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Biodiversity

NORTH EAST INDIA PERSPECTIVES

Proceedings of the Workshop on Peoples' Participation in
Biodiversity Conservation

4 – 6 March 1999

Organized by

North Eastern Biodiversity Research Cell,
North Eastern Hill University, Shillong 793 003

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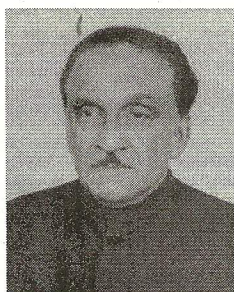
Synjuk Seng Samla Shnong, Shillong

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Raj Bhavan
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March 07, 1999

MESSAGE

It gives me great pleasure to learn that the North-Eastern Biodiversity Research Cell (NEHU) is publishing the proceedings of the recent workshop on "Peoples' Participation in Biodiversity Conservation" held in Shillong.

The north-eastern region is very rich in natural resources. It is globally recognized as a megabiodiversity area as it is one of the richest reservoirs of genetic diversity of plants, animals and microbes. The biodiversity of the region is under serious threat due to wanton felling of forest trees for shifting cultivation and to meet the demand for timber and fuel wood, urbanization, construction of roads, bridges and dams and other forms of exploitation of biological and mineral resources. This raises serious issues of sustainability of use, environmental degradation and stress on biological resources.

I think peoples' active participation can go a long way in conserving our rich biodiversity - for a better tomorrow. People must realise that life on earth will perish if they do not take pragmatic steps in order to save biodiversity.

I hope the efforts of the North-Eastern Biodiversity Research Cell (NEHU) and the Synjuk Seng Samla Shnong (SSSS) will be replicated by others to ensure peoples' involvement in the conservation movement.

A handwritten signature in dark ink, appearing to read "M.M. Jacob".

(M.M. Jacob)
Governor of Meghalaya.



ARUNACHAL UNIVERSITY

RONO HILLS, ITANAGAR-791 111

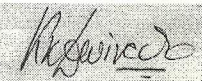
Arunachal Pradesh

Dr. K. K. DWIVEDI
VICE-CHANCELLOR

MESSAGE

I have noted with great satisfaction that the North-Eastern Biodiversity Research Cell at NEHU Shillong has very successfully organized a three day workshop on "Peoples participation in Biodiversity Conservation" in March this year. A large number of distinguished participants have gathered and exchanged their views on various aspects of biodiversity conservation and sustainable development in NE region. I have been informed that the deliberations in the workshop were extremely useful and the major contributions and findings are now being published in the form of a proceeding. I am very sure that such effort will bring out valuable reference material for scientists, environmentalists and planners.

I congratulate the scientists and organizers of NEBRC for bringing out the workshop's proceedings and hope that with their untiring efforts the objectives of the cell will be successfully achieved.


(K.K. DWIVEDI)

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Acknowledgements

I consider it my privilege to thank all those who were instrumental in making this workshop a fruitful one and furthermore, on behalf of the NEBRC, I take this opportunity to briefly outline the genesis of this project and give due acknowledgement to those who were instrumental in the establishment of the Cell.

This project funded by the North East Council, Planning Commission, New Delhi was a direct outcome of the Govt. of India recognition of the much-needed thrust on Biodiversity, in line with the global environment conservation scenario. The establishment of the North Eastern Biodiversity Research Cell is a consequence of their intent to promote sustainable development by way of encouraging more Research and Development centres, keeping in view biodiversity conservation concerns. Given the constraints and lack of infrastructure in research and development, the North East needs to be viewed through perspective. Developmental priorities per se should be categorised/identified in consonance with the available resources. Needless to say that with its rich Biodiversity resources, serious attention must be given towards in-depth study of these resources so that they may be used in a sustainable manner to explore, expand, tap and regulate these bio-resources in a sustainable manner.

