



To,
The Member Secretary,
Meghalaya State Pollution Control Board,
Forest and Environment Department,
Government of Meghalaya,
Shillong.

Date: April 5, 2021

Subject: Public Notice No.MPCB/TB-360-MeECL/2021/2020-2021/5

NESFAS has been working with Umsawwar village for the last 4 years. They are one of the most progressive villages who have been at the forefront of many empowering initiatives. For example, in this village women play a very important role in the local dorbar which has allowed their induction as executive members in the village which makes one of the few villages which has done so. The village has also established its own Youth Parliament which has been very active in looking after the well being of the community. Taking all the stakeholders in the consideration the village has in fact resolved not to part with land for the construction of the Umngot Hydro Electric Project. Thus if the dam is built it will go against Articles 25, 26, 31 and 32 of the UN Declaration on the Rights of the Indigenous Peoples to which India has also signed. This violation will adversely impact the local community considering the stellar role it has played in acting as custodian to the local environment which they consider as Mei-Ramew and treat it to be sacred. This relationship has developed over many generations of interaction with the local environment leading to the formation of the many tangible and intangible assets crucial to the survival of the community. The dam will destroy these assets and snap the community's link with this sacred space. To make it worse, many of the benefits cited in the Draft Environmental Impact Assessment Report will actually not materialize. Instead it will bring about a negative impact on the local community's life.

The EIA report contends that the project will improve the agricultural outcome in the area, institute greater environmental conservations initiatives and bring benefit to the local economy and commerce contributing to development. These gains are very suspect considering the fact that they are based on wrong assumptions and stem from lack of local knowledge.

One of the potential benefits of the project argues The Environmental Impact Assessment is the control of shifting cultivation in the catchment which will bring about greater environmental benefits while steps are proposed for adoption of alternative farming systems which are presumably more sustainable. According to the report 1611 ha or 5.30% of the catchment is thought to be under this particular land use. This small figure is highly misleading because it presumably must have taken into consideration only those lands

which are currently under cultivation. Land under shifting cultivation however also includes areas which are under different stages of fallow. This is something the 2018 NITI Ayog 'Report of Working Group III Shifting Cultivation: Towards transformation Approach' has already clearly brought out in its assessment. The report has advocated it for categorising shifting cultivation "... as distinct land use, recognizing that it is both an agricultural and forest management practise conducted at the same plot of land but at sequentially separated times." The fallows under it should be categorised as 'regenerating fallows' which in time will become secondary forests and add to the forest cover of an area. By ignoring this facet of the EIA has underestimated the area under shifting cultivation subsequently downplaying its importance to the local community and the local ecology.

Some other false assumptions that the EIA clings to is the notion of shifting cultivation being harmful to the local environment. According to the report "... shifting cultivation has been creating serious impact on geographical and environmental conditions of the region ... The area under natural forest has declined; the fragmentation of the habitat, local disappearance of native species and invasion by exotic weeds and other plants are some of the other ecological consequences ... (as well as) loss of soil fertility and productivity ... large scale deforestation in the hills, siltation of reservoir, flooding of the plains, drying up of the natural stream and waterfalls and irreparable damages to region's unmatched flora and fauna" page 234. Such claims have been contested by many.

The 2013 paper 'The impacts of shifting cultivation on tropical forest soil: a review' by Alexandre Antunes Ribeiro Filho, Cristina Adams, Rui Sergio Sereni Murrieta reviewed the last 30 years of work done on the impact of shifting cultivation on tropical soils. The impact is studied through the conversion, cultivation and fallow phase on the soil properties viz., physical, chemical and biological. The studies reviewed revealed that under Shifting Cultivation, the soil properties of tropical forests vary from the moment an area is opened up for planting (conversion) to the end of a cultivation and fallow cycle. More than 90% of the studies conclude that the practise does not compromise soil quality and is a sustainable system, adapted to the ecological conditions of the tropical forests where this system is practised provided long fallow period is practised. The positive effects are associated with the fallow component because this phase mimics the ecological processes of the forest ecosystems. It does so because it uses the natural mechanisms of the ecological succession of the forests to re-establish the initial conditions of the soil before the productive activity. The conclusions regarding the impact of shifting cultivation on the local environment is therefore highly contentious.

