

NATIONAL BIODIVERSITY STRATEGY & ACTION PLAN



CONS/VA/9/ 3434

August 11, 2004

Dear Mr. Kothari,

Sub: BSAP for Chedema sub-state site

This is to inform you that the ^{above} report on the Biodiversity Strategy and Action Plan has been submitted by Shri. Khrikeitoulie Tracy Medoum (received in our office) on August 11, 2004.

We enclose herewith a copy of the report for your perusal.

With regards,

Yours sincerely

(Dr. Vibha Ahuja)
Member Secretary, TPCG

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Encl.: a/a

(unless otherwise specified or necessary, please send correspondence to Project Administration address below)

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National Biodiversity Strategies and Action Plans (NBSAPs)



Sub-State Chedema

Presented
By
Project coordinator

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PROGRESS REPORT

The first meeting of the NBSAP sub-state committee was held on 07.03.2001 at 4:00 PM at D-Block, Kohima. Mr. K.Medom and K.Shohe briefed the members present on the aims and objectives of the project. At the initiation of the local coordinator, the secretary for the committee was elected.

The Second meeting was held on the 20th of March 2001 at 4PM at the same venue. This meeting was attended by the two new members, so on Mr. K.Medom's request, Mr. K.Shohe briefed the members once again on the aims, goals, scope and guidelines of the project.

This was followed by lengthy discussions leading to the passing of a number of resolutions. Mr. Thomas was elected Media Secretary.

On the 26th March, 2001 a press release under the headline "NBSAP News" was issued requesting all sections of interested people to share their views and expertise with the sub-state committee.

The third meeting held on 04.04.2001 was attended by Dr. N.Kezienuo, Psychiatrist, Acupuncturist and famous indigenous Medicine Specialist, Herbalist as per resolution of the second meeting to invite certain prominent persons to deliver specialized lectures. He spoke of the medicinal herbs found abundantly in Nagaland and stressed on their preservation by creating awareness.

The members of the committee also delivered specialized lectures as per decision taken in the 2nd meeting.

Mr. K.Shohe and Ms Zeneikhonuo Vimero, representing the sub-state committee, participated in a workshop on "Women's Empowerment" organized by the department of Social Welfare and Security, Govt. Of Nagaland, and the Social Welfare Advisory Board, Nagaland.

The fourth meeting was held on 10.04.2001 at the same venue. Mr. Zhotoho Kiso shared his experiences on deforestation in Nagaland and afforestation problems and effects. Mr. Thomas Kent spoke on "Media Campaign strategy" and "General PRA". In this meeting it was decided to visit Chedema village the next day at 4.30PM.

The Village Council Chairman informed the villagers of the meeting at their Panchayat on 11.04.2001 at 6PM.

The Coordinator and some committee members appraised the villagers of the exercise. A very fruitful discussion took place. It was noted with interest that the villagers were highly conscious of their environment. They frankly shared with the committee their problems of the land, soil, climate, rainfall, water, etc. They agreed that deforestation is the single most devastating factor of their environment and would sincerely like to do something to reverse the ill effects caused, by taking up traditional practices and encouraging indigenous breed of cattle and plant species.

The fifth meeting was held on 1st June, 2001. The committee felt that a lawyer should be inducted into the group to tackle its legal issues.

The group should start documentation of species with the help of the villagers. For their scientific names Mr. Megoneitso, Kohima Science College, may be requested to help.

The following members are assigned specific tasks for the project. They include:

1. Ms. Zenei-ü – documentation of micro-organism
2. Ms Abouü- documentation of fauna
3. Mr. Zhotoho documentation of flora in association with Mr. Megoneitso.
4. M
5. s. Mimi- Gender, livelihood, lifestyles and culture in biodiversity.
6. Mr. Khekiho- Socio-economic survey

The sixth meeting was held on 03.06.2001 at 5PM at the residence of Mr. K.Medom. Prepared for Radio talk and progress report of the project.

Three of our members visited Chedema village to form different committees for documentation of flora and fauna. Altogether, 3 committees were formed:

- i) Wild Flora ii) Domesticated Flora iii) Wild Fauna.

IN BRIEF:

- 12 Sittings
- 7 site visits
- One Radio discussion in *tenyidie* (Local dialect) on World Environment Day;
- Visit to Guwahati (Consultation with National Coordinator and NE in-charge);
- Attended Shillong N.E. Eco-region Seminar
- Translation of call for participant in *tenyidie*, printing and circulation;
- Participated in women empowerment workshop at Kohima;
 - Continued meeting Govt. officials such as Chief Secretary, Principal Secretary, Forest Commissioner and Secretary, Forest PCCF, Director, Agriculture, etc. to expedite NBSAP formation and execution in the state level;
- Met several official and public leaders for sub-state level NBSAP;
- Documentation of flora and fauna by forming local body committee;
- Celebrated Earth Day jointly with the Family Planning Association Of India (FPAI) Nagaland Branch.
- Publishing and formation of the sub-state level committee and issues in the print media both in English and *tenyidie* ;
- Invited a guest lecturer to speak on herbal medicine (Dr. Kezienuo)
- Created awareness to let people initiate banning jungle burning, hunting etc.
- Preparation of maps and posters. Participated in "Imagine Nagaland"
- Questionnaires for socio-economic survey
- Background papers on various Topics;
Micro-organism, forestry, agriculture, PRA and guideline on NBSAP
- Gathering Socio-economic survey -
Main actors - VDB, Student Bodies, Women Groups, Village Council and Churches.
- Photo coverage (Stills and slides)

Minutes of the 2nd meeting of the Local Steering Committee, NBSAP, Held on 20-03-2001 at 4:00p.m at the D-Block, Kohima.

Mr. Khrieketoulie Medom, Coordinator, Sub-state Level of NBSAP began the meeting by calling the house to order. He then requested Mr. Khekiho Shohe to brief the new members on the aims, goals, scope, and guidelines. Discussion followed every major head and strategies planned.

Under "Expected Activities" it was decided that:-

- i) Document/report related to conservation of biological resources shall be collected from various related departments such as Agriculture, Horticulture, Forest, Soil & Water Conservation, etc. and from Chedema and its surrounding Villages, if available.
- ii) Potential resource persons should be identified and their expertise tapped. In this connection three names, to start with, have been proposed. They include Mr. Thepfulhouvi Angami, Principal Chief Conservation of Forest (Retd), Mr. Khrielie Kevichüsa, Secretary to the Government of Nagaland, Department of Housing, and Dr. Neikhrolo Kezienuo, Psychiatrist and Specialist in Medicinal Herbs. They shall be requested to deliver lectures.
- iii) Members, in consultation with various sections of people, may collect information on expertise, available and lacking.
- iv) Members may contribute articles on various aspects in connection with the project in *Tenyidie* [Angami dialect] & press conferences with the local media.
- v) Radio programmes and workshops in *Tenyidie* should be conducted in Chedema and the surrounding villages.
- vi) Cultural festivals should be conducted in the village to promote the programme by tying up with DRDA.
- vii) Documentation of various species and varieties must be done.
- viii) On going projects in Chedema such as watershed, etc should be identified.

The Proposed processes include:-

- i) Participation of various groups
- ii) Suggestion to the villagers for propagation of the program through compositions such as song, poetry, etc. and organizing festivals.

Mr. K.T. Thomas, Media secretary, Peoples' Group [vi], was unanimously elected Media Manager for the Project.