In this context, the then Secretary of the North Eastern Council, Mr. H. A. D. Sawian, IAS, the present Secretary, Mr. T. Ringu, IAS, Mr. J. M. Syiem, IAS, Planning Adviser, Mr. G. Sen, Financial Adviser and their executives, deserve special mention for facilitating and making this project functional. The NEBRC would also like to particularly acknowledge Mr. Promode Kant, IFS, Chief Conservator of Forests, MoEF and Adviser (E & F) to the NEC, Mr. W. Suting, IFS, Conservator of Forests, MoEF and Dr. V. T. Darlong, Joint Director, MoEF who continually enrich us with their vast experience which will go a long way towards achieving our goals.

We extend our appreciation and gratefulness to the North Eastern Hill University, in particular, the Vice-chancellor, Prof. B. Pakem, for providing us the much-needed support, advice and the various facilities. The Head, Department of Chemistry, Prof. M. K. Mohanty and his colleagues, deserve special thanks for all the support and encouragement. It would be incomplete not to mention Prof. M. S. Swaminathan, Chairman, MSS Research Foundation, Chennai and Prof. T. N. Ananthkrishnan, Director, ERI, Chennai for their support and valuable suggestions in the formative stage of this Project.

To be able to achieve sustainable growth, it is imperative that people at the grassroots level be involved. It is with this view that the NEBRC in its maiden venture organized this workshop jointly with a premiere youth organization of the State. This joint undertaking was done with the view that an approach of this kind will provide a better interface between public and the intellectuals. In this context, I am indeed very grateful to the executive members of the Synjuk Seng Samla Shnong (SSSS), Shillong for their willingness to participate not only in this workshop but also in all our public activities related to Biodiversity awareness. In retrospect, it is due to their involvement that we have been able to reach out, and accepted by a larger grassroots audience within such a short time-span.

I take this opportunity to thank and express my gratitude to all our resource persons from the entire North Eastern States including the different Non-Government Organizations (NGOs), who, through their participation has provided us with a much more broader perspective as well as a more meaningful outlook towards biodiversity. Their contribution to this workshop by way of paper presentations, interactions and discussions will go a long way to provide a Regional focus on Biodiversity concerns.

I am indeed grateful to all the members of various committees, in particular Dr B. S. Khongwir, D.G. Nongkhlaw, C. Syngai, Gordon Tham, Linus Marwein, Larry Warjri, Khraw Kharlukhi, Paul Shanpru, Bull. N, Dr. M. B. syiem, Adamson Khonglam and Jemino Mawthoh, Chairman SSSS for their untiring support and effort throughout the entire workshop proceedings.

I thank the press and the media, in particular, Mr. Sanat Chakraborty and Ms. Linda Chhakchhuak for their enthusiastic participation besides the wide coverage throughout the duration of the Workshop. My appreciation for our own JRFs, Y. S. H. Yobin, I. Thamar, D. Marngar, B. Das, R. Lalfakzuala, Lalmangaihzuala, G. Syngai, R. Nongrum and R. Nongkhlaw and for our own personnel, Mr. Edwin Nongrum, M. Warr and M. Lyngdoh for their cooperation and especially to Ms. M. Kharmudai, Ms. D. Suiam and Mr. D. R. M Buam for all the tedious typing and compilation of the manuscripts.

I take this opportunity on behalf of the Cell, to duly acknowledge and express our special appreciation to Mr. P.R. Mawthoh retired Director, Soil, and ex-Advisor NEC, Chairman, Synjuk Rambah Shnong and ex-Coordinator Total Literacy Campaign for his ever willing service, effort, advice, support and enthusiasm right from the very initial stages of writing of this project. His advice will go a long way beyond this project to continually inspire us.

I am grateful to all the agencies/departments who have willingly supported this workshop by way of advertisements. I also would like to acknowledge M/S WATERS INDIA LTD. and M/S MILLIPORE INDIA LTD. for their sponsorships of dinners during the workshop.

