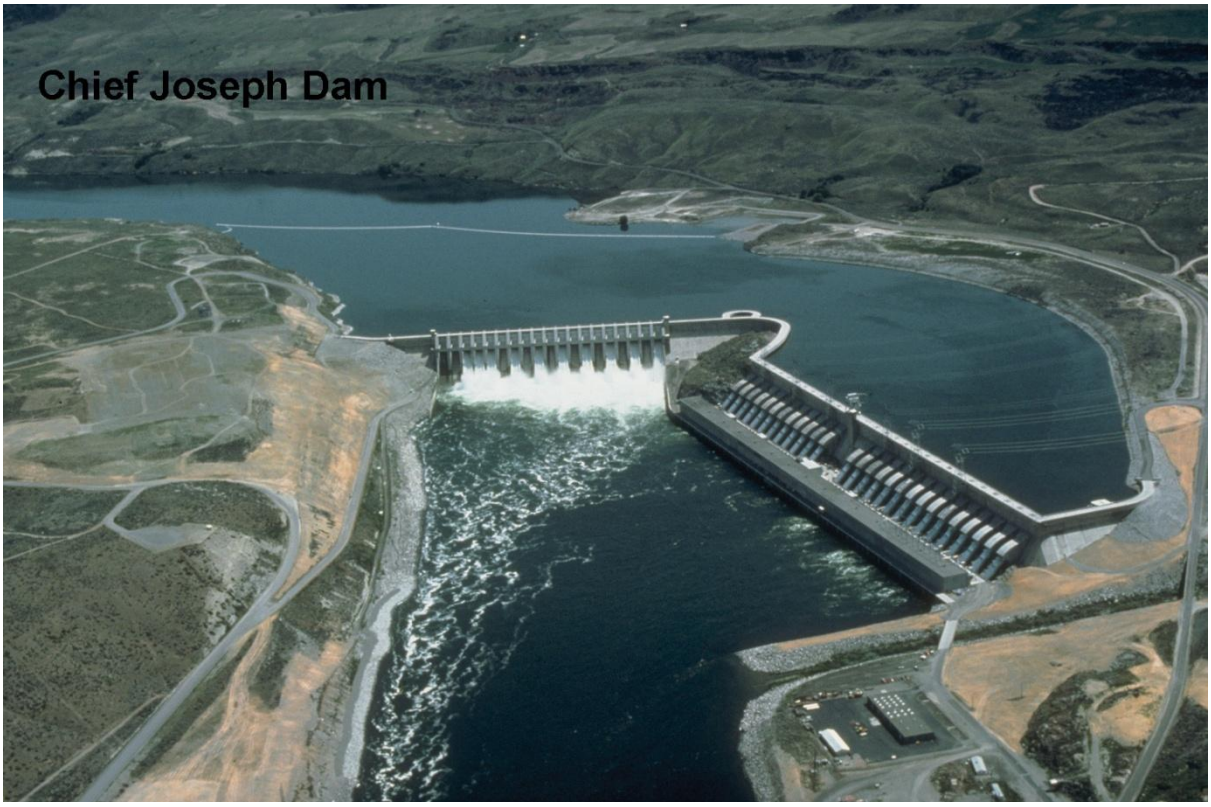
No Reservoir


Uri Hydroelectric project


Salal Hydro power plant



Chief Joseph Dam, USA, - a RoR Dam
Capacity : 2620 MW