The next meeting of the Steering Committee is scheduled for the 4th of April, 2001 [4:00 pm]. Mr. K.T. Thomas will talk on Media and PRA, Mr. Zhotoho Kiso on Wild Flora & Fauna, Mr. K.Kire on Domesticated Biodiversity, Ms. Zenei on Micro-organism and Ms Abou Belho on Zoology.

Mr. Zhotoho Kiso proposed the vote of thanks.

(GLENN T.THONG))
Secretary
Local Steering Committee, NBSAP.

Minutes of 3rd NBSAP meeting:

Dated Kohima the 4th April, 2001
Time 5:00 P.M.

1. The first lecture on 'Media Campaign' was delivered by Mr. K.T.Thomas. He stressed upon the aims and objectives of media and participant audiences, general PRA, it's purpose, series of section involved in general PRA.
2. The second Lecture on "Classification of Agricultural Crop" was given by Mr. Khriesezolie. Under this, he gave 6 types of classifications:-
 - a) Morphological;
 - b) Economical;
 - c) Cultural;
 - d) Seasonal;
 - e) Classification according to life cycle;
 - f) Special classification.
3. The third lecture on "Microbiology" was given by Ms. Zenei. She stressed on the grouping of microbial world i.e. virus, bacteria, moulds, algae & protozoan's and their general characters and the need of their conservation for their economical value.
4. The fourth and final lecture was by Dr. Kezienuo on 'Medicinal Plants of Nagaland'. In his speech, he said Nagaland is a land flourishing with enormous medicinal herbs and indeed, through this NBSAP process we can create awareness among the local people the need of conserving these rich flora

Minutes of the 4th meeting of NBSAP

Time- 5:00p.m

Date - 10.04.2001

Mr. Zhotoho Kiso delivered a talk on his experiences with the department of forest. Prior to 1975 Naginimora in Mon district was covered by luxuriant vegetation. By 1986 the virgin forest disappeared, except for some bamboo and undergrowth along the foothills. This small town had by then 19 saw mills and 2 veneer mills which produced 180-300 cubic meters of timber a day. The trees that soon disappeared included Hollock, Makai etc. some of which had girths greater than 20 feet. These forests were not replaced then. The timber brought in plenty of money which was, however, luxuriously spent without any investment. Naturally, the rich wild life too disappeared with loss of their natural habitat.

The Forest department is concerned with roadside plantations and reserve forests e.g. Sinphan and Rangapahar. At the onset of timber operations in Nagaland, the forest department encouraged aforestation by introducing exotic species as others failed. Plantation was thus encouraged on the peoples term, but failure was inevitable as the people took the money but never undertook the operation. With the introduction of the LOC system by the Govt. aforestation programs (seasonal work) failed further.

In 1992 awareness set in when a few people started seeking guidance. During this period the forest department personnel also came to realize the past mistakes and reformations have begun to take place.

The government also introduced other departments for plantation works. However, lack of scientific knowledge has resulted in faulty implementation of projects e.g. Gamari being planted at unsuitable sites. It is estimated that in about 30-40 years from now there should be a total change in the natural environment. Due to the introduction of the exotic species, having faster growth rates, and of higher qualities, the soil structure and chemistry are totally changing. Plant diseases too are a common phenomenon today.

The forest department does not have a record of flora and fauna. The lack of people's participation is another negative factor. The important thing now for success is for cooperation, guidance and proper help by the concerned authorities.

The 1968 Forest Act talks of Reserve Forests which are, however, very few as most land belong to the villages/private. In fact 89% of the land is under peoples control whereas the government has less than 11%.

In 1970 the Nagaland *Jhumland* Act was enforced for realization of royalties in case of timber, and preservation of environment. The 1978 Wildlife Act declared Puliebadze a wildlife Sanctuary (Previously protected Forest). The protected forests are zones of protection and conservation of water etc. as and when necessary. A few Reserve Forests include Sinphan and Rangapahar whereas Intangki is declared a National Park.

Mr. Zhotoho emphasized that land may be purchased by the Government as and when required under certain circumstances.

Mr. Thomas Kent talked on PRA (Participatory Rural Appraisal) as a tool for sustainable development. In PRA the weaker sections of society, e.g., Villagers, poor people, etc. are involved so development is all round. General PRA helps promote the rapport which leads to development of the local community.

The importance of Media Campaign strategy was discussed. It is realized that National and State level training is vital. Press conferences with local media and publicity in the vernacular. Press is equally important as also group discussions on Radio and TV. As awareness for the project is the main target a slot is necessary on radio, for instance, a few minutes after the Angami news.

Free advertisements in local journals/papers too will help, as also translation of articles in Ura Academy, Ura Dze.

Villagers may be motivated to compose traditional songs, poems, etc. with biodiversity as the central theme. These could be highlighted during festivals, cultural exchanges, etc. Organizations around Chedema, such as the BSF, SSB, etc. could also be requested to organize Biodiversity Melas to promote awareness. In addition, visual forms of awareness maybe encouraged. Some examples:

1. Slide and Cinema shows may be organized in Chedema of various regions such as Shilloi, Dzukou, etc.
2. Stick-on-charts and posters may be displayed.

It was decided that a meeting with the Chedema Villagers is due so a visit was planned for the 11th April 2001. At this first meeting the Chedema villagers are to be requested to furnish information on various aspects of biodiversity. Information from the ESN (Environment Society of Nagaland) also should be collected. For this a meeting with their Chairman Mr. Charles Chasie would be required.

Prior to the meeting with the villagers a village walk is recommended in order to gain their confidence. The discussion with the villagers are to include the following:

1. Biodiversity conversation- interrelationship of man and nature;
2. Population and socio-economic pressure;
3. Listing of endangered species;
4. Their threatened habitats;

The villagers may be divided into groups to list out the species of plants and animals. Importance should be given to introduce the project and then give the people time to think of the problems. The first step should be very casual so as to gain their confidence and bring in their active participation. After gaining their confidence business may begin but as casually as ever.

Meeting of Sub-state Committee Members and Chedema Villagers at Chedema Village Panchayat Hall 11th April, 2001 at 6:00 p.m.

Khrieketoulie Medom introduced the members to the villagers and spoke briefly on the aims and objectives of the project. The Village Council Chairman then requested the villagers to interact with the members. Mr. Khekiho Shohe and Mr. Thomas Kent too further briefed the villagers and encouraged them, particularly the women, to actively participate, stressing on gender quality. Vigorous discussions immediately began with equal participation of both men and women.

The Villagers are highly aware of the causes of their problems. Committee members raised a number of questions on various issues. The Villagers were only too glad to share their problems, experiences, and views.

It is stated that the atmosphere has become polluted and much more warmer compared to that of a few decades back. Rainfall too is lesser. A number of streams and old water holes have dried up. The villagers now have to go further away for water. They are aware that these factors are due to deforestation, but deforestation cannot be totally stopped because the need for forest produce is growing due to rapid population growth. Though a good number of the villagers have migrated to the urban areas the number of families in the village has grown tremendously. This has upset the socio-economic balance. Deforestation continues unabated for three reasons mainly- 1. Money 2. Jhum 3. Road construction

The money earned out of forest produce such as firewood, green vegetables, fruits, etc. is necessary for kitchen and home expenditure, children's education, etc.

The rice obtained by terrace cultivation is not sufficient as terrace areas are limited to a few low-lying areas near streams. The whole village is engaged in terrace cultivation. However most families also practice Jhum cultivation to supplement their annual need of rice. These dry fields are also the source of vegetables and fruits necessary for their kitchens, besides being revenue earners.