The resolution adopted in conclusion stems directly from the interaction between all the participants in a special session meant primarily for the purpose. It expresses and reflects the views and concerns *vis-à-vis* Biodiversity Conservation issues in the North East. We sincerely hope that the resolution adopted will provide a better insight and serve as a reference document for other Agencies/Departments to act, and if necessary, legislate upon.

July 1999

D. Syiem
Organizing Secretary

As an effort to contribute towards Biodiversity Study, Use and Conservation, the North Eastern Biodiversity Research Cell (NEBRC) in collaboration with the Synjuk Seng Samla Shnong, Shillong (SSSS), a federation of youth organizations, had organized a workshop on *Peoples' Participation in Biodiversity Conservation* from 4th to 6th March 1999. The workshop aimed to bring people to a single platform to discuss issues pertaining to utilization of natural resources/wealth of the North Eastern region. Participants from all walks of life, which included eminent Foresters, Scientists, Researchers, Herbal Medicine Practitioners, NGOs, Community Workers etc. had deliberated on various issues related to the theme. This compilation of the proceedings is an outcome of the selected papers contributed by these persons. Minor editorial alterations have been made where necessary to maintain conformity and style without changing the subject matter. The papers compiled here cover a variety of subjects, from Peoples' Experience, Indigenous Knowledge Systems, Species Diversity, Use of Medicinal Plants and Threats to Biodiversity. The resolutions emerging from the NGOs' discussion held before conclusion of the workshop have also been included in this compilation. The recommendations arising from the Workshop will be disseminated to policy makers and lawmakers of all the North Eastern States.

It is sincerely hoped that this compilation would provide a vast array of information and development alternatives to various communities and also enlighten them about the need to Conserve, Study and Use Biodiversity resources effectively.

July 1999

B. Kharbuli
Convener

BIODIVERSITY CONSERVATION: WHAT IT MEANS TO THE PEOPLE A CASE STUDY OF THE MAWPHLANG DAM

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Introduction

Apart from the lurking danger of a nuclear war, there is probably no more serious environmental threat to mankind than the continued decay and erosion of the genetic viability and wealth of plants. Mankind has altered the environment for millennia, causing some species to prosper and others to suffer. Human activity is now changing the natural environment at a rate unprecedented in evolutionary history, and mass extinction is a virtual certainty. A million species may disappear in the next few years. Extinction or loss of species in an ecosystem is irreparable and calamitous for the human race. The greatest threats to biological diversity are the destruction of ecosystem, especially in the tropics, and the disappearance of habitats in the wake of developmental activities, dam construction, industrial activities, mining etc. A large number of species are also threatened by over hunting or abuse, poaching and illegal trade of bio-resources.

Dams and destruction of biodiversity

Construction of multipurpose dams for harnessing hydro-electricity has been a part of development process all over the world and this is generally located in the thick forest areas with perennial river courses rich in both terrestrial as well as in aquatic biodiversity. A typical example of such type of construction, which is coming up under our very nose, is the case of Mawphlang dam. Damming the watercourse here would inevitably lead to submergence of forestland and consequently, disruption in the breeding and reproduction of aquatic flora and fauna.

The Mawphlang dam may become a symbol of "development *vis-a-vis* destruction." It is not known whether it would produce electricity and even if it does it would be at a high environmental cost. The region's indigenous hill stream fauna and vegetation would be affected and a large tract of soil would be salanized which could kill all microflora and other soil organisms leading to "biological drought."

The proposed dam at Mawphlang is likely to destroy over 60-70-hectares of pristine forest cover and the underlying biodiversity. Moreover people who have given their land worth almost two crores have got back nothing in return and it will remain as such, unless the people themselves are mobilized to take up the issue for their cause. Looking at any of the other dam constructions in the country, the scene is not too different.

