



Volume - 3 | No. 1
Jan. to Mar. 2019



Envis Nagaland

An Envis Newsletter

**CENTRE FOR STATE
ENVIRONMENT RELATED
ISSUES**

**NAGALAND POLLUTION
CONTROL BOARD**



**ENVIS (Environmental
Information System)
is a project of
the Ministry of
Environment,
Forest & Climate
Change
Govt. of India**

EDITORIAL TEAM

CO-ORDINATOR :

**Mr. Rusovil John Member
Secretary, NPCB**

PROGRAMME OFFICER:

Ms. Mhasizonuo Angami

IT OFFICER :

Ms. Khriehunuo Rutsa

INFORMATION OFFICER:

Mr. Limitsa S. Sangtam

Editorial

Sustainable development is defined by the Brundtland Commission of the United Nations as development with sustainability that meets the needs of the present without compromising the ability of future generations to meet their own needs. It involves satisfying the needs of the present generation which includes jobs, nutritious food, affordable education, housing and economic growth without depriving the future generations of resources. The overall goal of sustainable development (SD) is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process. One of the sectors for Sustainable Development is Beekeeping. Beekeeping, also known as Apiculture, is an agricultural branch in which beekeepers take care of the honey bee colonies, usually situated in hives. Beekeepers (or apiarists) keep bees in order to collect honey and other products of the hive (Beeswax, Propolis, Pollen, Royal Jelly) and to pollinate crops. Bees play a vital part in our natural ecosystems as they are responsible for the pollination of many fruit, nuts, vegetables and other species. Beekeeping contributes to food security, poverty reduction, employment creation and income generation.

With the Nagaland state geographical area of 16,579 sq.km, forest occupy an area of 8,629 sq km, i.e. 52.04% which have a lot of scope and potential for Beekeepers. In a state like Nagaland, where access to income through industrial means is limited, taking up such activities which does not require complex technologies can contribute significantly to livelihood security while providing positive impacts to the flora and fauna found within. The present issue aims to promote awareness about the benefits of bee keeping and the initiatives taken up thus far by the Nagaland Bee Keeping and Honey Mission.



BEEKEEPING IN NAGALAND- THE ROAD THUS FAR AND THE WAY AHEAD

Contributed by Nagaland Beekeeping and Honey Mission

INTRODUCTION:

Honey bees are the most industrious and valuable creatures for mankind. They are the source of honey and various other hive products. Honey bees have been working in our field tirelessly for millennia and in the process pollinating our agricultural crops and thus are agriculturalist best friend. They also play an indispensable role in maintenance of our biodiversity.

Bees have been reared by humans since time immemorial and beekeeping is the practise of rearing honey bees in hives for the purpose of obtaining honey and other hive products like beeswax, pollen, propolis, royal jelly and bee venom, which are commercially marketable and in huge demand for various industrial uses. Beekeeping is an environment friendly activity which can be taken up by people from all walks of life. It involves very little investment and allows time flexibility, but the return is very lucrative and thus is an attractive livelihood option for the unemployed, small scale farmers and can also be taken up as an agro-based activity. Beekeeping offers immense scope for self-employment and indirect employment. It can facilitate the establishment of both small scale cottage industries and large scale commercially viable enterprise.

BEEKEEPING PROSPECTS IN NAGALAND:

Since time immemorial beekeeping has been in practice in almost all the rural pockets of the State. Bees are reared by the many tribal beekeepers in simple boxes, tree trunks and logs, crevices, bamboos, underground chambers etc. The existence of a rich traditional knowledge on beekeeping practices, ideal climatic conditions and natural endowments of abundant forest coverage makes it a veritable utopia for honey bees to thrive. The important thing is to recognize people's existing traditional knowledge and skills and build on them the scientific methods of bee-keeping for greater income generation and to ensure sustainability.