The villagers further stated that the rice they cultivated a few decades back was of a very different quality. What could feed four people then, can feed only one person today. This is because of the introduction, and use exotic species. People lived longer then. Today the life span is drastically reduced. The same is true of domestic animals. Previously diseases were unknown but with the introduction of new breeds even indigenous animals fall prey to a number of diseases. Moreover the indigenous animals are not adapted to exotic plant food. The imported breeds of animals need a lot of care and consume too much.

The same is true of the forests. Indigenous species have been destroyed in a number of places to be replaced by exotic ones. These have brought diseases with them.

Because jhumming is necessary and soil being degraded after every harvest, every year new patches of jungle are cleared for cultivation. As this continues the villagers are forced to go further away from the village for fertile land. After clearing jungles the debris are burnt to fertilize the soil. Land reclamation for jhum cultivation is 8-12 years for this village (jhum-cycle). Saline solutions are occasionally sprayed in the fields to destroy weeds. The village has 1 dispensary and 6 Rice Mills. Previously cane products were manufactured on a small scale. This is now stopped because of lack of cane.

Medicinal herbs are used by some villagers for common ailments. Portions of some terraced fields are also used for breeding fish. Some families have separate fisheries.

Wildlife is fast disappearing due to hunting. However the villagers say this practice is being curbed.

The people realize that their problems are due to commercial exploitation. They are also aware that indigenous plants are necessary and that exotic plants should be done away with. They remind us that one should not forget one's original ways of living and that to save our environment.

The Visit To Guwahati Meeting on NBSAP: A Brief Report

Dated: 23/04/01

Team: Tracy, Zenei, Mimi. Date: 15/04/01

The Kamrup Express pulled out of the station at 10:45pm. The journey passed uneventfully and reached Guwahati the next morning at 6:15am

At 3:30pm, we had a meeting with Prof. Bhattacharjee, the Head of the Department Zoology, Guwahati. The main points meeting are as follows:

1. He stressed on the importance of documenting (a) the rice varieties grown in the area, (b) the medicinal plants and their uses, (c) the materials for making ethnic musical instruments, (d) the ingredients used in the preparation of traditional food.
2. For propagating environmental awareness he suggested the organizing of street plays both in the village as well as the town. To feed the interests of the people the street plays may be based on musical instruments, food and song in relation to forests.

At 8:30 pm we had a meeting with Dr. Kothari and Prof. Bhattacharjee. It was decided that the first draft of the action plan would be ready by August/ September and sent to Dr. Kothari. The action plan would then be finalized by November/December, and ready to be introduced to the village. The action plan should be prepared with the villagers, dwelling on the threats and problems faced and their response to these problems.

When asked on the funds for the implementation of the action plan, Dr. Kothari clearly indicated that a good action plan is necessary. Funds may be obtained from CEE, UNDP, N.E. Council and IRDC.

It was also discussed that for an overall Environment Awareness Programme, politicians need to be involved. To achieve this, Environmental Education needs to be introduced and imparted in the schools and colleges, as today's youth are tomorrow's future. The course materials used need to be locally based. It is a happy finding here that Mr. Charles Chase has started on this and come up with an Environmental Course Book for Schools in *Tenyidi*. It is not yet known whether it has been published.

The next day we went to the CEE North East and met Dr. Abdhest Gangwar, Scientist-in-charge. We purchased some books from the CEE for the Society (The details of which are known by Zenei). We also got details of the small Grants Programme offered by the CEE.

This report by no means does justice to the visit as a lot of details have been left out. Zenei's report should definitely be more informative.

Zenei and Mimi left Guwahati on the 17/04/01 and Tracy went –“Bolero- Break Free”. All in all it was a pleasant and fruitful visit

“Report on NBSAP meeting held at Guwahati from 16-17 of April 2001”

From our Sub-State Committee, three of us (Tracy, Mimi and self left for Guwahati)

Left for the meeting on 15th April 2001 evening by train from Dimapur and reached our destination in the morning.

At Guwahati, we met Dr. Bhattacharjee (Regional co-coordinator) and he briefed us on how to go about the final draft plan.

Identification of problems faced by villagers due to loss of rice biodiversity. The action plan to be followed accordingly hand in hand with the villagers and the village authority concerned and the committee.

The second meeting is with Dr. Bhattacharjee and Dr. Ashish Kothari, TPCG coordinator. During the meeting, we shared our progress report with them, enquired about our doubts on some specific points. Dr. Ashish Kothari urged us to go ahead with our plan and action as the final draft plan is to be submitted by August.

On 17th April 2001, two of us (Mimi and self) went to meet CEE- Scientist-in-charge Dr. Abdes. During this meeting, we discussed on how to go about into creating awareness on environmental issues through environmental studies in school and colleges. Accordingly we also procured 3 books for our committee from the center.

By 17th evening we started our journey back from Guwahati and reached Dimapur on 18th

ZENIE-Ü
MEMBER.

MINUTES OF THE 5TH MEETING OF 1ST JUNE 2001

Mr. Medom informed the members of the meeting of the NE Regional Coordinator Committee at Shillong.

It is noted that it is not possible to implement all the requirements of the Shillong meeting. One major hurdle is the identification of species and that their determination should be done at a later date by the BSI, ZSI.

The committee felt that a lawyer should be inducted into the group to tackle its legal issues.

The group should start documentation of species with the help of the villagers. For their scientific names Mr. Megoneitso Meyase, Kohima Science College, may be requested to help. He may also be inducted into the group

The following members are assigned specific tasks for the project. They include:

1. Ms. Zenei-ü – documentation of micro-organism
2. Ms Abou-ü - documentation of fauna
3. Mr. Zhotoho documentation of flora in association with Mr. Megoneitso.
4. Mrs. Mimi- Gender, livelihood, lifestyles and culture in biodiversity.
5. Mr. Khekiho- Socio-economic survey

Mr. K.Medom is requested to arrange for time on Radio for discussion in *Tenyidie* as a part of the awareness program on the 4th of June, 2001, on the occasion of World Environment Day which falls on the 5th June. Mrs. Mimi is requested to work out the "Call for Participation" for discussion on Radio on 04.06.01.

The next meeting of the local committee is fixed for 5PM on 01.06.01 at the residence of Mr. K.Medom.

NBSAP NEWS

The local (Sub-state) Steering Committee of the National Biodiversity Strategy and Action Plan (NBSAP) had its 2nd meeting on the 20th March, 2001 at D-Block, Kohima.

The program is multidisciplinary and offers scope to a wide section of people to share their views and expertise in protection of our environment, locally and globally.

Interested persons may contact :

1. Mr. Khrieketoulie Tracy Medom
Coordinator,
D-Block, Kohima
Ph.No. 0370-2291234(R)
2. Dr. Glenn. T.Thong
Deptt. Of Geology,
Nagaland University, Kohima
Ph. No. 0370- 2224330 (O)
2223120 (R)

Dear Mr. Ashish Kothari,

Greetings from Nagaland !

Sub-State site Chedema is a village and there are a number of villages nearby where the success of the Site can easily be replicated.

Consequent to the formation of our Sub-State Level Committee we are, at present, in the process of educating our members on the NBSAP Concepts and Guidelines. Minutes of our meetings are being forwarded for your information. We shall be sending an up to date status of activities by the 2nd week of April.