Situated about 10 kilometers from the Mawphlang dam site is the "Mawphlang Sacred Grove" which presents an interesting case of "Peoples' Participation in Biodiversity Conservation". This grove known as the Mawphlang Sacred Grove or the *Law Lyngdoh* is a pristine forest patch rich in biodiversity. Such patches of forest are parts of large forests that have been left untouched by the local people as part of traditional practice and rituals.

MAWPHLANG AND ITS ENVIRONS

Location & Salient Features

Mawphlang is a small but sprawling village located at a distance of 25 Kms from Shillong, the capital of Meghalaya. It is comprised of five settlements and has a total population of 2227. It is located at $91^{\circ} 45''$ East longitude and $25^{\circ} 28''$ North latitude with an average elevation of 6000 ft (1818 m). It is connected by an all-weather state road that runs through it from Shillong to Balat and Mawkyrwat.

Mawphlang village is also the traditional headquarter of *Ka Hima Mawphlang* under the headship of a *Lyngdoh*. *Ka Hima Mawphlang* is one of the 25 Khasi states located in East Khasi Hills district of Meghalaya and consists of 27 villages with a total population of 8103 only and has a geographical area of about 6 sq.kms. Mawphlang village at present is a changing and busy village; there is a Government high school, primary schools, Government Inspection Bungalows, State Government offices, dispensary, postal office and market. The government has also provided electrification and water supply. Five factors stand out clearly which makes Mawphlang significant.

- It is the biggest village of the *Hima Lyngdoh*
- It was famous for its local brandy distilled at the Mawphlang distillery started by the late Capt. Hunt of the British army and was mentioned in the book, "The land where women reign", published by the Sorbonne University.
- Lately it gained world prominence due to the sacred grove, which is northeast India's biodiversity hotspot.
- It is locally prominent, as a place that supplies the water needs of the ever-increasing population of Shillong City.
- It is historically famous for the historic David Scott's route upto Sylhet (Bangladesh) a part of which still exists.

Physical Setting

Geographically, Mawphlang village and its environs is bounded in the north by a mountain stream, Umrina, on the east by Mawngap and Marbisu villages, in the south by the Umiam Mawphlang river and in the west by the Marok mountain range.

The topography of Mawphlang right from the western extremity of the sacred groves across the village towards the east and upto to its northern parts is highly undulating, with slopes averaging between 20° to 35° . When travelling along the state highway one could see concave, convex, uniform and gentle slopes. The slope bottoms are interspersed with very low valleys and in between them, tracts of small flat level land are seen. The entire landscape is heavily denuded as it is almost devoid of vegetation and appears as a vast wasteland with the exception of the Mawphlang grove, a few trees here and there and the outlying groves along the right bank of the Umiam Mawphlang.

To the south east, south and south west, however, the undulating nature of the land ends abruptly to form precipices, steep slopes and rocky bluffs with a varied and thick vegetation for which the place is famous and can be observed when viewed from the top of *Riaz Umrisain*. The precipitous nature of the land starts appearing from a point in the Umtyrkhe stream where there is a beautiful but small waterfall known as *Ka Kshaid Wei Tdem*. This

stream joins the Umiang Mawphlang River at about one Km. east of the Umrising rocky bluffs. From this junction the Umiang Mawphlang River flows downstream in a southwesterly manner with steep riparian sides.

The highest point of Mawphlang is the *Ryngkew Mawiong* with an altitude of 6138 ft. From the top of this mount the mountaintops that figure prominently in Khasi culture, theology, history and mythology can be seen. Thus we can see the Shillong Peak to the East, the Rablang Peak to the South East, the Swer mountain top in the south, the Symper Kmawan ridge in the west and the Diengiei peak in the north east. The *Ryngkew Mawiong* though being the highest point in the area is a mount with very gentle slopes all around.

The topography to the north east and east of Mawphlang is also markedly undulating but to the north and north west the land is somewhat precipitous due to the existence of a steep cliff face known as *Rita Umkawang*, a place reputed for the profuse occurrence of snakes. From this point the topography take a gentle dip to slope down towards the *Umrina* where it meets other small mountain streams to form the *Lyngkien* valley in the northwest.