The steps to control shifting cultivation are themselves highly problematic. There is suggestion of encouraging settled land use system through terracing and contour binding. This suggestion reveals that there is a lack of knowledge about the existing social conditions prevailing on the ground. Terracing is a highly labour intensive activity. The hilly regions of North East, including Meghalaya however face an acute shortage of labour. This is the reason why the British in the past had resorted to importing labour from outside the region. The repercussions of such an influx has been negative for the local population as is evidenced by the various conflicts taking all over the region. The risk of conflicts arising out of migration is something even the EIA report has admitted while discussing its own labour requirement. This it claims to solve by bringing labour from within the State itself which is highly unlikely given the labour shortage in the State. The same problem will be faced by

terracing. Shortage of labour is exactly why a farming system like shifting cultivation works which is an adaptation to not just the local ecology but also the existing demographic situation.

Terracing is not a viable option for another reason, i.e., existing landlessness. The 2011 Census has revealed that more than 70% of the population in Meghalaya is landless. In the project affected villages which includes Umsawwar, a significant number of households undertake farming by renting land from others in the community. The rents are nominal and plots are not difficult to acquire. However terracing which is a permanent improvement on land assumes that everyone has individual land title. This is farther from the truth and reveals the wrong assumptions and lack of knowledge about the local conditions under which such measures have been formulated.

The other measures to control shifting cultivation has been about developing horticulture and cash crop plantation for crops like rubber, coffee and oil palm plantation. The EIA report ignores that the local community do have their own cash crops but which are integrated with food crop production which ensures food security. The prominence given to cash crops however, will lead to an increase in food insecurity. The 2018 NITI Ayog report itself mentions that government schemes which prioritized a plantation crops has compromised food availability during the gestation periods (when crops are yet to be harvested) leading to food insecurity. The 2016 paper by Rabi Narayan Behera and colleagues 'From Jhum to broom: Agricultural land use change and food security implication on the Meghalaya Plateau, India' found that the diversion of land from food crops to cash crops risks adversely affecting household food insecurity because of increased exposure to price volatility, limited rural market infrastructure and reduce self sufficiency in food staples. The mention of oil palm is itself highly concerning. The environmental catastrophe that palm oil plantations effect is thoroughly documented, while similar devastation could result with the promotion of other cash crops as well. Food insecurity and environmental degradation will be big problem if the push for cash crops is intensified as a step to combat shifting cultivation.

One more measure suggested is mixed crop land use system. The EIA report discusses about the benefits of mixed cropping but conveniently forgets that Shifting Cultivation is the most diverse farming system. Dozens of food plants are grown in shifting cultivation plots while a diversity of wild food plants are also found from the fallows. A good document to learn about the various benefits of this particular farming system is the 2015 'Shifting Cultivation, Livelihood and Food Security: New and Old Challenges for Indigenous People of Asia' edited by Christian Erni. No other farming system proposed will be able to match the diversity of crops found in Shifting Cultivation. The suggestion therefore is redundant.

Since Shifting cultivation has been blamed for deforestation and according to the EIA report the total forest land required to be diverted for the project is 93.53 ha of which 12.91 is covered under Dense forest whereas 80.62 ha which is under open forest classification a compensatory afforestation scheme which is to be implemented through the State Forest Department. At the same time, it admits that the forests likely to come under submergence are community forest maintained by the district and village councils. However as there is no Reserved Forest in the project area it has been decided to carry out the afforestation program where private land shall be acquired around the RF area at Maweit in West Khasi Hills. Google Earth images make it abundantly clear that the area around Maweit already

have good vegetation cover. Therefore the exercise will be a futile one at best and eyewash at the worst.