The State is also blessed with a rich bio-diversity (floral diversity) for bee colonies to survive and rejuvenate. Diversity of bee resources (different species of honey bees) both wild and domesticated and human resources, the existence of a huge tribal populations that are attuned to living off the forest and its resources in a sustained manner paves the way for ushering in a thriving beekeeping and honey sector. It also has the potential to produce premium honey due to lesser industrialization and stress being laid on organic farming systems.

Beekeeping as a profession has also been gaining tremendous momentum in recent times. People are willing to take up apiculture alongside their agricultural activities to bolster their income through honey and increase in crop yield, the farmers are readily able to apply the principles of bee keeping to the climate and vegetation around them. Beekeeping has the scope to enhance and conserve the rich yet fragile plant bio-diversity of the state.



ABOUT NBHM:

The Nagaland Beekeeping and Honey Mission since its launch as a Mission mode programme in 2007 has been committed to promoting and developing the beekeeping activities and honey enterprise of the State. It has sensitized the populace on the importance of honey bees, beekeeping and honey enterprise and people everywhere are sensitized and encouraged to take up beekeeping as a source of livelihood. Beekeeping activities is picking up in all the parts of the state through the various initiative and developmental schemes of the mission. All the activities have been implemented on a war footing keeping in mind the environmental, economic and social objectives laid down by the mission.

Economic objectives:

- To develop scientific and sustainable beekeeping industry in Nagaland.
- To increase agricultural productivity through pollination of bees.
- To provide diversified employment opportunities through commercial beekeeping and honey market for the burgeoning educated unemployed youth and reap the benefits through increased levels of income and employment generation.
- To develop effective forward and backward linkages with beekeepers for providing technical know-how, training and procurement of honey and other bee products.
- Make Nagaland the epicentre of honey trade for the whole country and develop access to export markets.
- Develop communication network for enhancing and promoting bee keeping as a major economy boosting industry in Nagaland.

Social objectives:

- To promote food and nutritional security, environment security, productivity, profitability through honey revolution in the State.
- To popularize honey consumption as essential food item in daily diet and positioning honey as both a healthy food and as an ingredient in products with medicinal value.
- Environmental objectives:
 - To protect and conserve the rich bio diversity associated with large bee foraging area in the State.
 - Increase the population of bee colonies through active breeding and promotional techniques and maintain ecological balance.
 - Honeybees pollinate a large number of plants and crops which helps to increase productivity and maintain the stability of ecosystems.

VISION STATEMENT:

“A transformed Nagaland of prosperous people leading sustainable livelihood with a vibrant economy that is self-reliant, resulting in peaceful and harmonious atmosphere based on equity. There are agro-based industries competing in the global market that has been catalysed through apiculture, biodiversity conservation and environmental protection. Nagaland is internationally recognized as the knowledge centre for indigenous bees and its development. A place where there is happiness everywhere.”

ACTIVITIES OF NBHM:

- Survey and documentation
- Sensitization and awareness creation
- Capacity building and skill upgradation programmes
- Research studies
- Apiculture development and promotion
- Post-Harvest Management and Quality control
- Market linkages and Value additions
- Consultancy services
- Convergence programs with Line Departments.



Through the interventions of the mission, the apiculture activities in the state has substantially undergone a shift from a largely rudimentary level to a well organised and sustainable livelihood activity involving various stakeholders in all the Api villages spread across the state. Traditional beekeeping has been strengthened and improvised and the unique beekeeping practices of the Nagas have been documented. 11 years of learning's and experiences has led to better understanding of the unique nature and behaviour of our indigenous species of honey bees and introduction of scientific management of bees has led to better quality management and surplus honey production leading to income generation for the beekeeping community.