Geological Set Up

The Geological set up of Mawphlang and its environs is very complex. On tracing out the rock structures it is found that five types of rock groups are intricately juxtaposed. Thus the rock type seen here are the Khasi Green stones, The white sand stones, the red brown sand stones, the quartzites and conglomerates. In studying the geographical distribution of these rocks some inference regarding the orogenic and tectonic activities can be drawn. In chronological order, the Khasi green stones are geologically the oldest rock groups in and around Mawphlang. These rocks have the largest distribution and are buried deep below and apparently form the basement rocks. Exposures of these types of rocks are found on the Right Bank of the Umiang Mawphlang in the south and along the Sunei-Umrina streams in the north. The rocks, at places, exhibit signs of decomposition and exfoliation apparently due to chemical weathering as this area falls under the moist tropical zone.

Overlying the Khasi green stones are the metamorphic rocks in which intrusions in the form of quartzites are seen exposed on the rocky bluffs of the *Rita Umrising* and *Lum Daitdkhew* on the south eastern fringe. These metamorphic rocks that form the *Umrising* rocky bluff are greatly weathered and altered by atmospheric agencies due to the onslaught of south west monsoon and exposure to sunshine in the early part of the day, thus the rocks become friable as seen by the number of clefts and crevices. These clefts and crevices can also be partly attributed to tectonic activities such as upliftment as this area falls under the Tyrsad-Mawphlang-Barapani Shear Zone. The thickness of these rock groups is about 300 to 500 ft and are traceable to the North upto the *Rita Umkawang*.

On top of the metamorphic rocks are the white sandstones resembling those seen at Cherrapunjee and Lum Shyllong (Shillong) areas. The strikes of these rocks are West by South-West to West by East and the angle of dip is about 60° to 75° . The distribution of metamorphic rocks, that is the quartzites and also the sandstones, are confined from the base of *Ryngkew Mawiong* towards Mawngap-Marbisu in the east.

In and around Mawphlang sacred groves the rocks found are mostly conglomerates compacted and cemented together by the process of ionization and are juxtaposed to the sandstones, *Ryngkew Mawiong*. The Conglomerates are also seen along the right banks of Umiang Mawphlang from the *Rita Sabu* downstream in alternation with red brown sandstone

at localized spots. One of the major obstacle to be overcome for the construction of the proposed dam of the Greater Shillong Water Supply Scheme (GSWSS) is to devise methods so as to strengthen the basement foundation of the dam as the rocks in the right bank differs to that of the left bank but with a common feature - porosity. The conglomerates are also found exposed throughout the Mawphlang Sacred Groves.

Soils

The soil in and around Mawphlang varies in depth, thickness, colour, texture and structure. In terms of depth, thickness and colour the light brown, deep brown and black soils occupy large area. The light brown and deep brown soils resulted due to the presence of humus which depends on luxuriant vegetation which in turn depends on climate. These types of soils occupy east of *Ryngkew Mawiong* and extend towards the north, east, west and south. These soils are thick and at places are several feet deep. The products of weathering in this part remain in place due to the undulating nature of the landscape. But the bottomlands on the low valleys the soils are black. Soil along the right bank of the Umiam Mawphlang is very thin and is deep black in colour. Similarly the soils under the sacred grove is relatively thick and rich in humus and the soil here is granular in structure but is loamy in texture which accounts for the luxuriant growth of vegetation. In most cases the soil in and around Mawphlang is acidic in nature (pH. 4.5-5.3), the Mean Organic Matter (MOM) and Total Nitrogen Content (TNC) are 6.25 per cent and 0.31 per cent respectively.