The loss of the community forests, on the other hand, will be very devastating to the local community. The EIA report has admitted that the forest under submergence will be those that belong to the community as commons. The village of Umsawwar like others in the area have their own community forest. Such commons have always been a safety net for the poor. Like already mentioned, more than 2/3rd of the population in Meghalaya is landless which includes the project area. For this group the community forest is very crucial. The EIA report has admitted that forest in the area is a treasure house of valuable products such as timber, fuel wood, fodder, resin, tannin, gums, shellac, fibre, latex, essential oils, fats, edible fruits, honey and large quantity of medicinal plants (for more detail see pages 120 and 122 of the EIA report). The local indigenous community has depended on these items from time immemorial and they are especially very important for the poor (e.g., the landless) in the community who depend on them for income generation (15% to 40% of total income), self employment as well as auxiliary consumption. In times of stress, these community forests become safety nets for the poor. This has been brought out clearly by works such as the 2006 paper 'Forest as safety net: Listening to the voices of the poor from 15 forest villages in India' by N Mukherjee, M Jayaswal, S Roy and M Parihari, the 2012 thesis 'Common Property Resources as a safety net for the poor: A case study of West Bengal' by Dolly Menon submitted to the University of Delhi and the 2021 'The Economics of Biodiversity: The Dasgupta Review'. The loss of the forest will therefore have a devastating impact on the poor in the area. Rehabilitation and compensation may work may provide benefit to some but for the majority of the people this will be a devastating blow to their livelihood and income earning capacity.

The EIA report seems to be aware of it (it does mention loss of income and livelihood as an important negative impact of the project in page 187) and mentions that there will be employment benefits for the local community in terms of un-skilled/semi-skilled/skilled labour in construction activities and other labour-oriented works such as CAT Plan, Green Belt Development Plan. However the number of 1000 people given in the report is less than 1/3rd of the total working population - 3522 persons as given in page 154 of the EIA report. An important thing to remember is that the working population figure as given in the report is from the 2011 Census. More than a decade has passed which means the potential employment benefits would be even smaller. An overwhelming majority of the population will therefore lose their livelihood with nothing to fall back on. It is assumed that those who are left out will take advantage of the business opportunities created for service industries, e.g., building construction, repair and mechanic shops. Firstly, it will not be enough to absorb the remaining labour and secondly in most cases these will be captured by businesses coming from outside. The local population will thus be left more impoverished.

Migration to the urban areas for livelihood is a problem which has been mentioned by the EIA report and the avenues created by the project have been touted as a solution. However, as already discussed above, the few opportunities created by the project will not be sufficient to compensate for the loss of existing livelihoods. This will be exacerbated by the loss of the community forest those who are the poorest will be greatly hit. Finally, the breakdown of the social capital in the process of relocation will take away one of the last safety net the vulnerable population have. In such a scenario, migration will become

intensified rather than diminish. The claim that the project will improve the lifestyle and social status of the local community is, therefore, false.

Instead it will be more beneficial if sustainable and dignified livelihoods are built around the local natural resources. A very important resource in this case is the agrobiodiversity found in the area. The participatory mapping conducted under the project “No One Shall Be Left Behind Initiative: Biodiversity for Food, Nutrition, and Energy Security, Meghalaya and Nagaland” found that Umsawwar has the third highest among all the project villages in Meghalaya and Nagaland and highest in East Khasi Hills District. This diversity included both cultivated as well those collected from the forest. Animal (which includes, mammals, birds, amphibians, crustaceans, insects) were not included in the participatory mapping survey. But if they were to be included the number of agrobiodiversity, i.e., variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries, will easily cross 350-400. The Draft Environmental Impact Assessment Report listed the biodiversity (reptiles, mammals, avifauna, fishes and insects) but did not take into consideration the agrobiodiversity which as our study showed is very high. The data on crops given in the report derived from the Directorate of Agriculture does not show the true picture as it underestimates the real number by ignoring local landraces and food plants that are harvested from the forest. Therefore, the impact on it has not been properly appreciated. Much of this agrobiodiversity is NUS (Neglected and Underutilized Species) that have tremendous ecological, nutritional and economic benefit. Instead of creating new and limited economic opportunities developing initiatives based on the available agrobiodiversity is much more viable. A very important document in this regard to refer is the 2019 ‘Supporting Nutrition-Sensitive Agriculture through Neglected and Underutilized Species: Operational Framework’ by Stefano Padulosi, Phrang Roy and Francisco J. Rosado-May. It will build on existing strength of the local community which is their agrobiodiversity which will also ensure sustainability.