The State Level Committee has been constituted since August 2000, but unfortunately we have not heard of any further progress. The inactivity of the SLC has also affected us to a great extent as we depend on their advice and guidance. Grateful if you can write to them to this effect.

We have met the concerned officials of the SLC several times and have impressed upon them the importance of the NBSAP exercise and the time bound factor.

We are grateful for the encouragement and continued concern and guidance that you have shown us.

Thanks.

(KHRIEKETOULIE TRACY MEDOM)
DZEVI SOCIETY,
82 East View, D-Block,
Kohima – 797001
Ph. 0370 – 2291234

NATIONAL BIODIVERSITY STRATEGY & ACTION PLAN
(NBSAP)

It aims to formulate

- i. Local
- ii. Regional
- iii. State
- iv. National strategies and action plans for
 - a. Conserving biodiversity;
 - b. Sustainably using biological resources; and
 - c. Achieving equity and fair benefit-sharing in such use.

MAJOR RECOMMENDATIONS

1. Making the process very broad-based and participatory, involving all sectors of society;
2. Assessing all aspects of (BD): biological, social, political, economic, and ethical; and including both wild & agricultural diversity;
3. Integrating (BD) into the various sectoral plans;
4. Making strategies and Action Plans based on
 - Maintaining the ecological security of the nation
 - Ensuring the livelihood of local communities

GUIDLINE FOR EXECUTING AGENCIES

1. Expected activities of each group:-
 - a) Assessing existing report, action plans;
 - b) Identifying available information and data
 - c) Identifying available expertise & experience (both formal and informal)
 - who has worked and working
 - what kind of expertise
 - what kind of expertise is lacking.
 - d) Soliciting inputs through
 - i) Letters
 - ii) Public meetings
 - iii) Workshops
 - iv) Advertisements
 - v) Print, radio, TV
 - vi) Festivals
 - e) Analyzing all relevant sectoral plans, policies and laws
 - How relevant & what contradictions and identifying ongoing or proposed programmes and projects that could help in the implementation of the Action Plans
 - f) Identifying ongoing processes which NBSAP process can link up
 - g) Economical use of the resources available within NBSAP process and identifying sources of funds and expertise;
 - h) Documenting the planning process at all stages & levels

Refer to page 27

11. PROPOSED PROCESS: Participatory nature

- 1) Govt. agency & NGOs (environment related), Arm Force & the Police.
- 2) Citizens group : activist, research, educational & NGOs
- 3) Local communities- VCs & Women committees
- 4) Independent experts
- 5) Private corporations, especially those dealing with (b) resources
- 6) Politicians
- 7) Media (print, electronic & folk)

Maximum participation should ensure:

- i) Working fully transparent
- ii) Public input (public announcement, newspaper, radio, TV)
- iii) Making all the information available to the public
- iv) Using local languages in all key documents
- v) Allowing for a diversity of opinions & approaches
- vi) Using special occasions where people come together
- vii) Making publicly available draft APs to consider comment & inputs

III. STATE LEVEL PROCESS, SHOULD ENSURE

- i) High-level official authority to the process: announcement
- ii) Coordination with State Planning Board (SSC)
- iii) Encouraging sub-state level process
- iv) Self initiated process by grassroots organization
- v) Respecting the result of "lower" level information & APs
- vi) Being sensitive to inter-state issues
– ensuring linkages with the NBSAP eco-regional Plan
- vii) Ensuring the participation of all sector in the SSC
- viii) Translating all key documents into local languages
- ix) Committing at the very start
 - a. Documenting the whole process (or commissioning process documentation to an independent agency).

IV. EXPECTED OUTPUT AND FOLLOW-UP

The final APs should contain

1. Statement of the issues or problems;
2. Identification of ongoing plans, programmes & initiatives;
3. Identification of key actors involved;
4. Identification of major gaps in coverage;
5. Delineation of steps needed to plug gaps & enhance the effectiveness of plan, programmes & initiatives;
6. List of measures & strategies needed to implement these steps in the short, medium & long term
7. Prioritization of these measures in term of their importance & urgency;
8. Identification of key elements needed to implementation: institutional structures, funds expertise/human resources, policy/legal measures monitoring etc.;
9. Specific proposals (prioritized according to importance and urgency);
10. Full list of references or bibliography;
11. Detailed process by which plan was produced.

All APs should incorporate & engage with the following cross-cutting themes:

1. People's participation & empowerment (participation at all the stages, including in defining objectives & goals, conceiving plans, implementing them, etc.);
2. Gender & equity;
3. Indigenous knowledge & practices;
4. International issues.

All APs should be accompanied by appropriate maps, photographs & references.

- Special focus producing proposals for implementable projects, programmes & Processes, along with the resources (human, financial, technical, institutional).
- Re-orientation or revision of existing plans
e.g. change in agriculture policies
Integration of (b) concern into plans & programmes.

* MICROBIOLOGY

Defn:- The branch of biology involving the study of micro-organism and their use to man. Microbes are those organisms which cannot be seen with our naked eyes. It includes:-

1) VIRUS → It's a Latin word which means 'poison' they are the smallest of all microbes.

Gen. Characters :-> possess both living & non-living props.

- DON'T respire, have no cellular structure
- Can be crystallised & store in close container for yrs.
- Most of them are parasitic

* Economic imp't. & need to conserve them

- Causes viral diseases. Eg:- AIDS (HIV), polio - poliovirus (Ans); T.M.V in plants.
- use as vaccine; preservatives (R.G)

* BACTERIA OR MONERANS :- most primitive living organisms, found everywhere (except in burning fire)

* Characters → unicellular, have rigid cell wall, heterotrophic & parasitic, many fix atmospheric N₂, absorb food in liquid form, reproduce by fission.

* Economic importance & need to conserve

- Causal of many diseases. In plants → wilt of potato, Tobacco (Pseudomonas)
- In Animals → T.B by Mycobacterium
- tuberculosis, cholera, bacillus cholera

- Industrially → dairy processing. eg. curd, cheese by Lactobacillus. sp.
- N₂ fixers. eg. Rhizobium leguminosum.
- role in nutrients cycling.

* PROTIST: A) ALGAE :- represent the most primitive & oldest type of plants.

• Gen. characters :- → unicellular, autotrophic, thalloid, reproduce by means of fission, fragmentation.

• Economic imp. & need to conserve them :-

- source of food for aquatic micro fauna.
- fix atmospheric N₂, eg → NOSTOC, Anabeana
- decomposes organic matter, carried out nearly 80% of photosynthesis in biosphere
- Can reclaim alkaline barren soil.
- 4% of O₂ content in H₂O is kept constt. by them.

B) Moulds :- Represents the most primitive fungi. They are widely distributed in nature.

• Gen. characters :- plant body - delicate thread like struct. (hyphae), absorb food in soln. form, reproduce mostly by spore formation. & they are heterotrophic in nature

• Economic Imp. & need to conserve them :-

- As saprophytic → plays major role in nutrients cycling. Industrially, plays major role in alcoholic fermentation.
- Causal of diseases in plants. (Blight disease of potato (P. infestans) & Animals (Ring worm) (man))
- Very Toxic, have medicinal value. eg. Penicillin

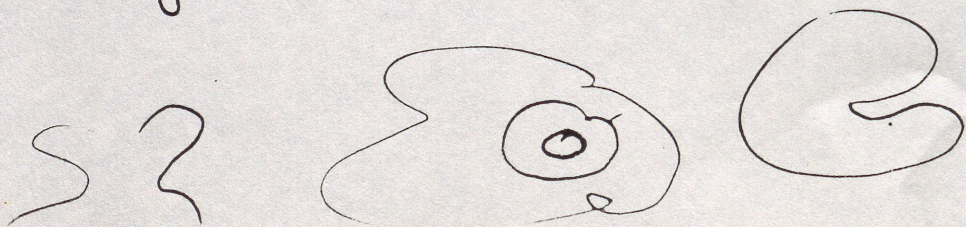
→ Protozoan Protist :- (1st Animals)

Gen. Characters :- unicellular body, widely distributed, mostly free living but many are parasitic, move about with the help of pseudopodia (false foot), flagella (whip like struct.) and cilia (hair like struct.).