Climate

Of all the active soil formers, climate is the most important. The elements of climate like moisture conditions, temperature and wind largely determine soil and plant characteristics. Precipitation like rainfall accelerates chemical and biological activities. Ionization of the many chemical elements is possible only when the minerals composing the surface rocks are saturated with water. And, as stated earlier, this area falls under the moist tropical zone, therefore rainfall in this part is moderate to heavy, with an average annual rainfall of 2200 mm between May to September. The Mean Maximum Temperature (MMT) recorded is 15^o Celsius to 25^o Celsius and the Mean Minimum Temperature (MMnT) is 5 to 18^o Celsius and the Relative humidity (RH) measured by hygrometer range from 25 per cent in winter to 88 per cent in summer.

Vegetation

Ka Hima Mawphlang today presents a bleak and barren landscape. All over it the land is covered with sparse grasses known locally as *traw*, *langniuh* and *langjem*. At present, vegetation cover occupies about 2 per cent of the entire *Hima*. However, thick and dense forests are seen from Riat Umrissain along the right bank of Umiam Mawphlang to the valley of *Wah Lyngkynwar* which meets the Mawphlang Sacred Grove in the south west.

Land Use System

The areas within the catchment are either Private lands, *Raid Lands* or Clan Lands and prominent among them are the land of *Pompyrthat* clan under Mawphlang Lyngdohship, *Raid Land* of Mawphlang Lyngdohship, *Raid Land* of Laitkroh Sordarship, land of Kharkongor clan, under Myllem Syiemship. Besides these lands, there are also those lands which are owned by thousands of private land owners.

Mawphlang Dam: A general report

The construction of a dam at Mawphlang by the Public Health Engineering (PHE) under the Greater Shillong Water Supply Scheme, is another glaring example of a non- Environment-friendly developmental activity, conflicting with the very essence of biodiversity conservation and sustainable development, leave aside socio-economic benefits to the people which is far fetched. Estimated at a total cost of Rs 32 corers, the dam once constructed is likely to supply gallons of water per day to the people of Shillong and its suburbs.

The dam which is primarily meant for overcoming the acute water shortage in the dry season, has been designed overlooking the fact that if trees are cut mercilessly to support the dam construction (by way of extracting stones and other raw materials from the hillsides) then there would be no catchment left to hold the water, nay a perennial source to feed the thirst of the ever increasing population. The catchment area, it may be mentioned, extends from the southern slopes of *Lum Shyllong* (Shillong peak) located at 1961 m, across the villages of Pamlakrai, Nongkrem, Smit, Myllem, Laitkroh and others. Moreover, the dam once constructed would submerge an area of some square kilometers.

Field survey

The North Eastern Biodiversity Research Cell (NEBRC), NEHU recently undertook a field survey to assess the real situation, as part of its ongoing biodiversity conservation and research programmes. The investigators of NEBRC observed that most of the exploitation, which is on, is in the form of quarrying and extraction of stones from the hillsides where the vegetation is thick and pristine. It was also found out that the Patel Engineering Company Ltd., to which the Public Health Engineering (PHE) department has assigned the job of dam construction is trying to make their task easy by overlooking the ill-effects of stone and gravel extraction on the environment.

Of late the peoples' attitude has undergone a sea change with the whole village now talking about environmental consciousness and the need to protect the pristine beauty of their land for sustaining their present as well as their future generation. The locals are now defensive, neither wanting any more tampering nor human interference on whatever is left of the area and also waking to the realities of the threats posed by deforestation, soil erosion, quarrying etc.

Conservation Plans

The NEBRC along with the Synjuk Seng Samla Shnong (youth organisation) Mawphlang are planning suitable alternatives *vis-a-vis* educating the residents their forms of extraction. The NEBRC investigators are of the opinion that a successful conservation programme cannot be developed without the locals participating in it. It must be remembered that in this part of the country it is the land which binds the community together and gives rise to the Traditional Knowledge System.