This sustainability is not just socio-economic but also environmental. This rich agrobiodiversity has been made possible by the efforts of indigenous farmers who have a deep knowledge of not just agriculture but also the ecology of the local knowledge. This is part of the indigenous knowledge system which has sustained the indigenous communities like the Khasi for generations and enabled them to prosper in this region for more than two thousand years. This knowledge system has been increasingly recognised as one of the solutions to the global ecological crises especially climate change. The diversity embedded in the indigenous food system practised by the community of Umsawwar is a valuable storehouse of species and varieties that will help the local communities to adapt to climate change. The fact that a great portion of the agrobiodiversity catalogued is from the forest also highlights the sustainable natural resource management which the community has been practising, another important climate change mitigation and adaptation strategy. The construction of the dam, on the other hand will contribute to climate change, something which the Draft Environmental Impact Assessment report itself admits: Reservoirs contribute to greenhouse gas emission ... the rotting organic matter releases large amounts of carbon into the atmosphere ... (*and*) the decaying plant mater ... (*on*) decomposition eventually releases dissolved methane” (P. 183). The project therefore has serious climate change concerns which will increase the difficulties of the local community in the region and elsewhere.

The recent Covid-19 pandemic has also shown that biodiversity conservation is of the paramount importance not because of the long term climate change consequences but also the spread of epidemics especially, zoonotic diseases which are meat derived from wild animals for human consumption which includes invertebrates, amphibians, insects, reptiles, birds and mammals. It is now commonly accepted that Covid-19 had its origin in bats and is linked to environmental degradation caused by human action, like the proposed submergence of forest for the dam. Apart from bats, a host of other wild animals are carrying diseases which have the potential to create the same pandemic situation like Covid-19. The EIA report mentions 28 mammals, 16 reptiles, 97 birds and dozens of butterfly and fish species. The report admits in page 184 that the threat of poaching will increase during the construction stage of the project. Loss of biodiversity is therefore imminent if the project goes ahead and with it the threat will rise exponentially. On the other hand, strengthening and supporting the local agrobiodiversity is the only solution to counter this threat ensuring that highly contagious zoonotic diseases do not emerge from the proposed project.

The impact of COVID-19 and other emerging infectious diseases is just a tip of the iceberg of the problems awaiting humankind if biodiversity conservation is compromised. A very good document to refer to is the 600 page review 'The Economics of Biodiversity: The Dasgupta Review' commissioned by the UK Treasury, the first time a national finance ministry has authorised a full assessment of the importance of nature, published on February 2021 on the accelerating decline of biodiversity, around 100 to 1000 times higher than the baseline extinction rates and its impact on the economy. The report admits that there will be "disturbance to the fauna of the study area ..." (Page 188). There "are species amongst the biotic communities, which ... for varied reasons related to feeding and reproductive characteristics cannot acclimatize to the changed environment, and may disappear ..." (Page 185). At another place the "intervention in the project area will impact butterflies and birds which are quite sensitive to noise and human presence. The traffic noise has detrimental effect on the survival rates and breeding success of such fauna which reside in the small habitats along road side communication using acoustic signals. Sometimes as a result of habitat loss and physical disturbance, the fauna shall move from the habitat along the road side" (Page 187). According to the Review the biodiversity found in Nature, just like produced capital, is an asset and it enables Nature to be productive, resilient and adaptable. Just as diversity within a portfolio of financial assets reduces risk and uncertainty, so diversity within a portfolio of natural assets increases Nature's resilience to shocks reducing the risks to Nature's services. What is most worrying is that once the 'tipping points' (point of irreversible damage) have been breached for ecosystems it is costly to bring it back to the original state. Low income countries like India and states like Meghalaya whose economies are more reliant than high income countries on Nature's goods and services from within their borders stand to lose the most. Ultimately when biodiversity suffers, as the EIA report brings out, humanity (in this case the local population) will suffer. The proposed project is thus a step in the wrong direction.