As the first mission mode programme undertaken to create a road map for promotion and development of beekeeping and honey enterprise, the activities of the mission has not gone without recognition by the rest of the country. Nagaland is presently the leading honey producing State in the whole of North East Region. The beekeeping community has increased manifold and the tribesmen of beekeepers has become more organised and empowered. The once isolated beekeepers in the villages have been organized into **320 vibrant Village Beekeeping Committees.**

Their knowledge on scientific and hygienic beekeeping has been enhanced with hands on technological transfer and their entrepreneurial skills sharpened with exposure and awareness creation on the importance of honey enterprise. The state is also witnessing the introduction of honey bee colonies in number of agricultural, horticultural and plantation farms across the state. This trend of integrated farming is a positive step towards bumper harvests in an era of achieving food security for all.

The achievements of the mission have encouraged the rest of the North Eastern States to launch beekeeping missions in their respective States. As the forerunner in the region the mission has been providing trainings and consultancy services for key personnel and lead farmers of the NE States. At the International level, beekeeping activities of the State has been put in the World beekeeping map through various paper presentations and participation at major world beekeeping conferences and workshops, leading to many bee enthusiasts and bee experts showing keen interest of our unique beekeeping practices by visiting the State to get first-hand experiences and interactions with the beekeepers in the villages.

With the interventions of the mission a vibrant and organised beekeeping and honey sector has been established. With the mission's initiative **18520** people have been trained on scientific management of honey bees. A total of **505 Sensitization programmes** have been conducted and **486 number of trainings** conducted covering all 11 districts of the State. **Bee boxes and equipments totalling to 50,500 numbers** have been issued to beneficiaries till date. The growing tribesmen of honey producers is producing around

430 MT of honey annually, making Nagaland the leading honey producing destination of the NE region. 'Nagaland Honey' is now the first choice of honey for most honey connoisseurs not only in the state but beyond the region. Demands for Nagaland honey is ever increasing from various buyers and honey traders from across the country and international buyers. The onus is now on the mission to work towards meeting this enormous demand.

The State Government has declared NBHM as the State Designated Agency (SDA) for implementing Beekeeping and Honey development programmes in Nagaland. The State Government has declared the 5th of December of every year as the Nagaland Honey Bee Day (NHBD), with the approval of the Cabinet, Vide their OM. No. CAB-2/2013 dated 26th April, 2017 and Government Notification No. APC/CELL/NBHM/2010-11 dated 7th August, 2017. This is a befitting recognition for the vast scope and potentials of the beekeeping and honey sector. The nascent beekeeping and honey sector of the State promises to be an Investor's destination as it offers an enormous potential for research undertakings on the bee species diversity, honey marketing, value additions, development of apitherapy and bee tourism which is largely lying untapped.



*A bee farm at Chungtia village, under
Mokokchung district
(Photo courtesy NBHM)*



*Apiary at Yisemyong Village
(Photo Courtesy NBHM)*





*Honey Processing Centre at 6th mile
Dimapur (Photo Courtesy N.B.H.M.)*



*Practical sessions at Sirhima Village
under Dimapur district
(Photo Courtesy N.B.H.M.)*



*Trainees on Beekeeping
at Yachang A village
(Photo Courtesy N.B.H.M.)*





ROLE OF HONEY BEES IN BIODIVERSITY CONSERVATION

Bees are important pollinators and many ecosystems depend on the pollination by bees for their existence and for increasing their genetic diversity through cross-pollination. Bee pollinators strongly influence ecological relationships, ecosystem conservation and stability, genetic variation in the plant community, floral diversity, specialization and evolution. Bees play an important role in ecosystem services. Generally honey bees are important pollinators responsible for healthy development of the environment through enhancing transfer of pollen grains which necessitate genetic diversity of different species.