Economic impt. & need to conserve them :- Plays very impt. role in nutrients cycling in biosphere.

→ Causes diseases. eg. malaria (Plasmodium vivax), kala-azar (a severe liver infection) by Leishmania.

Conclusion :- microbes are unique, multifunctional (ie. both -ve & +ve). lately, it has been realised that the cause of extinction of many impt. microbes is due to habitat destruction and pollutⁿ. by man activities. (cutting & burning of forest; discharging of hot industrial waste (liquid) in water body; use of chem. pesticides, weedicides, fertilizers etc). Conservation of these unseen organisms can be achieved by creating awareness that truely they exist and are of great importance. They are the unseen chain that link SPA → on which animals depends for their living.



Step 3 : General PRA

3.1 The purposes of the general PRA are to:

- a) Promote further rapport building with all sections of the community;
- b) Demonstrate the commitment of the project to working closely with the local community;
- c) Demonstrate the respect of the project for the knowledge and views of villagers, especially women and poorer groups who may not be so articulate;
- d) Collect baseline information on social organization and farming systems in the village;
- e) Identify, together with villagers, local problems and area concern;
- f) Provide COs with an opportunity to gain the knowledge necessary to work effectively in the community;

3.2 General PRAs will take place in a series of session over a number of days. They will be coordinated by the COs concerned, who should be supported by the FS (CD) FS (Gender) and technical field specialists.

3.3 There is no one, standard way of organizing a PRA. The order, sequencing and way of carrying out the exercise will vary from village to village. PRAs do not have to be (and sometimes should not be) undertaken as large public events.

3.4 However, over the period of any general PRA, the following activities should be undertaken:

- (a) Preparation of a village map, showing location of houses, roads, tracks, wells *nalas* and hills, community facilities and village boundaries;
- (b) Preparation of a natural resources map, showing land type, main land tenures (e.g. land owned by individuals, *panchayats* and the Forest Department) wooded areas, *nalas* and other information);

(c) Collection of the following information on natural resources:

- The different types of land in the village and the cropping pattern on each (i.e. crops grown, dates of planting and harvesting, names of main varieties);
- The most important tree species and their uses and listing of any trees that have been planted.
- Environmental history of the village, including changes in forest cover, cattle numbers and crops grown;
- Farming systems calendar of the year (rainfall, crop-wise agricultural operations, fodders and fuel availability, use of forest on and off-farm employment of men and women).

(d) Collection of the following socio-economic information:

- Household census (names, age and gender) social organization (tribes, clans, caste, factions) settlement pattern (*faliyas* or neighbourhoods)- all collected during the social mapping exercise;
- Kinship diagram showing the kinship and marriage relationship among families, and identification of traditional and other leaders and office holders;
- Brief history of the village, including earlier development activities(e.g. cooperatives);
- Linkages between the village and outside institutions (e.g. government departments, moneylenders, police, NGOs, local markets, other services);
- Socio-economic calendar for the year (employment on-farm and off-farm, credit, income and expenditure, drinking water availability);
- Division of labor between men and women (in relation to farming and household activities, off-farm employment and migration);
- Ownership of land, livestock and other assets.

(e) Identification of village with specialized skills.

- 3.5 A variety of PRA technique may be used, including group and individual interviews, discussions and key informants, mapping and modeling. Matrix ranking, village walks, trend analysis, pie and bar charts; graphs; seasonality; linkage and kinship diagrams; secondary data and simple observation.
- 3.6 Immediately after completion of the General PRA, there will be a critical review by all members of the PRA team in terms of the following criteria: adequacy of preparation, level of participation in the PRA by men and women from different sections of the community, impact on rapport building process in the village, quality of the information generated, identification of gaps and biases, assessment of different techniques used, lessons learned and plan a for any follow-up work needed adequately to complete the general PRA document
- 3.7 As the planning process continues, further information will be collected and analyzed (e.g. completion of 'chula' record cards for each household; and wealth ranking/livelihood analysis – see Step 5). These data will be consolidated with those collected through the general PRA.

Indicators of Achievement.

- 3.8 Consolidation of the information generated in the village file, analysis of the data and drafting of PRA report, involving a summary of the main information collected and the main finding of the critical review.
- 3.9 The FS (CD) and FS (Gender) must agree before proceeding to Step 4.

IMAGINE NAGALAND EXERCISE ON ECOLOGY

1. No, I cannot imagine Nagaland without ecological balance. Considering the delicate balance between development and ecology Nagaland would be practically barren.
2. I doubt whether there is any respect for ecology at present in Nagaland.
3. The public needs to be made aware and have to be educated about the consequences of ecological destruction. Secondly, whatever development takes place one has to keep the ecological factor in mind.
4. The need to conserve and protect ecology is only a recent awareness. However, the trend to protect ecology is gaining ground slowly.
5. Yes, Ban hunting of wildlife through education of the community. Simple banning by Govt. will not do. Public needs to be educated.
6. Yes but it should be maintained by village communities as most of the land belong to the people.
7. In Nagaland each community/tribe have their own land and their own customary laws which play an important role in development process. A community which is aware of the need for ecological balance will definitely play a positive role and also influence the Govt. in its decision making.
8. People should not live beyond their means but practice thrift. Management of natural resources is not satisfactory. The rate at which development is taking place is more than what nature can replenish. Development is not in tune to environment protection.
9. If there was peace... but not... there might be unprecedented development. "Can a fragile ecosystem/ecology sustain such a system for long?" People would be scrambling for greener pastures. So where is the place... so what is the value of such development"

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IMAGINE NAGALAND EXERCISE (UNICEF)

1. No, I cannot imagine Nagaland without ecological balance. For, without ecological balance it will become uninhabitable.
2. There is not much respect for ecology in Nagaland today. Because ecology and poverty are related. Though they may have respect for ecology, but in order to survive they are tampering the ecological balance.
3. This delicate balance can be maintained and promoted if poverty is eradicated. People are destroying the delicate balance for their survival. Alternatives have to be found out to improve the *jhumming system*. Also, a paradigm shift is required. So that, people don't have to hunt/collect for commercial purposes.
4. I don't think various developments as it exists today help in conserving and protecting ecology. As development as it exists today, have been understood only in the infrastructural sector, without going onto total human development.
5. Yes, non-consumption of wildlife is a necessary component of wildlife conservation. As people have a belief that wildlife consumption is medicinal and recuperative, measures have to be taken to combat this sort of superstition.
6. Though establishing more Wildlife Sanctuaries and National Parks is good thing, such ideas should come from the communities themselves and not super-imposed from above at the Governmental level.
7. In Nagaland most of the land is owned by the communities, Khel, Clans and individuals, the role of protection of the ecological balance should be handed over to them. If it is handled by the Government, no body seems to have any respect, but if it is a community initiative it is more effective
8. Natural recourses are not limitless. They should not be exploited beyond a sustainable level. Therefore, we should use our precious natural resources very judiciously.