Building on the biodiversity and especially agrobiodiversity instead is the way forward. An important benefit on relying on the local agrobiodiversity (a subset of biodiversity), apart from sustainable livelihood and environment (discussed above), is in terms of nutrition. The NFHS-5 has revealed that Meghalaya has a lot to improve upon when it comes to malnutrition and especially stunting. More than 80% of the Indian population including

those in Meghalaya are also suffering from what is called “hidden hunger” or micronutrient deficiency. Many of the food plants that are found in Umsawwar are highly nutritious, rich in micronutrients. Among all the food plants available in the village maybe the most exceptional is *phankaro* which has a particular variety of great importance. This is the phankaro stem or orange flesh sweet potato, which is categorised under Vitamin A rich food plants. Foods which are highly rich in Vitamin A provide a boost to the immune system and helps prevent serious conditions like early onset of blindness. Since sweet potato is also part of the starchy staples (most important source of carbohydrate), in Africa the promotion of the cultivation of orange flesh sweet potato is a very important initiative in the fight against malnutrition. The same potential holds for Meghalaya as well.

Finally the agrobiodiversity that Umsawwar and the villages from the surrounding area have is part of the larger goods and services that nature provides and is the foundation of not just the local but the global economy. These include the provisioning services like food, water, timber, medicines (see Chapter 3: Description of baseline environment of EIA), cultural services for pleasure, emotional sustenance and recuperation (the affected village of Syntung is renowned as a major tourist attraction) and regulating services and maintenance services like genetic library, preserve and regenerate soil, control floods, filter pollutants, assimilate waste, pollinate hydrological cycle, regulating climate, among others (see Chapter 4: Identification, Prediction and Evaluation of Impacts of EIA). In their 1997 path breaking paper ‘The value of World Ecosystem Services and Natural Capital’, R. Costanza and colleagues estimated that the global flow of the biosphere’s services at the end of the 20th century was worth US\$16-54 trillion annual which was larger than the global GDP of the mid-1990’s. For more detail on the issue of the economics behind the goods and services provided by nature reference can be made to ‘The Economics of Biodiversity: The Dasgupta Review’. Considering the immense financial repercussions on the natural services due to the project it is surprising that no Environment Cost benefit analysis was performed (see Chapter 9: Environmental Cost Benefit Analysis of EIA). This is a serious gap and without it, it is difficult to estimate the true impact of the project on the people and the local environment.

NESFAS therefore wants to make the following suggestions:

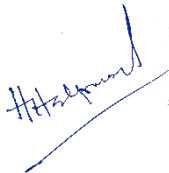
1. Instead for a high impact project like the proposed Umngot Hydro Electric Project, focus should instead be put into other sustainable solutions like solar energy. This is something even the Government of India is pushing for aggressively.
2. A greater appreciation of the existing local socio-economic and demographic conditions while formulating any interventions.
3. Interventions to improve the socio-economic condition of the community should focus on the local agrobiodiversity that is based on their indigenous knowledge.
4. Prevent the emergence of another pandemic, which has already devastated the world economy.
5. Appreciate the value of goods and services that the local environment provides for the local community and avoid interventions that threaten the long-term sustainability of the local community and ecology.
6. Empower communities like Umsawwar (one of the project affected village) who is a lighthouse when it comes to many sustainable practises that have important implications for social justice, climate change, and nutrition among others.

We would request the government of Meghalaya to reconsider the project in light of the unimaginable loss that it will inflict on the indigenous communities of Meghalaya and the solutions that it holds for a sustainable future.

With kind regards,

A handwritten signature in blue ink, appearing to be 'Phrang Roy', written in a cursive style.

(Phrang Roy)
Coordinator,
Indigenous Partnership for Agrobiodiversity and Food Sovereignty,
Rome, Italy.

A handwritten signature in blue ink, appearing to be 'H.H. Morhmen', written in a cursive style.

(H.H. Morhmen)
Chairperson, NESFAS.

A handwritten signature in blue ink, appearing to be 'Pius Rane', written in a cursive style.

(Pius Rane)
Executive Director, NESFAS.