The onus is of course on the people to see that they are not exploited of their rights to use forest products and other resources in the hunt for fast and easy money. The NEBRC along with the premier youth organisation, SSSS would continue to play the active role of an initiator encouraging the participation of government organisations, grassroot workers, villagers, youth organisations, social organisations, the traditional bodies, experts, NGOs and all others connected to rural upliftment and biodiversity conservation.

Table I

Sl. no	Plant species-	Vernacular names	Plantation site	Remarks	General Comment
1.	<i>Quercus fenestrata</i>	Dieng sai	Banks of Umiew, Umtyrkhew and Umtyngar river	Almost all these plants have moisture retaining capacity, and some plants have broad branches which provide shade to the soil and prevents loss of water from the soil	Riverine reserved forests should be created all along the Umiam right from Pamalakrai as well as along the tributaries so as to check soil erosion etc.
2.	<i>Quercus serrata</i>	Dieng triang			
3.	<i>Wendlandia wallichii</i>	Dieng jakba			
4.	<i>Bucklandia populnea</i>	Diengdoh			
5.	<i>Wightea gigantia</i>	Diengslang			
6.	<i>Schima wallichii</i>	Diengngan			
7.	<i>Cinnamomum pauciflorum</i>	Dieng latyrdop			
8.	<i>Cordiamyra</i>	Diengmong			
9.	<i>Cinnamomum parthenoxylom</i>	Pingwait			
10.	<i>Manglietia insignia</i>	Dieng raisaw			
11.	<i>Quercus dealbata</i>	Dieng ri			
12.	<i>Ficus clavata</i>	Dieng Sameh Blang			
13.	<i>Castanopsis tribuloides</i>	Dieng soh-ot			
14.	<i>Decynia indica</i>	Dieng Sohphoh			
15.	<i>Corylus colurna</i>	Dieng Sohrisang			
16.	<i>Syzigium tetiagons</i>	Dieng Sohum			
17.	<i>Boelimeria malabarica</i>	Diengthynrait			
18.	<i>Camellia caduca</i>	Diengtyrnem			
19.	<i>Quercus griffithi</i>	Diengwah			
20.	<i>Macaranga denticulata</i>	Dienglakhar			
21.	<i>Flacourtia Sp</i>	Shiahsaw			
22.	<i>Corylopsis himalayana</i>	Pyiur			
23.	<i>Eurya accuminata</i>	Pyrshit			
24.	<i>Castanopsis indica</i>	Sning			
25.	<i>Vaccinium griffithianum</i>	Sohryngkham			
26.	<i>Klaeocarpus rubustus</i>	Sohkhyllam			
27.	<i>Rhus insignis</i>	Brah			
28.	<i>Pyrus pashia</i>	Sohshur Khlaw			
29.	<i>Viburnum fuetides</i>	Sohlang			
30.	<i>Betula alnoides</i>	Dienglieng			

31.	<i>Myrica esculenta</i>	<i>Sohphie</i>	Should be planted in and around Mawiong, Nongkynrih, Laitkroh, Nongkrem as these are the traditional homes of these plants		
32.	<i>Myrica nagi</i>	<i>Sohphienam</i>	-do-		
33.	<i>Myrica sp.</i>	<i>Sohliya</i>	-do-		

Keeping the present need of the people to work for a healthy society on developmental lines supported by systematic environment conservation, the NEBRC would focus on strengthening NGO-community interaction and to educate them further, about environment-society issues.

Suggestions

In a preliminary survey, the NEBRC Team members have documented and identified a number of plants in the Mawphlang area with the help of local resource persons and the Synjuk Seng Samla Shnong, Mawphlang unit. It was strongly felt that Afforestation/Tree plantation should at the least include some of the local and indigenous species. The species suggested for this area are as listed in Table I.

Conclusion

The case of Mawphlang dam and others development projects clearly reflect that the state is going through a rapid, though uneven development and economic expansion. However, all this does not mean that natural resources should be eroded to give way to development. Development is necessary for any society in transition, but it must be insured that the cost does not outweigh the benefits.