Socio-economic survey

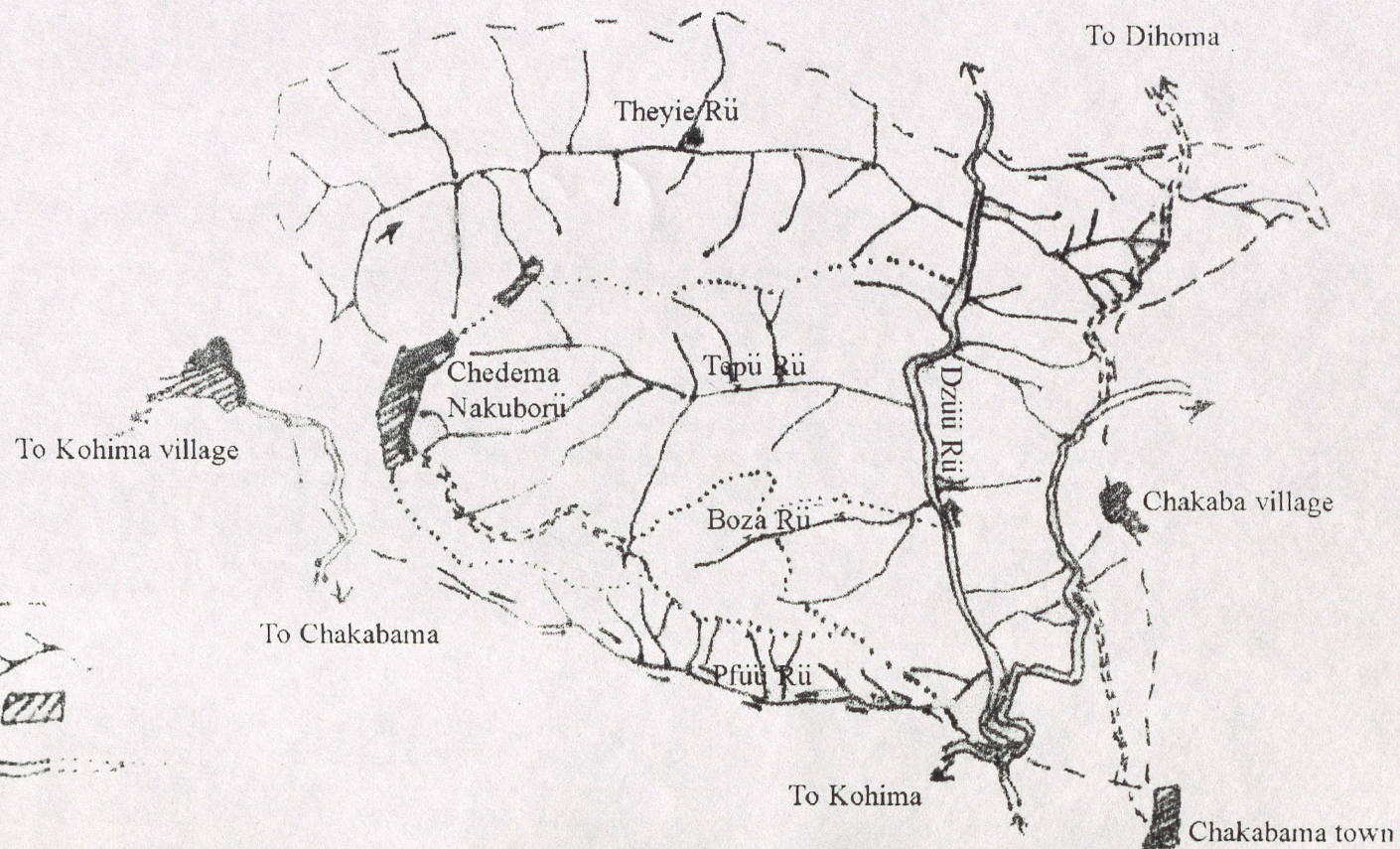
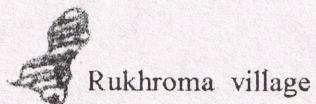
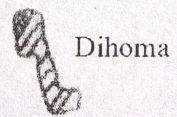
1. No. of house holds: 370 (approx)
2. Total population. 3000.
 - a) Agriculture area 2000 Ha
 - i) Irrigated : 30%
 - ii) Jhum : 70%
 - b) Forest area: 2633 Ha.
 - i) Private: 65%
 - ii) Clan/ Community 35%
 - iii) Govt. Nil
 - c) Fishery:
 - i) Domesticated fishery pond Pisciculture 5%
 - ii) Stream/river Negligible
 - d) Domesticated/ Animal husbandry : Cattle: 70% of the people
Pigs: 70% of the people
Poultry: 70% of the people
 - e) Wild Fauna: Deer, Wild Boar, Civet Cat etc.
 - f) Wild Flora: Large and varied.
 - g) Horticulture area covered/ orchid: 2% of the cultivated area
 - h) Domesticated Agri. Crops: Rice, maize, job's tears, pumpkins, chilies, cucumber, basil etc.
3. Land use classification: Agri.: 75%
Woodland for firewood: 10%
Village area: 2%
Community reserve Forest: 3%
4. Paddy Harvest through 10%: Nil
5. Radio & T.V. 15% of the people own TV
6. Agri. Tools: Spade, dao, hoe, bamboo rake, cows for ploughing, power tillers etc.
7. Village blacksmith: 3 Blacksmiths
8. Communication: Road, Telephone.

9. Man days: 200 Man days coverage out of 365 days
10. NTFP: Bamboo, wild vegetable, gum, honey, fodder, thatch, wild fruit, nuts, orchids etc.
11. Other source of income: I) Vegetable ii) Firewood iii)Charcoal iv) Sticky rice v) Domesticated fruit etc.
12. *Incidence of forest fire and reasons:* i) Almost yearly occurrence of man-made forest fires, Security Forces, ii) Hunting, iii) New shoots for cattle grazing.
13. Market infrastructure: No Market infrastructure in village. Kohima (6 km) where market infrastructure is available.
14. Men and women ratio: 1520:1480 => 50.6:49.4
15. Cooperative societies: 10 Cooperative societies
16. VDB (Women's share): 10%
17. Village council (Women): 1(one) women representative out of 9 members.
18. No. of schools and students: 4 Schools: 2Govt. and 2 Private, 300 students
19. Govt. servant and other if any: 250 service holders.
20. Past History: One of the oldest Angami villages. It was known for its great warriors during head-hunting days It simultaneously fought with seven villages of the Angami, Chakhesang, Mao and Rengma. The first village to start Treaty of friendship with Khulazuma, a Chakhesang village. This village is also known as for its honesty and hardworking peasants whose paddy production is one of the highest in the Angami area ensuring food security for its citizen. A patriotic village where the historical, original peace camp is located.

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21. Water availability: i) No pipe water supply
ii) Natural Springs
iii) Rain water during monsoon
22. List of medicinal plants and practice: Use of locally available plants is quite common but no scientific documentation has been done. Needs further research .
23. Village cottage industries: i) 4 carpentry units
ii) 3 Blacksmiths
iii) 5 cloth weaving units
iv) 3 basket weaving units
24. No. Rice Mill: 5 Rice Mills
25. Tourism potential:
- i) Historical Peace Camp, Chedema and Armory.
- ii) Landscape Beautiful with panoramic views of Japfü ranges and more than 70 villages of Nagaland.
- iii) Cultural etc. Known for its cultural dances song and folklore.
26. Health center dispensary: Subsidiary health centre
27. Soil Type: Alluvial soil.
28. Forest Type: Degraded jhum land and mixed woodland forest.