Bees and plants have co-existed since time immemorial. Bees depend for their food on plants: nectar provides them with carbohydrate, while pollen supplies protein. Most bees also depend on plants for shelter. In return, bees help with the vital process of plant reproduction. They cross-pollinate flowers, diversify the genetic background of seed, and help plant species reproduce and survive. Bees need a clean and healthy environment, they are part of the delicate balance in the ecosystem. The existence of natural bee colonies is a good indicator of a healthy environment

Honey bees are responsible for pollinating about 80% of all flowering plant species and at least 1/3 of the world's agricultural crops rely on pollinators for their pollination. Therefore, lesser the bees, lesser the biodiversity. Since bees are the most important pollinators, without the bees a lot of the food which we eat today will not be produced fast enough to feed the world population. If bees become extinct, so will many species of plants. If bees are gone, the food chain will be broken. Some plants will not be able to grow due to lack of pollination. Production of seeds, nuts, berries and fruits are highly reliant on pollination. Among all pollinators, honeybees are the most efficient and cheapest way of increasing crop yields.

CHALLENGES:

Without a doubt the State with its rich bio diversity has vast potentials to develop and further upgrade the beekeeping and honey sector and be in the reckoning as a major beekeeping hub. Presently in the world beekeeping scenario there are major challenges like, loss of exotic bee species affecting honey production, increased usage of antibiotics in management of honey bees leading to poor or hazardous quality of honey. At the same time with reports of most honey available in world markets branded suspect as synthetic honey, the demand for pure organic honey produced from States like ours is on the rise.

Given such a scenario and to logically seize and bank on the present opportunity and enormous potential, the beekeeping scenario of the State needs to be taken to a further level and upgraded to meet the global demands as well as to meet the increased demands for promotion of beekeeping and honey enterprise not only locally within the State but Regionally as well as Nationally.

Various other threats to beekeeping are emerging due to habitat loss caused by loss of vegetation, rampant deforestation and increased areas under human habitation. Threat of jungle fires, logging and Jhum cultivation are factors that severely affect the forest cover and ultimately the loss of natural habitats for the wild species of honey bees like the rock bees and little bees. The loss or fragmentation of suitable habitats due to development reduces nesting environment for the bees. Abandoned farms, growing crops without leaving room for wild life and growing gardens with flowers that are not friendly to pollinators as in mono-

cropping needs to be discouraged. Farmers need to be encouraged to conserve habitats and provide nest sites in their farms and make others aware of benefit of cross pollination.

Another major challenge to the honeybees and beekeeping are the effects of climate change, this has affected honeybee populations and beekeepers worldwide. Due to the effects of Climate change, bees' behaviours are affected, flowering patterns of plants are affected and ultimately honey production is affected. Besides the rampant use of harmful pesticides has led to bee populations been wiped out. Also the introduction of exotic species are threatening the indigenous bee species.

Saving the pollinator bees has real economic, ecological, emotional and ethical value. Pollination, biodiversity and our well-being are all interconnected. To bring about global, sustainable and ambitious change, the need of the hour is to educate everyone about the valuable contributions by pollinator bees and make concerted efforts to save the bees for the future survival of mankind and ecosystems

WAY FORWARD:

- To intensify the Apiculture development and promotional activities
- To enhance the State's Honey production
- To turn the Mission mode programme into a revenue earning Cooperation
- To form an empowered beekeeping community by formation of District Level Beekeepers Federation and State Level Beekeepers Federation
- Convergence with Agri and Allied departments for integrated farming approach whereby Beekeeping can be a catalyst for increased crop yields and play a role in ecosystem conservation
- To tie up with Research Institutes and Universities for more R& D activities
- To create a niche market for 'Nagaland Honey'

Things you can do to save the bees

- Stop indiscriminate usage of pesticides and insecticides
- Stop jungle burning as they destroy natural habitats
- Plant bee foraging plants
- Provide sites for bee hives
- Support your local beekeeper
- Learn about bees and tell others
- Become a beekeeper



All queries and feedback regarding this Newsletter can be addressed to :

Mr. Rusovil John, Member Secretary

Nagaland Pollution Control Board & ENVIS Co-ordinator ENVIS Hub, Nagaland

Signal Point, Dimapur-797112

Email : ngc.nagaland@yahoo.com