MAP OF CHEDEMA (PART)
KOHIMA DISTRICT
SCALE 1 : 50,000
TOTAL AREA = 2640 Hec (Approx)



TEKHÜLA - A

1. Ngamhoü
2. Ngajoü
3. Ngari
4. Ngamiü (White)
5. Ngamiü (Red)
6. Ngaga
7. Üthimonga
8. Sopa
9. Serünga
10. Tongo (Red)
11. Tongo (White)
12. Tongogodi
13. Tongo (Small)
14. Ngoba
15. Dzülörhi (Big)
16. Dzülörhi (Small)
17. Perhi
18. Makrülha
19. Rulo
20. Mehurüü (White)
21. Mehurü (Red)
22. Thevürü (Red)
23. Thevürü (White)
24. Khezhaehi
25. Kesarü

KEMENYA (Sticky rice)

”
”
”
”
”
”
”
”
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”
”

NHALIE LHA -B

1. Pelou
2. Pelou Khatho
3. Neikuolieke
4. Mezharü (Red)
5. Mezharü (White)
6. Lhakre-ü
7. Lhakra
8. Theyhanga
9. Theke
10. Shülhebu Theke
11. Pfülorü
12. Neimoke
13. Lhati-ü
14. Kega
15. Zumvü
16. Khorü
17. Khathorü
18. Lakarü
19. Rüyhaü
20. Thethilha
21. Ngurü
22. Lhashüü

KECÜCA TELHA SIESOKO - C

1. Tshütenuo
2. Tshüzi
3. Pelhitsü
4. Tshumaü
5. Mezhatshü
6. Tarhatshü
7. Seiteno
8. Menyithesü
9. Menyi shudza
10. Laratabo

No. 2 KHUNUO ZAKO – Names of animal in local dialect

1. Tekhu
2. Tekhra
3. Thelou
4. Thega
5. Menyi
6. Chüzhie
7. Chücü
8. Keli
9. Soie
10. Meseru
11. Chücüvokha
12. Tepfi
13. Kefü
14. Kekrü
15. Konuo
16. Chümengäü
17. Chüshülhe
18. Khuorhä
19. Tsomhuvo
20. Zogachü
21. Chüvuosou
22. Keleikera
23. Chümuno
24. Kejo
25. Keli
26. Kelishüsha
27. Tshekru
28. Tephü
29. Zurü
30. Zuthie
31. Thezu

No. 3 GANYA CIECUYAKEZHAKO - Names of locally grown vegetables

in local dialect

1. Razha chüsi
2. Chüsi (Sitho)
3. Nhachüsi
4. Seidu chüsi
5. Boti tiri
6. Boti tizo
7. Boti khre
8. Rümo Mobvü
9. Mocha
10. Serümo
11. Momuno
12. Vüchü
13. Vütho
14. Gakhro
15. Nyetso tsofü
16. Nyetso tsobu
17. Kholanyetso
18. Thupela
19. Tefüdzü
20. Sama
21. Dzüyhaü
22. Dzüdi
23. Benyieno
24. Seinenyieno
25. Kobi
26. Gakhrie krietho
27. Khovie
28. Themera
29. Thimeri
31. Mesü
32. Kerosü
33. Kepfüsi (Big)
34. Kepfüsi (Small)
35. Keriela
36. Alu
37. Bishuku
38. Rücü
39. Cülha
40. Nharücü
41. Kotsa rücü
42. Gatshu
43. Gazhie
44. Gare
45. Zirüprü
46. Sela Ladi
47. Sela Lase
48. Shüdza
49. Gakhro Khropfü
50. Gakhro (Serüno)
51. Kenyie nyiezi
52. Nyieri
53. Terhünyie
54. Selhouboti
55. Thevütshe
56. Cükhra
57. Pfüdi
58. Shütsi
59. Tsütuo (Kecükezha)

No. 4 PERA ZAKO - Names of Birds in local dialect

- | | | |
|------------------|-------------------|--------------------|
| 1. Kiya | 49. Keda | 97. Vüdie |
| 2. Chürhäü | 50. Peza | 98. Denyie |
| 3. Shüzha | 51. Zano | 99. Thecü |
| 4. Mouvi | 52. Tenya buwenuo | 100. Phrükropfhüri |
| 5. Bwekhro | 53. Seipferanuo | 101. Tupfhevü |
| 6. bwekhro nyüka | 54. Petounuo | 102. Lezokre |
| 7. Rate | 55. Rüpöranuo | 103. Sevü |
| 8. Zogamou | 56. Navünuo | 104. Pfhükro |
| 9. Zogara | 57. Tsasera | 105. Vodzü-ofükie |
| 10. Moupfhü | 58. Tsiechanuo | 106. Kukuriü |
| 11. Yakhrenuo | 59. Matsa | 107. Vücie |
| 12. Terhi | 60. Khozhü | 108. Pene |
| 13. Vüprü | 61. Tsidzü | 109. Yhodura |
| 14. Peü | 62. Shushurünuo | 110. Tshüra |
| 15. Kere | 63. Tsikhro | 111. Rügara |
| 16. Vükhwi | 64. Tsitholhou | 112. Ketsokhru |
| 17. Semou | 65. Peche | 113. Prü |
| 18. Thovü | 66. Terhoranuo | 114. Tsukete |
| 19. Kwio kwirhü | 67. Tsüyhaü | 115. Putshüü |
| 20. Krakrülo | 68. Tsitsüjojo | 116. Terha Radiu |
| 21. Khalhe | 69. Vüvie | 117. Senge |
| 22. Hutu | 70. Nwi | 118. Vüra |
| 23. Ketoukrekre | 71. Tsa | |
| 24. Zhakha khoto | 72. Tsathu. | |
| 25. Jou khalhe | 73. Tsapfhe | |
| 26. Tukhru | 74. Jojo | |
| 27. Thebwe | 75. Krüli | |
| 28. Thede their | 76. Ketsahe | |
| 29. Tè-teu | 77. Provü | |
| 30. Khrüzü | 78. Seithora | |
| 31. Khrulinuo | 79. Zumo | |
| 32. Peri Kekuü | 80. Joge | |
| 33. Koka | 81. Pherira | |
| 34. Tsiphra | 82. Tsapfhe | |
| 35. Nbou | 83. Tsomhavü | |
| 36. Kfi | 84. Kecükecü | |
| 37. Pesha | 85. Krükrü | |
| 38. Pesha nuhü | 86. Bwe-erhü | |
| 39. Péscha nela | 87. Tsakhe | |
| 40. Kitunuo | 88. Khipene | |
| 41. Shümyienuo | 89. Mezha joge | |
| 42. Tsikhra | 90. Rakhre | |
| 43. Teichüra | 91. Shüvi | |
| 44. Thenyie | 92. Shüvivinie | |
| 45. Tekhre | 93. Tehu vü | |
| 46. Seidura | 94. Peza | |
| 47. Vükhri | 95. Vüsi | |
| 48. Keka | 96. Mazhü | |

SUB-STATE	:	CHEDEMA
STATE	:	NAGALAND
AREA	:	2640 Ha (Approx)
HOUSEHOLD	:	370 (Approx)
POPULATION	:	3000 (Approx)
FOREST AREA	:	2633 Ha.
JHUM CYCLE	:	8-12 yrs.

THREATS

1. Traditional Forest Fires;
2. *Jhum* Cultivation;
3. Logging;
4. Hunting & Fishing;
5. Cattle.
6. Plastic waste

OBJECTIVES

1. Reduce *Jhum* Cultivation
2. Stop Hunting
3. Encourage natural regeneration in *Jhum* fallow
4. Protection & conservation of non timber forest produce.
5. Documentation of Flora Fauna
6. Protection of endangered & Threatened Wild Species
7. Promotion of traditional agricultural crops
8. Equal benefit-sharing of all resources.

Strategy and Action Plan.

1. A high powered committee or a new department consisting of scientists, experts and people representatives be set up to identify and streamline the unique biodiversity wealth in its proper aspect.
2. The district administration and the village council be entrusted in executing the instruction, issued from time to time, in letter and in spirit .
3. Proper documentation of traditional laws and customs in regard to local biodiversity practices highlighting the indigenous ecological knowledge for the ignorant and younger generations.
4. Village Youth Organizations and Student Unions with the support of the village authority be made to organize regular workshops/seminars on biodiversity related issues. This should be done with the involvement of biodiversity experts.
5. The village must identify a particular forest area which should be left as it is. This will become the village reserve forest.
6. Jhum Cultivation being the main cause for massive deforestation, measures to be taken up for restricting this practice. Alternate measures like Fishery, Poultry, Dairy, Piggery etc be introduced.
7. Overuse of Plastic and Polythene becoming a serious and real threat to the local ecosystem recycling S.S.I unit to be set up.
8. Environmental Education needs to be introduced and imparted in the schools and colleges, as today's youth are tomorrow's future. The course materials used, need to be locally based.
9. Sensitization of the Village Council, Women's Organization, Village Development Board, Village Youth Organization and other NGOs on the values and importance of biodiversity issues. For, to ignore it would be to our own peril.

Glossary

1. V.D.B : Village Development Board
2. *Tenyidie* : Local dialect spoken by Chedema village
3. *Angami* : One of the Naga tribes. Chedema village also belongs to the *Angami* tribe
4. *Shilloi* : Biggest wetland in Nagaland
5. *Dzukou* ; Name of the valley
6. V.C. : Village Council
7. *Jhum* : Slash and burn method of cultivation (agriculture) or also known as shifting cultivation.
8. *Ura Academy* ; *Tenyidie Academy*
9. *Ura Dze* : *Tenyidie Journal*.

Ute Chedema 9.1.1 / Them Doc BSAP Draft strategy / ver. 1
chedema

STRATEGY AND ACTION PLAN FOR THE SUBSTATE, CHEDEMA

BSAP draft : Strategy

The NBSAP, Nagaland Substate, held its meeting on the 16th of December, 2001 at the residence of Mr. Khrieketuolie Medom, Coordinator. The members discussed in detail the entire program performed so far and prepared an exhaustive list for discussion. On the same day the NBSAP agenda was tabled at a meeting with the Public of Chedema Village. The house resolved the following:

1. The Villagers would seek for ways and means to arrange for sufficient land which would be reserved for regeneration of natural forests. This would also serve as the Gene Pool for the region.

2. The area shall be used for promotion of Non-Timber Forest Produce (NTFP) which shall be properly managed in a sustainable manner. The region is naturally rich in medicinal plants, wild fruits and nuts, bamboo and cane, fibre-producing plants, packaging leaves, dyes, honey, resin and gum, wild vegetables, mushrooms, broom, etc. The Villagers are expert in the preparation of charcoal for which the plant usually used is a species of oak. The soil formed out of decayed plant matter has proven to be high-grade manure which is commonly used for agricultural and horticultural purposes.

It may be mentioned here that Processing Units for the above mentioned products are of vital importance in raising the socio-economic status of the public of the area. This facility, extended at the right time, would go a far way in ensuring that the exercise has borne fruit.

3. It is noted that grazing cattle destroy all cultivated tracts and plantation areas. In this connection the importance of regulated cattle grazing has been discussed and ways and means to put to an end this menace sought.

4. The benefits of wet cultivation have been repeatedly discussed and it has been agreed upon that this is the only way to curtail jhumming. However, this practice would require plenty of water which is very scarce in the area.

Copy to:- Mr Ashish Kohari
Co-ordinator, NBSAP. J.K. Se

5. As it is not economically viable to totally stop *jhum* practices it has been decided that regulated *jhum* practices should be promoted. This will also aid in conservation of domesticated biodiversity.

6. As wood is the main source of energy for cooking and the production of charcoal the importance of large scale plantation of indigenous species of fuel-wood has been stressed. To also reduce the use of wood as a fuel it is necessary to encourage the villagers to use gas. To facilitate this a gas distribution center at the village is necessary. It is also necessary to introduce improvised chullas for economic usage of wood. It is also noted with concern that the Security Forces indulge in burning of jungles. They also collect huge quantities of wood for fuel. To protect the environment it is thus felt that it should be made mandatory for the Security Forces to use gas stoves for cooking.

7. The importance of indigenous species has been stressed upon on a number of occasions. To promote this it is agreed upon that nurseries in the village are of utmost importance. These nurseries will cater to the demands for forestry, horticulture, and cash crops.

8. The farmers have been encouraged to rear fish also in wet paddy fields. They have also been informed of the benefits of piggeries on the upper reaches of the fields. The wastes from the piggeries provide food for the fish as well as good manure for the fields. The fields also may be used for nulaculture. The *nula* is a high-protein gastropod that is a delicacy in the region as well as in many parts of South-east Asia.

9. The promotion of cash crops and vegetables is encouraged as the area is rich in indigenous species which include ginger, potato, garlic, mustard leaves, soya beans, other beans, cabbage, pumpkin, maize, sweet potato, chilli, tomato, etc.

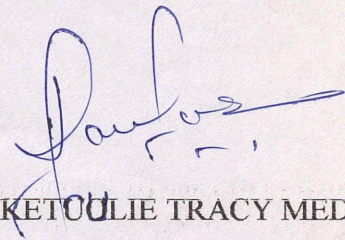
10. The need to do away with chemical fertilizers and pesticides had been discussed. It is therefore decided to encourage only organic farming.

11. It is necessary to promote local-water conservation for optimum utilisation of this scarce resource. To solve this problem it is decided to revive traditional water harvesting techniques as the area receives abundant rainfall. This would be possible by conservation of the watershed areas and by the construction of water-harvesting ponds.

12. Systematic documentation of wild and domesticated biodiversity has been discussed at length. This has led to the preliminary exercise of recording of species found in the village area. So far, nobody has done any documentation in the region. A detailed survey needs to be carried out in the area in order to assess the status.

13. The important aspect remaining now is to create awareness. Awareness Programmes may include nature camps, eco-clubs, incorporation of biodiversity in formal as well as non-formal education, etc. Ecological awareness is to be created so as to stop forest fires and poaching. Seminars, workshops and public hearing need to be organized for different groups such as student bodies, church groups, women groups, etc.

The meeting has also delegated a three-member team from the village to attend the NBSAP meeting from 18.12.2001 to 20.12.2001 at Guwahati.



(KHRIKETOULIE TRACY MEDOM)